STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR KING AND TANNER CRAB FISHERIES OF THE BERING SEA AND ALEUTIAN ISLANDS REGIONS: ECONOMIC STATUS OF THE BSAI CRAB FISHERIES, 2013

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Request for comments

While the statistics in this report are intended to characterize the economic status of BSAI crab fisheries, the authors welcome any comments from industry members, fishery managers, researchers, and other BSAI crab fishery stakeholders on the validity and utility of the statistics presented. As this report is anticipated to evolve into a suite of annually-reported statistics, accompanied by one-time analyses with more immediate relevance to current fishery conditions, it is hoped that users will take an active role in this report's development by identifying data or estimates that can be improved; by providing the information and methods necessary to improve estimates for both past and future years; by suggesting other means of summarizing or presenting available data; and by suggesting additional measures of economic performance that should be included for regular or one-time reporting. Those interested in providing comments on this report are encouraged to do so through the user feedback survey available online at:

http://www.afsc.noaa.gov/REFM/Socioeconomics/Contact/SAFE_survey.php

This report, along with electronic files of selected tabular data, is available online at:
http://www.afsc.noaa.gov/refm/Socioeconomics/SAFE/default.php

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Abstract

This report presents information on economic activity in commercial crab fisheries currently managed under the Federal Fishery Management Plan (FMP) for Bering Sea and Aleutian and Islands King and Tanner Crab (BSAI crab), with attention to the subset of fisheries included in the Crab Rationalization (CR) Program. Statistics on harvesting and processing activity; effort; revenue; labor employment and compensation; operational costs; and quota ownership, usage and disposition among participants in the fisheries are provided. Additionally, this report provides a summary of BSAI crab-related research being undertaken by the Economic and Social Sciences Research Program (ESSRP) at the Alaska Fisheries Science Center (AFSC).

Economic Status Report Executive Summary: BSAI Crab Fisheries, 2013

The BSAI crab fisheries managed under the North Pacific Fishery Management Council's Fishery Management Plan (FMP) for Bering Sea/ Aleutian Islands crab are currently prosecuted by an active fleet of 110 catcher vessels and three catcher/processors, and landed and processed at 21 processing facilities throughout the region. Of the 10 crab stocks managed under the FMP, seven[1] are currently open to targeted fishing. Pribilof Islands red- and blue king, and Western Aleutian red king crab stocks are currently designated overfished, as detailed in the assessments for these stocks, and the Eastern Bering Sea Tanner (EBT) crab fishery remained closed to targeted fishing for the 2012/13 season under the State of Alaska's management strategy.

This report provides a comprehensive presentation of available information on status and trends in a variety of indicators of economic performance of BSAI crab fisheries for 2013. The full report provides detailed information regarding production, sales, revenue, and price indices in the harvesting and processing sectors, income, employment, and demographics of labor in both sectors, capital and operating expenditures in the fishery, quota share lease and sale market activity, changes in distribution of quota holdings, productivity in the harvesting sector, U.S. imports and exports of king and Tanner crab, price forecasts, performance metrics for catch share programs, and other information regarding data collection and ongoing economic and social science research related the BSAI crab fisheries and related communities. The following summarizes two sets of primary indicators describing aggregate changes in gross volume and value of production, employment, and labor earnings in the crab processing and harvesting sectors.

Fishery production and economic value

Harvesting and processing sector production statistics by crab fishery, including ex-vessel and 1st wholesale output, estimated revenue, and average prices are shown in for calendar years 2008-2012 and summarized in Figure 1. Across all fisheries managed under the BSAI Crab FMP, the total volume of ex-vessel landings during 2012 was 104 million pounds, a 48 percent increase from the previous year. Processing sector finished production volume during 2012 was 67 million pounds aggregated over all FMP crab species and product forms, a 39 percent increase over the previous year. After reaching the highest levels observed since 2004, average prices reported in both sectors declined toward 2010 levels for most BSAI crab produced in 2012, with the result of total gross revenues over all fisheries remaining nearly constant from 2011 levels

[1] Individual statistics where indicated in Tables 1 and 2 are suppressed in this report due to confidentiality restrictions and the small number of reporting entities; this includes most values for the Pribilof Island golden king (PIG) crab fishery and processing sector results for the Norton Sound red king (NSR) crab fishery; values that are indicated as suppressed in Tables 1 and 2 are also excluded from values reported in aggregate over multiple crab fisheries. Except where noted, the suppressed values are sufficiently small that they have minimal effect on the accuracy of aggregate information at the level of precision reported here.

despite substantial increases in physical output: $253[2] million ex-vessel for the year, decreased from $258 million for 2011 (-2%), and $392 million first wholesale revenues (+8% from the previous year).

As of 2012, allowable catch quantities in all BSAI crab fisheries currently open to targeted fishing are fully exploited or nearly so (> 98% of the total catch allocation is landed), and recent inter-annual variation in commercial landings largely reflects stock assessment results and catch limits rather than changes in fishing capacity or exploitation rate. Notably, however, 2012 represented the first season that landings in the Saint Matthew Island blue king (SMB) crab fishery approached 100% of the combined target allocation, from less than 50% in 2009 when the fishery re-opened. The increase in aggregate production during 2012 was driven largely by the 88.9 million pounds of Bering Sea snow crab (BSS) landed, a 63 percent increase in volume over the previous year. Norton Sound red king crab (NSR) landings increased to 500 thousand pounds landed (+28%), and landings of 5.8 million pounds in Aleutian Islands golden king (AIG) and 7.8 million pounds in Bristol Bay red king (BBR) crab fisheries changed only slightly from the previous year, with the latter remaining at approximately half the level of the previous 5-year average.

Similar to ex-vessel production, the proportional increase in processing sector output aggregated over all active crab fisheries was driven by the 56.9 million pounds of BSS fishery production, and increased by 50 percent in volume over the previous year. Finished volume in the BBR fishery of 5.2 million pounds (2.4 mt) was unchanged from 2011, where both years were near historical lows for the period since 1998. AIG and SMB fisheries produced 3.8 million and 1.13 million pounds of finished volume, decreasing by 7 and 15 percent from 2011 output, respectively.

Ex-vessel and wholesale Alaska crab prices in 2012 reversed the upward trend of 2009-2011 in four of the five fisheries. BBR fishery average ex-vessel price dropped by 30 percent for 2012, to $7.27 per pound, reversing the 34 percent price increase from 2010- 2011; the average 2012 BBR wholesale price reported by processors declined by 20 percent, to $15.09 per pound for 2012. AIG prices in both sectors similarly offset 2011 increases, falling to $3.51 ex-vessel (-24%) and $8.37 first wholesale (-13%) per-pound averages. The SMB average first wholesale price of $12.45 fell by 12%, and the $3.77 average ex-vessel price fell 28% from 2011. The exception to the general result of falling prices for 2012, NSR crab sales continued a gradual four-year trend of increasing average ex-vessel price, reaching $5.48 per pound, 5.6% over the 2011 average[3].

The estimated gross revenue value of production in the 2012 BSS fishery increased from 2011 levels to $167 million ex-vessel (+21% over 2011), and $268 million first wholesale (+28%), compared to much larger proportional increases in physical output of 68 percent and 50 percent, respectively. With physical output of both sectors in BBR and AIG fisheries largely held constant, estimated gross revenues for BBR fell to $56.8 million ex-vessel (-30%) and $78.7 million first wholesale (-36%), and AIG estimated revenues fell to $20.5 million ex-vessel (-26%) and $31.6 million wholesale (-10%). Declines in both physical output and prices in the SMB fishery combined to reduce ex-vessel gross revenue to an estimated $5.97 million (-39%), and

[2] All monetary values (e.g., price, revenue, or cost) in this document are reported as inflation-adjusted 2012 U.S. dollars.

[3] Processing sector results for the Norton Sound red king crab fishery are not available.

estimated first wholesale revenue fell to $14.1 million (-25%). The NSR fishery exhibited the opposite, with increases in both price and output combining to increase gross ex-vessel revenue to an estimated $2.72 million (+30%). The 20-35% proportional inter-annual variation in gross revenue from 2011-2012 for these fisheries is approximately consistent with the average degree of variation over the last 15 years; longer time series for these and other measures of crab fishery performance are available in the full BSAI Crab Economic Status Report, currently being updated for release in November, 2013.

To provide more current production and revenue value information for this report, preliminary estimates of 2013 production and price variables are produced for first wholesale prices for AIG, BBR, and BSS fisheries using a time series econometric model framework described in Section 4 of the report. Most information that is typically available on fishery sales revenue and average prices for Alaska fisheries, including most information in this report, relies on data collected through mandatory annual economic censuses from which publishable data are not available until 6-12 months after the end of the calendar year of the data (e.g., BSAI Crab Economic Data Reports or ADF&G Commercial Operators Report). The model leverages the most current data for U.S. import- and export- volume and price series for king and snow crab from the U.S. Merchandise Trade Statistics (which are released on a monthly basis and are current to within 3 months) to improve the accuracy of estimates of recent Alaska crab wholesale market prices, prior to availability of enumerative data sources. Combined with recent in-season production data and ex-vessel to wholesale prices indices for Alaska crab fisheries, this enables improved forecast estimates of revenue value for recent ex-vessel and wholesale production.

Model results indicate that the first wholesale price for golden king crab produced and sold in the AIG fishery during 2013 is estimated at $10.24, with a 90% confidence forecast interval of $9.17-$11.34, substantially higher than the average price of $8.37 observed for 2012. The wholesale price for snow crab produced and sold in the BSS fishery during 2013 is estimated at $5.48, with a 90% confidence interval of $5.18-$5.78. The Bristol Bay red king crab price for 2013 is forecast with a median of $18.38 ($15.90-$20.96 confidence interval). Forecasts for both red- and golden king crab indicate an increase of approximately 22% above 2012 averages, and snow crab price is forecast to increase 16% over the 2011 average. Revenue value of 2013 year-to-date finished production of 1.36 million pounds of golden king crab landed in the western and eastern AIG fishery during January-May is estimated at 0.86 million pounds, and gross wholesale revenue is estimated at $8.86 million. With 65 million pounds of Bering Sea snow crab landed and sold during January-May 2013 (>98% of the 2012/13 66.35 million pound catch limit), final ex-vessel revenue for the fishery is estimated at $154 million (± $8 million), based on an estimated ex-vessel price of $2.36 (± 0.13) per pound. Estimated wholesale production and revenue snow crab are 42.7 million pounds and $234.22 (±$12.82) million.

Employment and Income

A summary of selected indicators from the most recent employment data available for Crab Rationalization (CR) program fisheries is provided in Table 2[4]. The number of vessels operating in CR fisheries during 2012 increased from 77 to 83, and from 102 to 113 across all BSAI crab fisheries. Based on the average (mean) number of crew onboard (as reported in eLandings catch

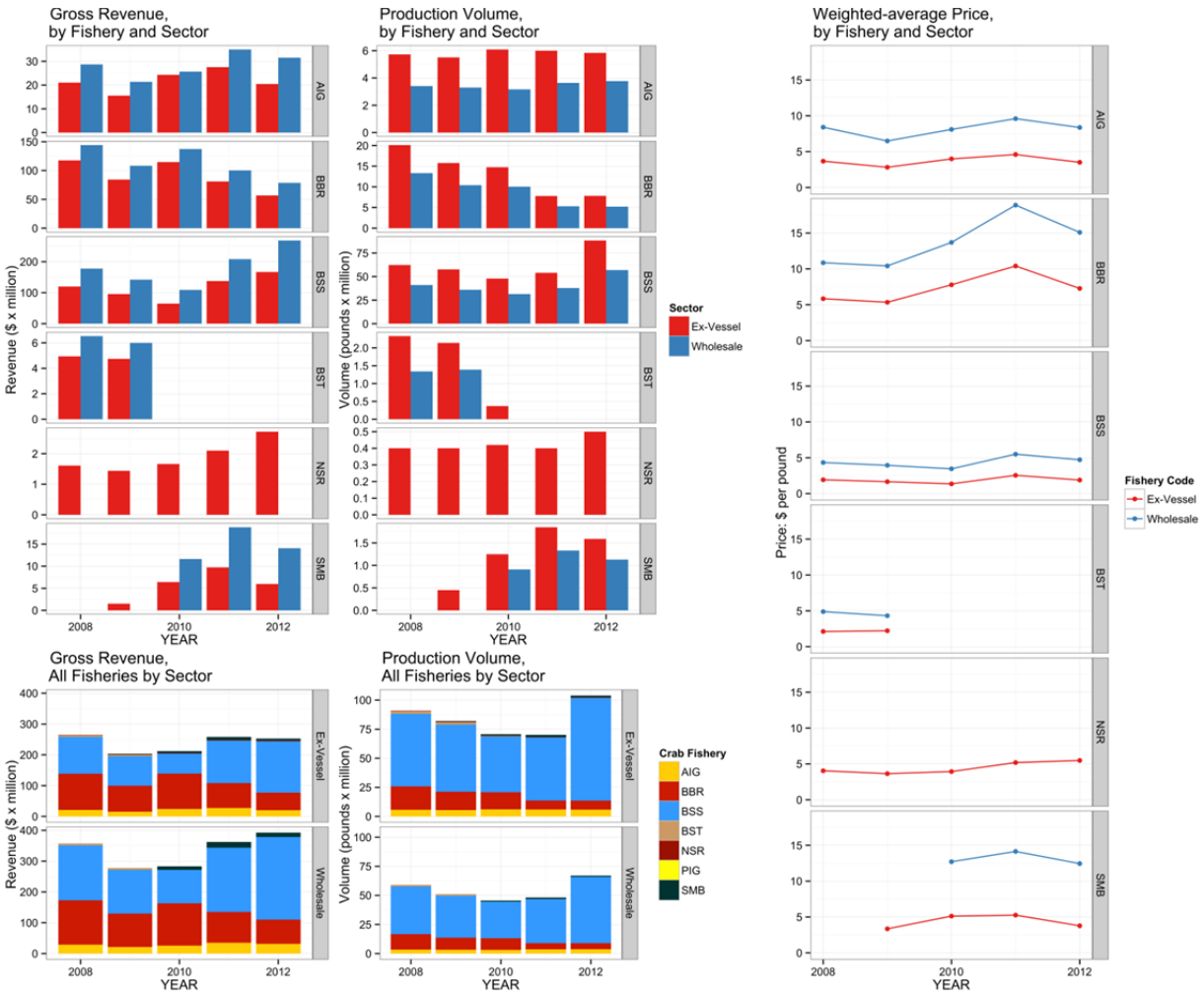
[4] Crab EDR data for calendar year 2012 are reported where available, but results are preliminary pending completion of data validation.

accounting records for crab vessels, including both CDQ and IFQ landings), there were an estimated 1037 crew positions across all 83 vessels in CR fisheries in 2012. Over the last 5 years, both the aggregate number of vessels and total crew positions have varied contemporaneously with the total size of crab catch allocations, declining in 2010 and 2011 and increasing in 2012 as BSS allocations were substantially increased. However, variation in both the number of vessels operating in individual fisheries and number of crew positions is not proportional, and is generally less than variation in catch. For example, interannual variation in total catch in the BBR fishery has been as high as 19%, while the largest year-on-year change in crew positions was 5% (decreasing between 2009 and 2010), and in the 2012 BSS fishery, crew positions increased by 10% from the previous year, compared to the 63% increase in catch. As documented in the report, much of the variation in labor input in response to changes in catch allocations is in terms of total number of days vessels and crews operate in the fisheries, rather than in the number of vessels or crew members employed in the fishery.

Labor compensation in the form of revenue-share payments to crab vessel crews as a group totaled approximately $38.5 million in 2012, with vessel captains receiving $17.6 (Table 2). The aggregate increase in labor earnings from 2011 of slightly more that 10% over all CR fisheries was driven by increased ex-vessel revenue in the BSS fishery for 2012, where captain and crew labor earnings of $12 million and $26 million, respectively, were up 27% over 2011 levels of $8.7 and $19.2 million; all other program fisheries saw declines in labor earnings for the year. Crew and captain payments in the golden king crab fisheries totaled $3.4 million and $1.8 million, respectively, declining by 11% and 16% from 2011 levels. Total captain and crew earnings in the 2012 BBR fishery declined by 33% to $3.5 and $7.85 million, respectively. Combined crew and captain payments in the 2012 SMB fishery totaled $1.2 million, declining 33% to $830,000 for crews, and by 35% to $380,000 for captains.

Crab processing labor input associated with the IFQ and CDQ fisheries is estimated at nearly 1.3 million hours of processing labor expended on crab production in 2012, generating slightly greater than $14 million in labor income. The trend in processing labor input as reported in the BSAI Crab Economic Data Report (EDR) indicates general consistency with catch and production volume fluctuations. With the sharp increase in landings in the BSS fishery, total processing labor hours increased by 95% in that fishery, while all other CR fisheries open during 2012 moderately decreased (AIG, BBR) or increased (SMB) use of processing labor.

Figure 1: BSAI Crab Ex-vessel and First Wholesale Production, 2008-2012



(a)Revenue, (b)Volume, and (c) Weighted Average Price, 2008-2012; gross revenue and production volume by sector are presented in the upper pair of panels by individual crab fishery for comparison of within-fishery variation over time, and summarized over all fisheries in the lower panels to illustrate the variation in aggregate values and relative contribution of each fishery over time. See Table 1 footnotes for details.

Table 1: BSAI crab harvesting and processing sector output - production volume, gross revenue, and average price, 2008-2012

	Harvesting sector: Ex-Vessel Statistics [a]						Processing Sector: First Wholesale Statistics [b]					
			Landed volume						Finished volume			
Fishery: Year	Vessels	CFEC permits	1000 mt	million lbs.	Gross revenue $million	Average price $/lb.	Plants	Buyers	1000 mt	million lbs.	Gross revenue $million	Average price $/lb.
Total - All BSAI crab fisheries[d]												
2008	116	261	41.20	90.82	$264.93		21	23	26.80	59.07	$357.65	
2009	112	242	37.18	81.96	$203.35		22	26	23.16	51.06	$277.69	
2010	102	232	32.08	70.72	$211.95		19	24	20.65	45.53	$283.30	
2011	102	235	31.79	70.09	$258.04		18	27	21.85	48.17	$362.50	
2012	113	284	47.15	103.95	$287.25		20	26	30.82	67.94	$387.33	
Aleutian Islands golden king - Eastern and Western (AIG)												
2008	5	12	2.60	5.73	$21.03	$3.67	7	7	1.55	3.41	$28.71	$8.41
2009	5	13	2.50	5.51	$15.56	$2.82	6	9	1.50	3.30	$21.39	$6.49
2010	5	13	2.76	6.09	$24.32	$3.99	5	9	1.44	3.17	$25.67	$8.10
2011	5	13	2.72	6.00	$27.58	$4.60	7	14	1.65	3.64	$35.00	$9.60
2012	6	14	2.65	5.84	$23.74	$4.06	8	14	1.68	3.71	$27.05	$7.30
Bristol Bay red king (BBR)												
2008	79	97	9.13	20.13	$117.54	$5.84	15	17	6.04	13.31	$144.35	$10.85
2009	70	86	7.16	15.78	$84.22	$5.34	13	16	4.72	10.40	$108.27	$10.41
2010	65	79	6.68	14.73	$114.68	$7.78	14	17	4.55	10.03	$137.29	$13.69
2011	62	71	3.53	7.79	$80.95	$10.40	14	18	2.41	5.30	$100.18	$18.89
2012	64	74	3.54	7.80	$62.36	$7.99	12	17	2.39	5.27	$76.23	$14.47
Eastern Bering Sea snow (BSS)												
2008	78	108	28.23	62.23	$119.81	$1.93	16	17	18.61	41.02	$178.06	$4.34
2009	77	103	26.17	57.69	$95.87	$1.66	15	17	16.31	35.97	$142.04	$3.95
2010	68	87	21.70	47.84	$64.88	$1.36	11	13	14.25	31.41	$108.71	$3.46
2011	68	88	24.52	54.05	$137.68	$2.55	14	16	17.18	37.89	$208.48	$5.50
2012	72	109	40.02	88.23	$191.64	$2.17	13	16	26.21	57.79	$270.27	$4.68
Eastern Bering Sea Tanner (BST)[d]												
2008	30	38	1.06	2.33	$4.94	$2.12	11	11	0.61	1.34	$6.53	$4.89
2009	18	24	0.97	2.14	$4.75	$2.22	10	11	0.63	1.39	$5.99	$4.32
2010	4	5	0.17	0.37	--	--	7	7	--	--	--	--
2011-2012						CLOSED						

Table 1 (continued)

	Harvesting sector: Ex-Vessel Statistics [a]						Processing Sector: First Wholesale Statistics [b]					
			Landed volume						Finished volume			
Fishery: Year	Vessels	CFEC permits	1000 mt	million lbs	Gross revenue $million	Average price $/lb	Plants	Buyers[c]	1000 mt	million lbs	Gross revenue $million	Average price $/lb
Norton Sound red king (NSR) [e]												
2008	22	34	0.18	0.40	$1.61	$4.04	2	2	--	--	--	--
2009	23	29	0.18	0.40	$1.44	$3.64	3	3	--	--	--	--
2010	23	37	0.19	0.42	$1.66	$3.93	2	3	--	--	--	--
2011	25	38	0.18	0.40	$2.10	$5.19	2	2	--	--	--	--
2012	30	64	0.23	0.50	$2.72	$5.48	3	3	--	--	--	--
Pribilof Island golden king (PIG)												
2008- 2009						CLOSED						
2010	1	1	--	--	--	--	2	2	--	--	--	--
2011	2	2	--	--	--	--	1	1	--	--	--	--
2012	1	1	--	--	--	--	1	1	--	--	--	--
Saint Matthew Island blue king (SMB)												
2008						CLOSED						
2009	7	7	0.20	0.45	$1.51	$3.35	2	6	--	--	--	--
2010	11	14	0.57	1.25	$6.41	$5.12	5	9	0.41	0.91	$11.63	$12.71
2011	18	23	0.84	1.85	$9.73	$5.26	6	11	0.60	1.33	$18.83	$14.14
2012	17	22	0.72	1.59	$6.80	$4.29	6	11	0.53	1.17	$13.77	$11.78

Source: ADF&G fish tickets, eLandings, CFEC pricing, ADF&G Commercial Operator's Annual Report, NMFS AFSC BSAI Crab Economic Data Report (EDR) database. Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2012-equivalent value. Information suppressed for confidentiality where indicated by "--"

[a] Except where noted, ex-vessel results reflect total commercial sales volume and value across all management programs (LLP/open access, IFQ, CDQ, ACA), inclusive of all harvesting sector production (CV, CP, and catcher-sellers); ex-vessel value of CP and catcher-seller landings incorporated in revenue total by approximation using average CV ex-vessel sale price; ex-vessel average price results are sourced from CV sector EDR data where available (2008-2011 for CR program fisheries) and secondarily from CFEC gross earnings estimates (2012 for CR fisheries; all years for non-CR fisheries).

[b] Counts of buyers include CPs landing and processing their own crab, but exclude catcher sellers (NSR fishery only); processing sector results inclusive of all CP and shoreside processor output; finished volume sourced from crab processor EDR production reports where available (2008-2011), or eLandings ex-vessel sales volume adjusted by average product recovery rate (PRR) by fishery (2012). Wholesale price results are sourced from crab processor EDR gross earnings reports where available (2008-2011) and secondarily from COAR gross earnings estimates (2012); gross wholesale revenue estimates are derived from price and volume sourced or estimated as described.

[c] Statistics reported for "All BSAI Fisheries" reflect information aggregated over all FMP crab fisheries, excluding fishery-level confidential information suppressed where indicated by "-- ".

[d] Landings and ex-vessel revenue suppressed in years where CDQ fishery landings are confidential.

[e] Data for Norton Sound red king crab are aggregated over the summer and winter commercial fisheries.

Table 2: CR program fisheries crew and processing sector employment and earnings, 2008-2012

	Crab Crew Employment and Earnings							Crab Processing Employment and Earnings					
		Crew positions [a]		Crew share [b]		Captain share [b]			Processing labor hours [c]		Processing labor payment		
Fishery: Year	Obs	Total	Vessel mean	Total $million	Vessel median $1000	Total $million	Vessel median $1000	Obs	Total 1000 hrs.	Plant median 1000 hrs.	Total $1million	Plant median $1000	Median $/hour [d]
All CR Program Fisheries [e,g]													
2008	96	*1045*		*$32.4*		*$15.1*		18	1022		$13.5		
2009	89	1155		$26.9		$12.6		17	*828*		*$11.1*		
2010	79	964		$26.5		$12.7		15	*771*		*$8.3*		
2011	77	1014		$34.7		$16.1		16	725		$8.4		
2012	83	1081		$38.5		$17.6		13	1262		$14.2		
Aleutian Islands golden king _ Eastern and Western (AIG) [f,g]													
2008	4	--	--	--	--	--	--	6	38	2.8	$0.6	$101	$12.38
2009	5	35	7.00	$2.0	$409	$1.2	$221	4	--	--	$0.9	$147	--
2010	5	35	7.00	$3.2	$642	$1.8	$277	3	--	--	--	--	--
2011	5	36	7.20	$3.9	$652	$2.1	$347	6	49	4.8	$1.1	$74	$9.89
2012	6	46	7.67	$3.4	$623	$1.8	$312	7	53	2.6	$1.1	$58	$10.03
Bristol Bay red king (BBR) [g]													
2008	76	452	5.95	$14.9	$170	$6.7	$82	11	245	12.6	$3.0	$301	$11.89
2009	70	443	6.33	$10.2	$130	$4.8	$68	10	199	16.1	$2.4	$139	$11.29
2010	65	422	6.48	$13.1	$194	$6.2	$100	11	212	20.1	$2.4	$194	$9.95
2011	62	413	6.66	$10.3	$150	$4.8	$82	12	104	6.7	$1.2	$73	$10.06
2012	64	427	6.67	$7.9	$100	$3.5	$53	10	100	6.5	$1.2	$66	$10.63
Eastern Bering Sea snow (BSS) [g]													
2008	74	447	6.03	$16.9	$210	$8.1	$107	12	712	30.5	$9.4	$540	$11.56
2009	77	536	6.96	$13.9	$159	$6.2	$78	10	600	58.4	$7.4	$339	$11.38
2010	68	444	6.53	$9.3	$124	$4.2	$59	9	534	50.9	$5.6	$373	$10.14
2011	68	453	6.66	$19.3	$272	$8.6	$126	12	555	45.7	$6.0	$345	$10.21
2012	72	502	6.97	$26.4	$366	$12.0	$172	11	1087	77.9	$11.8	$600	$10.20

Table 2: continued

	Crab Crew Employment and Earnings							Crab Processing Employment and Earnings					
		Crew positions [a]		Crew share [b]		Captain share [b]			Processing labor hours [c]		Processing labor payment		
Fishery: Year b	Obs	Total	Vessel mean	Total $million	Vessel median $1000	Total $million	Vessel median $1000	Obs	Total 1000 hrs.	Plant median 1000 hrs.	Total $1million	Plant median $1000	Median $/hour [d]
Eastern Bering Sea Tanner (BST)													
2008	26	146	5.62	$0.6	$15	$0.3	$8	8	27	2.9	$0.5	$49	$11.62
2009	14	102	7.29	$0.6	$30	$0.4	$17	7	29	4.3	$0.3	$36	$10.88
2010	4	--	--	--	--	--	--	5	6	0.7	$0.1	$7	$10.16
Saint Matthew Island blue king (SMB)													
2009	7	39	5.57	$0.2	$19	$0.1	$8	2	--	--	--	--	--
2010	11	63	5.73	$0.9	$72	$0.5	$43	5	19	0.4	$0.2	$4	$9.90
2011	17	112	6.56	$1.2	$57	$0.6	$31	6	17	0.8	$0.2	$8	$9.11
2012	17	106	6.24	$0.8	$43	$0.4	$22	6	21	0.8	$0.2	$7	$9.59

Source: NMFS AFSC BSAI Crab Economic Data. Crew positions from eLandings. Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2012-equivalent value. Information suppressed for confidentiality where indicated by "--".

[a] For catcher/processors, EDR reporting may be used to adjust eLandings crew size reporting in order to estimate the number of fishing crew positions.

[b] Crew and captain payments reflect amounts paid for labor during the crab fishery and include all post-season adjustments, bonuses, and deductions for shared expenses such as fuel, bait, and food and provisions; payments for IFQ royalties, labor outside of crab fishery, health/retirement or other benefits are excluded.

[c] Processing labor hours for catcher/processors are estimated by multiplying processing positions, number of days processing, and an assumed shift length of 12 hours per day.

[d] For all years, pay per hour statistics reflect only the shoreside and floating processing sectors.

[e] Totals reported for "All BSAI Fisheries" reflect information aggregated over all CR program (rationalized) crab fisheries, excluding fishery-level confidential information suppressed where indicated by "-- ". Values that are discontinuous with the rest of the series for a given variable due to data suppression are italicized. Averages are not reported at the aggregate level over all CR program fisheries.

[f] Due to confidentiality restrictions, Aleutian Islands Eastern and Western golden king crab fisheries are reported in aggregate. Where an entity reported labor information for both the Eastern and Western fisheries, counts of crew positions are averaged over both fisheries under the assumption that the same individuals are employed in both fisheries.

[g] Aggregate 2008 statistics for AIG, BBR, BSS, and BST are not directly comparable to results for later years; 2008 results exclude catcher/processor data to preserve confidentiality, while sector-level results for 2009 and later reflect combined catcher/processor data and catcher vessel/shoreside processor data. Due to change in CP EDR labor reporting, 2012 EDR data for AIG, BBR, and BSS fisheries are suppressed pending determination of aggregation protocol for these data.

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Abbreviations

Crab fisheries

AIG	Aleutian Islands golden king crab (East and West fisheries combined)
BBR	Bristol Bay red king crab
BSS	Bering Sea snow crab
BST	Bering Sea Tanner crab (East and West fisheries combined)
EAG	Eastern Aleutian Islands golden king crab
EBT	Eastern Bering Sea Tanner crab
NSR	Norton Sound red king crab
PIG	Pribilof Islands golden king crab
PIK	Pribilof Islands red and blue king crab
SMB	St. Matthew Island blue king crab
WAG	Western Aleutian Islands golden king crab
WAI	Western Aleutian Islands (Adak) red king crab
WBT	Western Bering Sea Tanner crab

Other

ACA	Adak Community Allocation
ADF&G	Alaska Department of Fish & Game
AFSC	NMFS Alaska Fisheries Science Center
AKR	NMFS Alaska Regional Office
BSAI	Bering Sea and Aleutian Islands
CDQ	Community Development Quota
CFEC	Alaska Commercial Fisheries Entry Commission
COAR	Commercial Operators Annual Report
CP	Catcher/Processor (vessel type and/or industry sector)
CPC	Catcher/Processor Crew (Quota Share sector)
CPO	Catcher/Processor Owner (Quota Share sector)
CPUE	Catch per unit effort
CR	Crab Rationalization
CV	Catcher vessel (vessel type and/or industry sector)
CVC	Catcher Vessel Crew (Quota Share sector)
CVCP	Catcher Vessel + Catcher/Processor (collectively denotes crab industry sectors with harvesting activity components)
CVO	Catcher Vessel Owner (Quota Share sector)
CVOA	Catcher Vessel Owner Class A (Individual Fishing Quota type)
CVOB	Catcher Vessel Owner Class B (Individual Fishing Quota type)
EDR	Economic Data Report
ESSRP	Economic and Social Sciences Research Program
FMP	Fishery Management Plan
GHL	Guideline Harvest Limit
IFQ	Individual Fishing Quota
IPQ	Individual Processing Quota
LLP	License Limitation Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NOAA	National Oceanic and Atmospheric Administration

NPFMC	North Pacific Fishery Management Council
PQS	Processing Quota Share
PSMFC	Pacific States Marine Fisheries Commission
QS	Quota Share (harvesting QS)
RAM	NMFS Alaska Regional Office, Restricted Access Management Program
RCR	Registered Crab Receiver
RPUE	Revenue per unit effort
SAFE	Stock Assessment and Fishery Evaluation
SFCP	Shoreside Processor, Stationary Floating Processor , and Catcher/Processor (collectively denotes crab industry sectors with processing activity components)
SFP	Shoreside Processor and Stationary Floating Processor (collectively denotes shore-based crab processing sectors)
SP	Shoreside Processor
SFP	Stationary Floating Processor
TAC	Total Allowable Catch

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BSAI Crab Fisheries Economic Status Report

1 Introduction

This report provides statistics on economic activity in commercial crab fisheries managed under the North Pacific Fishery Management Council's *Federal Fishery Management Plan For Bering Sea/Aleutian Islands King and Tanner Crabs* (BSAI Crab FMP), with substantial additional detail available for active fisheries managed under the Crab Rationalization Program. The report is produced as part of the annual *Stock Assessment and Fishery Evaluation For The King and Tanner Crab Fisheries Of The Bering Sea and Aleutian Islands Regions* (SAFE), provided as a reference source for information on status and trends in social and economic dimensions of fisheries managed under the FMP, to support evaluation of management and regulatory decision making.

As an indicator of the relative economic importance of Alaska crab fisheries to the state and U.S. economies, the 109.3 million pounds (49.6 thousand metric tons) of commercial catch of king and tanner crab in domestic waters off Alaska (including catch in the gulf of Alaska and other fisheries not managed under the FMP) represented approximately 1.1 percent of the total volume of U.S. commercial seafood landings, but accounted for 5.3 percent of ex-vessel value; with respect to Alaska alone, these fisheries account for 2.0 percent of catch volume and 15.9 percent of ex-vessel value. Across all fisheries managed under the FMP, total volume of commercial ex-vessel landings in 2012 was approximately 104 million pounds, with an estimated gross ex-vessel revenue value of $287 million. Total finished pounds reported by processors in 2012 across all FMP crab species and product forms was approximately 72.5 million pounds, with an estimated first wholesale value of $425 million (F.O.B Alaska). Of the 10 crab stocks managed under the FMP, seven were open to targeted fishing during 2012, prosecuted by an active fleet of approximately 100 catcher vessels and three catcher/processor vessels, and landed and processed at approximately 20 processing facilities throughout the region. In the rationalized fisheries that currently represent some 99 percent of the volume of these landings, there were an estimated 1037 fishing crew positions across 83 active vessels in 2012, with labor share earnings totaling approximately $38.5 million paid to deck crew members and $17.7 million to captains. Processing these landings for the first wholesale market is estimated to have accounted for some 1.26 million hours of line labor in 2012, generating $14.2 million in wages.

The Council has identified maximizing the social and economic benefits to the nation over time as one of seven management objectives in the FMP, which include, but are not limited to *"profits, income, employment, benefits to consumers, and less tangible or less quantifiable social benefits such as the economic stability of coastal communities"* (NPFMC, 2011; pp. 28-29). The Council further stipulated that, in the selection of management measures, specific examination of socioeconomic metrics will include: the value of crab harvested (less deadloss), both during the season for which measures are considered, as well in the future based on value as reproductive as well as harvestable stock; subsistence harvests; and economic impacts on coastal communities, *"…accomplished by considering, to the extent that data allow, the impact of management alternatives on the size of the catch during the current and future seasons and their associated prices, harvesting costs, processing costs, employment, the distribution of benefits among members of the harvesting, processing and consumer communities, management costs, and other factors affecting the ability to maximize the economic and social benefits as defined in this section."*

The information presented in this report is provided as an annual summary of the economic status of the BSAI crab fisheries in terms of the magnitude and distribution of benefits produced by the fisheries, as broadly outlined in the FMP, in the context of the most recent period for which data are available and the flow of benefits as produced over time. The report is not intended to provide a dedicated analysis of any specific management measure, either prospectively or retrospectively, but is expected to facilitate greater access to social and economic indices of fishery performance and support preparation and use of such information in more targeted analyses. The report consolidates relevant information published in annual management reports by Alaska Department of Fish and Game and NOAA Fisheries Alaska Region, supplemented with additional analysis and information derived from primary data collected annually by the State of Alaska's Commercial Fisheries Entry Commission, NOAA Fisheries Alaska Fisheries Science Center, and Pacific States Marine Fisheries Commission.

Section 2 of this report presents descriptive statistics and discussion of social and economic status and trends in commercial fisheries encompassed under the following categories: i) economic output; ii) income and employment; iii) operating and production costs; iv) use and distribution of ownership in quota share allocations and other fishery capital assets; v) fishing and processing capacity and effort, and vi) international trade in crab commodities. Within each of these categories, current status is represented in terms of annual averages and totals for the most recent five to seven years of data available. In most cases the most recent period is the prior calendar year or crab fishery year. All monetary values are inflation-adjusted to 2012-equivalent U.S. dollar terms. See below for additional introductory notes regarding data sources and reporting conventions used in this document.

Section 3 of the report provides results of a selected set of economic performance metrics calculated for Individual Fishing Quota (IFQ) crab fisheries as part of an initiative led by NOAA Fisheries Office of Science and Technology (OST) to coordinate monitoring and reporting of economic performance of rationalized fisheries across all regions and catch share programs (additional information can be found at http://www.st.nmfs.noaa.gov/economics/fisheries/commercial/catch-share-program/). Values calculated for IFQ crab fisheries are reported using OST protocols for catch share performance metrics depicting status and trends in program fisheries with respect to catch and landings, effort, economic value, and cost recovery. As discussed further below, coordinated monitoring and reporting of performance metrics under OST protocols is a recent effort under active development. Much of this information overlaps the analysis reported in Section 2, but is limited to a defined set of primary performance indicators for the eight CR program fisheries and is reported on the basis of crab fishery year rather than calendar year reporting as in much of the rest of the report.

Section 4 documents methods and results of econometric analysis of Alaska and international wholesale trade prices for king and snow crab, and application to forecasting and estimation of recent and near-term prices and revenues in Alaska crab fishing and processing sectors. Appendices provide information regarding administration of the BSAI Crab Economic Data Report program, and a summary of Alaska Fisheries Science Center's ongoing economic and social science research related to Alaska crab fisheries, management, markets, and related communities.

Fishery overview

Ten crab stocks are currently managed under the BSAI crab FMP: four red king crab (*Paralithodes camtschaticus*) stocks: Bristol Bay, Pribilof Islands, Norton Sound, and Adak (Western Aleutians); two blue king crab (*Paralithodes platypus)* stocks: Pribilof District and St. Matthew Island; two golden (or brown) king crab (*Lithodes aequispinus)* stocks: Aleutian Island and Pribilof Islands; Bering Sea Tanner

crab (*Chionoecetes bairdi)*, and Bering Sea snow crab (*Chionoecetes opilio)*. These ten crab stocks are targeted in eleven fisheries, managed by NMFS and the State of Alaska (SOA)as distinct units: Bristol Bay red king crab, Bering Sea snow crab, Eastern Aleutian Islands golden king crab, Western Aleutian Islands golden king crab, Norton Sound red king crab, Pribilof Islands golden king crab, St. Matthew Island blue king crab, Adak red king crab, separate fisheries for the Eastern- and Western- components of the Bering Sea Tanner stock, and a single combined fishery for Pribilof Islands red and blue king crab Eastern.

Management of these stocks is shared between NMFS and SOA under terms set forth in the FMP, which defines management measures within three categories:

1. Those that are fixed in the FMP and require FMP amendment to change;
2. Those that are framework-type measures that the state can change following criteria set out in the FMP; and
3. Those measures that are neither rigidly specified nor frameworked in the FMP.

Under the shared state and federal management structure specified in the FMP, decisions regarding management of crab stocks that are reserved to the Council and NMFS under the FMP Annual OFL and ACL status determinations are made by NMFS with Council input subject to federal requirements under the Magnuson-Stevens Reauthorization Act; as the findings of scientific assessments, stock status determinations and not in themselves considered to be management decisions.

Amendments to the FMP itself (Category 1 measures) pertain to changes in the federal regulatory framework under which the crab fisheries are managed, and are thus reserved to the Council and NMFS. Such changes typically involve measures of sufficient scope that they require federal rulemaking and call for preparation of dedicated socioeconomic analyses of decision alternatives, typically in the form of a combined Environmental Impact Statement or Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Analysis (EIS/- or EA/RIR/IRFA; e.g. NMFS, 2004). Category 2 and 3 measures are deferred to the State subject to terms of the FMP. Annual OFL and ACL stock status determinations are approved by the Council and NMFS Alaska Regional Office under the FMP in conformance with the Magnuson Stevens Act. As the findings of scientific assessments, status determinations and not in themselves considered to be management decisions. Although these determinations set the upper bound on total catch of FMP crab stocks , including both directed fishing and bycatch in other fisheries, decisions with respect to annual TAC/GHL levels for directed fishing are designated Category 2 measures deferred in the FMP to the state. TACs are set for crab fisheries managed under the Crab Rationalization Program, described in further detail below, while GHLs are set by the state for the Pribilof Islands golden king crab and Norton Sound red king crab.

To date, there has been no stock survey for Adak red king crab and therefore no basis for stock status determinations, and the fishery has been closed since 2003/2004. After closure for ten years while under a rebuilding plan beginning in 1999, the Saint Matthew Island blue king crab stock was declared rebuilt in 2009 and the fishery has been open since 2009/10. The Pribilof Islands blue king crab stock was declared overfished in 2002 and the combined red and blue king crab fishery has been closed to directed fishing to date. The Council took final action in June, 2012 recommending a preferred option for a rebuilding plan that would limit bycatch of the stock in the directed Pacific cod pot fishery, and analysis was being prepared for Secretarial review as of October 2012 (NPFMC, 2012). After being opened to targeted fishing in 2005/06, the Western and Eastern Bering Sea Tanner crab fisheries were designated overfished and closed to targeted fishing, beginning 2008/09 and 2009/10, respectively. As

detailed in the 2012 SAFE summary chapter and Bering Sea Tanner crab assessment chapter and appendices, the CPT has analyzed, and the Council subsequently approved, a revised baseline period for determination of the current recruitment potential of the stock, resulting in a determination that the stock had not been in an overfished condition in 2010 or subsequently. Despite the EBT stock status determination for 2012/13 as not overfished, the SOA did not open the fishery for 2012/13.

BSAI Crab Rationalization Program

In March 2005, NMFS issued a final rule to implement the Crab Rationalization (CR) Program as Amendments 18 and 19 to the BSAI Crab FMP. The CR Program went into effect with the 2005/2006 crab season that began in August 2005, which affects the following fisheries: Bristol Bay red king crab (BBR), Bering Sea snow crab (BSS), Eastern Bering Sea Tanner crab (EBT), Western Bering Sea Tanner crab (WBT), Pribilof blue and red king crab (PIK), St. Matthew Island blue king crab (SMB), Western Aleutian Islands golden king crab (WAG), Eastern Aleutian Islands golden king crab (EAG), and Western Aleutian Islands (Adak) red king crab (WAI). Two fisheries managed under the BSAI crab FMP, Norton Sound red king crab (NSR) and Pribilof Islands golden king crab (PIG), are excluded from the CR Program.

The CR Program allocates BSAI crab resources to qualifying harvesters, vessel crew members, processors, and Western Alaska coastal communities. Under terms of FMP Amendments 18 and 19 and subsequent amendments, harvest and processing privileges in the CRP fisheries are granted as long-term percentage shares, designated as harvest quota share (QS) and processor quota share (PQS). Subject to annual application requirements, annual allocations proportional to QS and PQS percentages are issued to participating share holders as Individual Fishing Quota (IFQ) and Individual Processing Quota (IPQ) permits, granting pound-denominated quantities of catch and processing shares of the annual Total Allowable Catch (TAC). The harvest component of the CR fisheries is divided between the QS/IFQ component, representing 90 percent of the annual TAC, and the remaining ten percent allocated as Community Development Quota (CDQ) or, for Western Aleutian Islands golden king crab fishery, Adak Community Allocation (ACA) quota. Under the three-pie allocation system that is unique to the CRP, a portion of the harvest shares issued as IFQ are subject to a share matching requirement, wherein subject IFQ must be sold to qualified crab buyers holding shares of IPQ, with additional delivery requirements designating a portion of share-matched IFQ for delivery to specified regions within the BSAI. Specifically, IFQ allocations issued to catcher vessel owners (CVO-IFQ) are issued as 90 percent Class A IFQ, subject to regional delivery requirements and share-matching, and the remaining 10% designated Class B IFQ exempt from share matching and regional delivery requirements. All other QS/IFQ pools, including those issued to catcher/processor owners, catcher/processor crew members, and catcher vessel crew members, as well as CDQ and ACA allocations, are exempt from regional delivery and share matching requirements.
In this report the terms “BSAI crab” and “FMP crab” are alternately used to denote the collective commercial crab fisheries associated with the ten crab stocks currently managed under the BSAI crab FMP, and “CR crab” to denote those fisheries included in the CR program, inclusive of all QS/PQS, CDQ, and ACA allocations; and the term “IFQ fisheries” to denote specifically the QS/IFQ and PQS/IPQ allocation fisheries within the program. All other crab stocks in waters off Alaska are exclusively managed by the State and are outside the scope of this report.

This overview outlines the key details regarding the structure of BSAI crab management and the CR program as referenced in this report. For detailed information regarding the regulatory structure of BSAI crab fisheries, readers are referred to the FMP, and to NMFS Alaska Region’s Annual Bering Sea and Aleutian Islands Crab Rationalization Program Report, which includes information regarding all recent

management changes, emergency rules issued, and other significant events in program administration during the previous fishery year, as well as an appendix providing a comprehensive overview of all elements of the CR Program as initially implemented and all subsequent revisions and FMP amendments (available on AKR's CR Program webpage; website address URL's and links to other useful references regarding the CR Program are provided below). Several elements of annual CR program administration of importance to economic status of the fisheries are provided in the annual CR Report, including QS/PQS permanent transfer and IFQ/IPQ annual allocation transfer activity, harvest cooperative formation and IFQ assignment by fishery, initiation and outcomes of arbitration proceedings between harvesters and processors, safety and regulatory compliance by program participants, loan issuance under the NMFS Fisheries Finance Program, and CRP cost recovery fee assessment and collection.

- Additional information on BSAI crab fisheries is available from the Alaska Department of Fish & Game (ADF&G); NOAA Fisheries (NMFS), Alaska Region (AKR); and the North Pacific Fishery Management Council (NPFMC). Readers seeking more extensive discussion of fishery history and management may find the following resources particularly useful:
- NOAA Fisheries Alaska Region
    - BSAI Crab Fisheries: http://www.fakr.noaa.gov/sustainablefisheries/crab/
    - BSAI Crab Rationalization (includes history of relevant amendments to the FMP): http://www.fakr.noaa.gov/sustainablefisheries/crab/crfaq.htm#CRreports
- NPFMC
    - BSAI Crab FMP: http://www.fakr.noaa.gov/npfmc/fishery-management-plans/crab.html
    - Bering Sea and Aleutian Islands Crab Rationalization Program: http://www.fakr.noaa.gov/npfmc/catch-shares-allocation/bsai-crab-rationalization-program.html
- ADF&G Shellfish Management
    - Westward Region, Bering Sea & Aleutian Islands Area Shellfish: http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaaleutianislands.shellfish
    - Arctic-Yukon-Kuskokwim Region, Norton Sound and Kotzebue Shellfish (for information on the Norton Sound red king crab fishery): http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareanortonsound.shellfish

Data sources

The current report summarizes information available to-date, largely comprising data reported through 2013 for the 2012 calendar year and 2011/2012 or 2012/2013 crab season. All data sources are subject to revision as data errors at the observation level are identified and corrected. Data for the most recent period available for all sources, but particularly from BSAI Crab Economic Data Report data, is presented on a preliminary basis and may change significantly in the next annual release of the report, or in an amended version of the current report.

This document is the primary channel for publication of aggregate data from the BSAI Crab EDR program administered by NMFS Alaska Science Fisheries Science Center (AFSC), Economic and Social Sciences Research Program (ESSRP). The EDR program is a mandatory census involving reporting of detailed operational and financial information by owners and leaseholders of vessels and processing plants participating in CR program fisheries. The EDR program was designed by the Council as a component of rationalization to improve its ability to monitor and assess achievement of social and economic

objectives of management set forth in the FMP. Broadly speaking, the objectives of this reporting requirement are to monitor the economic performance of the rationalization program in terms of changes in the efficiency and profitability of the fisheries, and economic stability for harvesters, processors, and coastal communities, as a result of the rationalization of the fisheries and in response to ongoing management decisions. The EDR reporting requirement was implemented in 2005, with baseline data submission required retroactively for 1998, 2001, and 2004, and subsequently, on an annual basis, for calendar year crab fishing and processing activities for 2005 to present. Revised EDR reporting requirements implemented under Amendment 42 (78 FR 36122, June 17, 2013) to the FMP went into effect during 2013 for 2012 and subsequent calendar year data.

The current Economic Status Report focuses on reporting summary statistics for reported values across EDR data elements identified as sufficiently accurate for public reporting. Several key elements in the EDR data collection prior to 2012 were limited by data quality have not been used in analysis of the CR program (AFSC, 2011) and have been withheld from the current report. These include quantity and cost of fuel used in the fishery, prices and costs for leasing of Individual Fishing Quota (IFQ), and spending for factor inputs by individual location. Given the importance of these elements in examining changes in profitability and distribution of income generated by and within the fishery, these data quality issues have limited the analysis of several key performance metrics for the fishery. Revised data collection protocols implemented for 2012 and subsequent reporting years have corrected errors associated with quantity and cost of fuel and prices and costs for leasing of crab fishing quota, and data reported for 2012 forward are presented in the current report; data reported previous to 2012 continue to be withheld due to data quality limitations. Several data elements were eliminated under revised EDR protocols, most notably all operating and capital cost elements for the crab fishing vessel and processing sectors, with the exception of fishing crew wages, processing labor wages, aggregate salary expenses, lease expenses for fishing quota (IFQ and CDQ/ACA quota) and processing quota (IPQ), vessel expenses for fuel, bait, and food and provisions, and payments for custom processing of crab purchased but not processed by the buyer submitting the EDR.

Varying degrees of coverage error apply to EDR data collected retroactively in 2005 for calendar years 1998, 2001, and 2004, as well as for certain processing-sector reporting elements in all years of the data collection. The historic (pre-2005) reporting requirement was tied to issuance of fishing and processing quota in the rationalized fishery. As such, the historic data may exclude operations that participated in the crab fisheries in 1998, 2001, and/or 2004 but did not anticipate receiving quota in the rationalized fishery. Additionally, because purchasers of CR crab that do not process any crab in their own facility are exempt from EDR reporting requirements, the data collection does not represent a full census of activity, revenue, and costs in the processing sector. Statistics on EDR coverage of harvesting and processing sector activity in comparison to other administrative data collections are presented in the Appendix.

A number of other sources in addition to the EDR database have been utilized to compile the statistics presented in this report. ADF&G fish tickets document commercial harvest from Alaska commercial fishery resources, including all BSAI crab fisheries. Since implementation of the crab rationalization program in 2005/06, NMFS Alaska Region, Restricted Access Management (RAM) division has maintained accounting on landings, quota usage, and quota disposition in the IFQ crab fisheries. The ADF&G Commercial Operator's Annual Report (COAR) provides data on statewide crab production differentiated by crab species, product, and process type; and is additionally used by the Alaska Commercial Fisheries Entry Commission (CFEC) to estimate crab ex-vessel pricing. Regular reporting on BSAI crab fisheries cited in this document include the *Bering Sea and Aleutian Islands Crab*

Rationalization Program Report, published annually by NMFS Alaska Region, RAM Division; and area management reports published by ADF&G.[5] The Program Report provides information on the annual management of the CR program fisheries, and particularly the IFQ fishery component of the program. ADF&G fishery management reports provide information on fishery history, management, and stock status, in addition to detailed information on fishing activity occurring in the most recent fishing season. Citations for these and other sources used in compiling this report are provided in figure and table footnotes and in the References section.

Data conventions

Under the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (P.L. 109-479), fishery information required to be submitted under Fishery Management Plans, including landings data, is confidential. NOAA Administrative Order (NAO) 216-100 is the principal guidance for NOAA Fisheries employees on protocols for handling confidential data. To assure confidentiality, data must be structured or aggregated so that the identity of the submitter cannot be determined from the present release of the data or in combination with other releases. "Submitter" is applied in context for the specific data presented. Data provided by the State of Alaska are treated consistent with the Memorandum of Understanding between NMFS and the State of Alaska regarding data sharing. Due to the sensitive nature of financial information reported in this document, confidentiality protocols have been interpreted conservatively and may result in greater suppression of statistical information representing contributions from low numbers of reporting units.

Data cited in this report have been aggregated across individual reporting entities by year and management unit so as to satisfy confidentiality requirements, while maximizing detail and comparability of statistics both within and among tables and figures. All price, revenue, and other monetary results are inflation-adjusted to 2012 base-year equivalent value using the U.S. Bureau of Labor Statistics Producer Price Index for unprocessed and packaged fish; index values from 1991 to 2012 are provided in Table 62 of the Appendix.

Some notable discontinuities and other limitations in source data exist, which limit comparability of statistics between tables or in time series within some tables. In particular, discontinuation or revision of several capital and operating expenditure data elements are reflected in the currently report, with data series for the affected data elements terminating at 2011 or beginning at 2012. To replace data previously provided by EDR reporting of days active in crab fisheries in the EDR (days fishing, days steaming and offloading, and days processing; discontinued for 2012 and subsequent years), data collected by Alaska Department of Fish and Game is incorporated in the current report. However, as the replacement data set (Confidential Interview Form (CIF) data) is only available beginning 2008, all statistics presented on a daily pro-rata basis in the report use CIF data where available, and EDR data otherwise. Table 23 and Figure 14 displays both EDR and CIF data series in parallel to indicate the degree of inconsistency. The calendar-year basis by which most statistics in this report are presented is

[5] With the exception of Norton Sound red king crab, all fisheries included in the BSAI crab FMP are managed as part of the ADF&G Westward Region, Bering Sea/Aleutian Islands Management Area, with annual reporting on these fisheries available in the *Annual Management Report for the Commercial and Subsistence Shellfish Fisheries of the Aleutian Islands, Bering Sea and the Westward Region's Shellfish Observer Program* (http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaaleutianislands.shellfish#/management*)*. Norton Sound red king crab is managed as part of the Norton Sound and Kotzebue Management Area within the Artic-Yukon-Kuskokwim Region; reporting is provided in *Annual Management Report Norton Sound, Port Clarence, and Kotzebue* (http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareanortonsound.shellfish)/

incongruent with the July-to-June management season of BSAI crab fisheries, resulting in some statistics being presented on fishery-year basis where disaggregation to the calendar-year is infeasible with available data. Declining participation in CR program fisheries following rationalization has reduced the number of reporting entities in some strata below minimum thresholds for nondisclosure, necessitating aggregation across strata in order to maximize use and dissemination of available data. EDR data for the Eastern and Western Aleutian Islands golden king crab fisheries are reported together in aggregate, even though the fisheries are prosecuted by partially distinct fleets and managed as distinct fisheries. Users should also note the discontinuity in presentation of EDR statistics by industry sector between 2009 and earlier years: due to low participation in the catcher/processor sector, EDR data from 2009 forward are presented with aggregations over the catcher/processor and catcher vessel sectors for statistics related to harvesting activity; and over the catcher/processor, shoreside processor, and floating processor sectors for statistics related to processing activity. Users should also note that the validation process for EDR data and finalization of the dataset may take several months following the EDR submission deadline, and statistical values for the most recent period published in the report may be subject to revision in the next annual edition.

Users of this report are strongly encouraged to consult table and figure footnotes, which provide citations of data sources, interpretive guidance, and discussion of data limitations and qualifications in addition to those already noted above and/or in discussion text accompanying figures and tables. Figures for selected results are accompanied by cross-references to the relevant tabular data; more extensive footnotes are provided with tabular data in order to conserve space. Users should also note the abbreviation and notation conventions used in tabular and graphical presentations of data in this report:

<u>Abbreviations and notations used in tables and figures</u>

--	Data suppressed to prevent disclosure of confidential information
n/a	Not applicable
n/d	No data available (data not collected, no observations in reported data, or available data are insufficient for public reporting)
2005 or 05	Calendar year, or FMP crab fishing season that occurred wholly within calendar year
2005/06 or 05/06	FMP crab fishing year
lbs.	Pounds
mt or *t*	Metric tons
obs or observations	Number of observations with value > 0 for measure of interest
sd	Standard deviation
$	US dollars; inflation-adjusted to 2012-equivalent value
☐(blank)	Statistic not calculated; in some tables, certain statistics (e.g. mean or median) are calculated only for a subset of categories or strata, such that columns or rows in a portion of the table are left blank.

2 Economic Status and Trends in BSAI Crab Fisheries

The following section presents information on the economic status of BSAI crab commercial fisheries in terms of economic output, income, and employment; operating and production costs; use and distribution of ownership in quota share allocations and other fishery capital assets; fishing and processing capacity and effort; and international trade in crab commodities. Data are summarized as aggregate totals and/or averages calculated over relevant economic units, primarily at the level of harvesting and processing sectors within individual crab fisheries, with additional levels of stratification as appropriate, and/or aggregated over some or all crab fisheries. The presentation is largely limited to these descriptive statistics, with measures of variability and/or uncertainty for selected variables where supported by available data. Depending on the data source, results are reported by calendar year (denoted as a single year; for example, 2012), or crab fishery year (spanning July-June and denoted, for example, as 2011/12). The current report summarizes information available in primary databases to-date, largely comprising data reported through 2013 for the 2012 calendar year and 2012/2013 crab season. See Section 4 for model-based forecasts of 2013 calendar year and 2013/2014 production and revenue levels for BSS, BBR and AIG fisheries.

As many of the key data sources are reported on an annual basis, current status and trends are framed in the context of inter-annual variation, with a focus on the most recent five to seven years of the crab fishery, with longer time series presented where available and longer historical perspectives noted where relevant, particularly with regard to pre- and post-rationalization comparisons. To the extent that descriptive statistics indicate a sustained directional change in magnitude or distribution of economic benefits, discussion of potential trends and associated management and/or market changes is limited to qualitative description of observed changes over time. Statistical tests to assess significant differences in measured values of the descriptive statistics or attribute causality to management or market factors, or models to forecast changes in status of the fisheries in the future, are not employed in the presentation. However, further analytical and statistical treatment of these and other data in applied social and economic research regarding aspects of fishery management are ongoing, and research under the sponsorship of AFSC is documented in an appendix to the report. In future iterations of this report, as data and methods are developed, the authors intend to incorporate improved analytical methods to enable greater synthesis of recent changes in socioeconomic conditions in the fishery and forecasting to anticipate potential changes in the near- to mid-term future.

Economic Output

Annual TAC/GHL, Landings, Deadloss, and Finished Product Volume

Annual TAC/GHL levels since 2005/06 are reported by crab fishery in Table 3 and summarized graphically in Figure 2. Recent variation in TACs issued in BBR and BSS fisheries is consistent with year-to-year volatility in the physical productivity of BSAI crab stocks over the longer term, but in both cases the 2011/2012 TAC represented an extreme over the recent (post-rationalization) period, both in terms of the TAC-level itself as well as, in the case of BBR, the year-on-year proportional change. The allowable catch in BSS has varied substantially over the 2005/06 to 2012/13 period, with interannual changes as great as 72 percent, increasing by nearly 64 percent to the recent peak of 88.9 million pounds declared for the 2011/12 crab season, and declining 66.35 million pounds for the 2012/2013 season (a 25% reduction from 2011/2012). BBR TACs have varied within a narrower range proportionately, but

declined in 2011/12 by the greatest margin since 2005, reduced by 42 percent from the previous year to 7.83 million pounds; the BBR TAC for 2012/13 increased only slightly to 7.85 million pounds Four fisheries open since the 2005/06 season, EAG, WAG, NST, and PIG, have all seen stable TAC levels over the period, but closure of the Bering Sea Tanner crab (BST) fishery and reopening of the St. Matthew Island blue king crab fishery beginning in 2009/10 have been significant changes in the economic status of the crab fishery overall.

Table 6 provides statistics for deadloss landings by fishery, including the number of vessels with deadloss landings, total volume of deadloss landings and as proportion of overall landed ex-vessel volume, and the average deadloss per vessel, with all statistics stratified by type of quota share permit used. Deadloss rates over the 2006-2012 period vary by fishery and are reported for most participating vessels. Rates are lowest in the BBR and BSS fisheries, ranging from 0.5-1.5% of landings, and In both BSS and BBR fisheries, Class B and CDQ landings account for between 14 percent and 27 percent of total CV deadloss landings, with crew share quota accounting for between 0.3 percent to 3.9 percent of deadloss landings over the same period. No distinct pattern with respect to type of quota used on deadloss landings is discernible, and no results are available indicating relative compensation of quota share holders for harvest quota used for deadloss landings.

Figure 3 summarizes 1998 to 2012 annual (calendar year) values for total landed live catch and gross ex-vessel revenue (detailed in Tables7 -11), and finished production volume and first wholesale value (Tables 12-14), respectively, for all crab fisheries managed under the BSAI crab FMP. Upper panels in the figure display production and revenue time series in separate vertical bar graphs for each fishery (note that the vertical scales vary by fishery). To enable clearer comparison of the relative contribution of individual fisheries over time (graphed separately for harvesting and processing sectors), the lower panels of the figure display values of revenue and volume, respectively, aggregated over all crab fisheries and color coded by fishery in proportional area of vertical bars. Figure 4 summarizes the corresponding time series of ex-vessel and first wholesale prices by crab fishery, represented as weighted average price per pound[6].

[6] A note on the term "price" as used in this report: a variety of price indices are presented herein that are derived from data on volume and revenue of sales of landed crab and/or finished crab product, collected and reported at different levels of aggregation. The typical representation of ex-vessel or first-wholesale prices in fishery management reports (e.g., NMFS, 2012) is fishery- or fleet-level average price, calculated as aggregate revenue divided by aggregate volume. Rather than representing the per-unit market "price" for a uniform commodity, this index is equivalent to the weighted arithmetic mean calculated over individual sale price observations, weighted by volume of individual sale. For example, ex-vessel price calculated as the quotient $\sum_i r_i / \sum_i v_i$, where $\sum_i r_i$ is the ex-vessel sale revenue and $\sum_i v_i$ is volume of sold landings, aggregated over all vessels *i…j*, is equivalent to the weighted arithmetic mean price calculated as $\bar{p} = \sum_i v_i (r_i / v_i) / \sum_j v_j$ where $(r_i / v_i) = p_i$, the individual price observation for the ith vessel. In relevant tables and figures in this report, the aggregate revenue (or cost) per volume ratio is referred to as weighted average price; this representation of average per-unit value places greater emphasis on large volume sales (or sellers), relative to smaller volume sales. This is of particular importance where factors that may affect an individual transaction price are correlated with the volume of the transaction and/or the frequency of similar transactions, such as type of harvest quota used in sales of ex-vessel landings, or wholesale product form of individual processor sales. It is important to note that, with limited exceptions, observation level data used to prepare this report represent yearly aggregate sale volume and revenue reported by industry entities for different categories of goods, rather than transaction-level data representing sales of uniformly-defined commodities. For selected tables and figures displaying economic value per unit metrics (price, cost, wages, or other per-unit rates), medians and/or unweighted means and associated measures of dispersion are included where appropriate to represent the center and, in some cases, dispersion of observation-level data. In cases where data do not appear to conform to an approximately normal distribution, median value of observation-level price per-unit is reported rather than mean.

Across all fisheries managed under the BSAI Crab FMP, the total volume of ex-vessel landings during 2012 was 104 million pounds (47.2 thousand *t*), a 48 percent increase from the previous year. As of 2012, allowable catch quantities in all BSAI crab fisheries currently open to targeted fishing are fully exploited or nearly so (i.e., 98-100% of total allocation landed), and recent inter-annual variation in commercial landings largely reflects stock assessment results and catch limits rather than changes in fishing capacity or exploitation rate. Notably, however, 2012 represented the first season that landings in the Saint Matthew Island blue king (SMB) crab fishery approached 100% of the combined target allocation, from less than 50% in 2009 when the fishery re-opened. The increase in aggregate production during 2012 was driven largely by the 88.9 million pounds (40.3 thousand *t*) of Bering Sea snow crab (BSS) landed, a 63 percent increase in volume over the previous year. Norton Sound red king crab (NSR) landings increased by 28% to 500,000 pounds (0.23 thousand *t*) landed, and landings of 5.8 million pounds (2.63 thousand *t*) in Aleutian Islands golden king (AIG) and 7.8 million pounds (3.54 thousand *t*) in Bristol Bay red king (BBR) crab fisheries were changed only slightly from the previous year, with the latter remaining at approximately half the level of the previous 5-year average.

Similar to ex-vessel production, the proportional increase in processing sector output aggregated over all active crab fisheries was driven by the 56.9 million pounds (25.8 thousand *t*) of BSS fishery production, increased by 50 percent in volume over the previous year. Finished volume in the BBR fishery of 5.2 million pounds (2.4 *t*) was unchanged from 2011, where both years were near historical lows for the period since 1998. AIG and SMB fisheries produced 3.8 million pounds (1.72 thousand *t*) and 1.13 million pounds (0.59 thousand *t*) of finished volume, respectively, the latter decreasing by 15 percent from 2011 output.

Ex-vessel and First Wholesale Prices and Revenue Value of Production

Ex-vessel and first wholesale estimated prices in four of the five Alaska crab fisheries reversed direction in 2012 from the consecutive annual increases that occurred over the 2009-2011 period. BBR fishery average ex-vessel price dropped by 30 percent for 2012, to $7.27 per pound, reversing the 34 percent price increase from 2010- 2011, and the average 2012 first wholesale price reported by processors declined by 20 percent, to $15.09 per pound for 2012. Golden king crab prices in both sectors similarly offset 2011 increases, falling to $3.51 ex-vessel (-24%) and $8.37 first wholesale (-13%) per-pound averages. The SMB average first wholesale price of $12.45 fell by 12%, and the $3.77 average ex-vessel price fell 28% from 2011. The exception to the general result of falling prices for 2012, NSR crab sales continued a gradual four-year trend of increasing average ex-vessel price, reaching $5.48 per pound, 5.6% over the 2011 average[7].

The estimated gross revenue value of production in the 2012 BSS fishery increased from 2011 levels to $167 million ex-vessel (+21% over 2011), and $268 million first wholesale (+28%), compared to much larger proportional increases in physical output of 68 percent and 50 percent, respectively. With physical output of both sectors in BBR and AIG fisheries largely held constant, estimated gross revenues for BBR fell to $56.8 million ex-vessel (-30%) and $78.7 million first wholesale (-36%), and AIG estimated revenues fell to $20.5 million ex-vessel (-26%) and $31.6 million wholesale (-10%). Declines in both physical output and prices in the SMB fishery combined to reduce ex-vessel gross revenue to an estimated $5.97 million (-39%), and estimated first wholesale revenue fell to $14.1 million (-25%). The NSR fishery exhibited the opposite, with increases in both price and output combining to increase gross ex-vessel revenue to an estimated $2.72 million (+30%). The 20-35% proportional inter-annual

[7] Processing sector results for the Norton Sound red king crab fishery are not available.

variation in gross revenue from 2011-2012 for these fisheries is approximately consistent with the average degree of variation over the last 15 years.

As illustrated in both Figure 3 and Figure 4, the relative magnitude of volume, revenue, and price statistics between harvesting and processing sectors is generally consistent from year to year for the three largest CR fisheries (BBR, BSS, and AIG), particularly since rationalization in 2005. Under the terms of the arbitration provisions incorporated into the structure of the CR program, annual determination of a nonbinding price formula for Class A IFQ each CR fishery is made by an independent third-party Formula Arbitrator. Although the formula is nonbinding, it does act as a starting point for annual price negotiations between crab harvesters and processors, providing a consistent reference for evaluating price offers relative to the historical average split between ex-vessel and first wholesale price levels. Since the 2005/06 crab year, the ratio of weighted average ex-vessel to first wholesale price in the AIG fisheries has varied between a low in 2007 of 41.5% to a high in 2012 of 55.6%, between the 2006 low of 51.4% and a high of 56.8 in 2010 in the BBR fishery, and from a low of 39.3% in the 2010 BSS fishery to a high of 46.4 in 2011 and 2012.

Figure 5 illustrates comparison of prices for ex-vessel landings sold using quota share permits grouped into Class A IFQ, CDQ and Class B IFQ, and Class C (crew) IFQ (see Table 10 for source data and additional detail). In contrast to the weighted average price statistics shown in Figure 4 and other tables, price statistics illustrated in Figure 5 show the mean price calculated over the vessel-level price observations for a given share type, with a measure of between-vessel price variation shown (error bars indicate ± one standard deviation). While the by-share type price distributions substantially overlap (display of some results is limited due to data confidentiality) general consistency over time and CR fisheries in relative ordering of share-type in average prices provides some evidence that ex-vessel prices received for Class A IFQ landings, which are encumbered by the processor quota share matching requirement, are systematically lower than those produced from CDQ and Class B/Crew share ex-vessel sales[8].

Estimated ex-vessel price indices for CR program fisheries (weighted average and unweighted mean and standard deviation (sd)) are displayed in Table 11, differentiated by harvest cooperative membership status of landing vessels, and with the share of aggregate landings by cooperative and non-cooperative vessels. There is little evidence of a significant price differential between cooperative and non-cooperative landings. Cooperative membership was over 80 percent in both the BBR and BSS fisheries as of 2005, and universal in other CR fisheries; as of 2010, all IFQ has been consolidated within harvesting cooperatives and all crab landings have been made by vessels harvesting exclusively cooperative-held IFQ (data show only through 2009).

Production volume, value, and price statistics for the processing sector summarized in Figures 3 and 4 are displayed by CR program fishery in Table 12. Similar statistics for aggregate statewide processed crab production by species is presented in Table 13, disaggregated by primary product type (whole crab, sections, and other) in Table 14. Reporting of disaggregated results is limited by confidentiality and data cannot be shown for all years, species, and product forms. However, frozen crab sections consistently predominate as the primary product form across all species. A notable exception is golden king crab, for which a relatively large proportion of product sales are in the form of whole crab, comprising more than 16 percent of total sales volume and 19 percent of revenue in 2012.

[8] The price differential is consistent directionally in BBR and BSS fisheries; the small number of observations available for BST and AIG fisheries limits any meaningful comparison.

Income and Employment

Consolidation in the crab-harvesting sector following rationalization in 2005/06 resulted in both a substantial reduction in the number of active vessels and longer seasons. Correspondingly, the number of crew positions was reduced and working conditions changed, resulting in longer periods of active work in the fisheries for remaining crab crews. Overall vessel participation across BSAI crab fisheries has largely stabilized since 2009/10 near the most recent total of 74 catcher vessels and three catcher-processors prosecuting the IFQ and CDQ fisheries, although numbers have continued to fluctuate significantly in the BBR and SMB fisheries.

A summary of selected indicators from the most recent employment and labor earnings data available for CR program fisheries are presented in Tables 15-22 and summarized in Figures 6 and 7. Two primary data sources are used to compute employment statistics for the harvesting sector. The eLandings catch accounting system collects trip-level information on the size of the crew onboard a vessel at each landing. This data provides the basis for estimating the number of crew positions across the fleet during a fishing season and for observing changes over time in the aggregate- and average per-vessel quantity of crew labor employed in crab fishing. For each CR fishery, EDR data report the value of fishing crew contract settlement payments (net labor payment after deductions for shared vessel operating costs) to vessel captains and fishing crews and the number of paid fishing crew members (excluding captains) at the fishery level for each vessel[9]. In addition, EDR reporting of commercial fishing crew license data captures information on the number of unique individuals working as crew on crab fishing vessels as deckhands, vessel captains, and other positions in a given year (see
Table 17 notes for details on crew license data and results). EDR labor payment data provides the basis for estimating aggregate labor earnings statistics, and the data reported on numbers of paid crew and counts of distinct crew licenses provides the basis for estimating the number of distinct labor participants in a given crab fishery, as well as the annual count of distinct crew participants over all crab fisheries.

The number of vessels operating in CR fisheries in 2012 increased from 77 to 83, and from 103 to 114 across all BSAI crab fisheries (Table 4). Based on the average (mean) number of crew onboard (as reported in eLandings catch accounting records for crab vessels), there were an estimated 1081 crew positions across all vessels in CR fisheries in 2012, compared to 1,014 in 2011 (Figure 6 and Table 16). With four additional vessels fishing in the 2012 BSS fishery as compared to 2011, and two additional vessels in the BBR fishery , 49 additional crew positions were added to the BSS fishery and 14 positions added in the BBR fishery for 2012. As indicated by the number of paid crew and captains reported in EDR data through 2011 (the last year for which this information was collected), there were approximately 1,020 captains and crew members participating in CR fisheries in 2011. The larger number of crew participants (relative to total crew positions) likely reflects variation in a given vessel's reported crew size on different landings and turnover in crew during the course of a given fishery. For all vessels that participated in one or more CR fisheries in 2011, 706 individual captains and crew members were identified by license or permit number, an increase from 623 reported for 2011[10] (Table 17). Of the 594 commercial crew license holders participating in CR crab fisheries during 2012, 196 (33%), and 32 of 112 (29%) CFEC gear operator permit holders, were identified as Alaska state residents.

[9] Prior to 2012, EDR data collection included number of individual crew members paid, reported by CR fishery; this data element was discontinued in revised EDR protocols implemented for 2012, and both Figure 6 and Table 16 show counts of distinct crew participants through 2011 only.

[10] Note that crew license and gear operator permit number reporting in EDR data was likely incomplete for 2005 and 2006, but is largely accurate for 2007 and subsequent years due to improvements in EDR administration.

Total labor payments[11] to crab vessel captains and crews totaled $17.6 million and $38.5 million during 2012, respectively, increased by slightly more than 10% over 2011 levels of $16- and $35 million (Figure 6 and Table 15). The aggregate increase over all CR fisheries was driven by increased ex-vessel revenue in the BSS fishery for 2012, where captain and crew labor earnings of $12 million and $26 million, respectively, were up 27% over 2011 levels of $8.7 and $19.2 million; all other program fisheries saw declines in labor earnings in 2012. Crew and captain payments in the golden king crab fisheries totaled $3.4 million and $1.8 million, respectively, declining by 11% and 16% from 2011 levels. Total captain and crew earnings in the 2012 BBR fishery declined by 33% to $3.5 and $7.85 million, respectively. Combined crew and captain payments in the 2012 SMB fishery totaled $1.2 million, declining 33% to $830,000 for crews, and by 35% to $380,000 for captains.

As shown in Figure 6 (right panel), average daily earnings for crew and captains in the AIG, BBR, BSS and SMB fisheries declined in 2012 from peak levels observed in all fisheries in 2011[12]. In all four CR fisheries prosecuted during 2012, labor earnings averaged on a daily basis over the number of days vessel spent actively at-sea declined from peak levels observed during 2011. In the BSS fishery, increased seasonal earnings for captains and crew during 2012 coincided with a substantially longer period spent at-sea, resulting in a net decrease in earnings on a daily basis. The number of days vessels were active in other CR fisheries prosecuted in 2012 declined slightly or, in the BBR fishery, remained approximately constant, but did not offset the reduced seasonal earnings in these fisheries, resulting in lower daily earnings in AIG, BBR, and SMB fisheries.

Tables 19-20 present data on crab processing labor employment and wages associated with the IFQ and CDQ fisheries. It is estimated that nearly 1.3 million hours of processing labor was expended on crab production in 2012, generating slightly more than $14.2 million in labor income, increased from $8.4 million in 2011. Most processing facilities that receive crab landings do not exclusively process crab, however, and it is likely that processing labor hours and wages reported and attributed to specific crab fisheries are influenced by production activity and working conditions in other fisheries. The trend in processing labor input as reported in the BSAI Crab Economic Data Report (EDR) indicates general consistency with catch and production volume fluctuations. However, similar to the changes in harvesting sector active vessel days in the respective, processing labor hours declined across all CR fisheries with the exception of BSS, where total estimated processing labor hours increased from 0.56 million hours in 2011 to 1.1 million hours in 2012. As shown in Figure 6, daily (per 12-hour shift) wage rates declined over the 2005-2010 period, but have increased slightly over the most recent two years.

The effects of rationalization on crew earnings and the relative distribution of economic benefits between quota share owners and active crews working in the crab fishery remain ongoing concerns for fishery managers. Identifying trends in labor earnings is complicated by the lay share system that is commonly the basis of crew compensation in commercial fisheries. Unlike typical labor market conditions, where prevailing wage rates are substantially stable from year-to-year, the value of crab crew pay settlements under the lay share system is highly influenced by the price and market value of landed crab as well as prices and costs of other factor inputs (e.g. fuel), both of which are exogenously

[11] In addition to direct labor earnings, income is derived by some crew members and many captains as lease royalties for crab IFQ quota shares. While this may become an increasingly important source of income as opportunities for investment in QS ownership are advanced, there is no evidence in data available to-date that the proportion of CR fishery quota share pools held by crab crew members has changed in recent years (see the section on QS holdings below for further detail).

[12] See Figure 14 and Table 23 and associated footnotes for details on data sources for vessel activity days used for daily pro-rata earnings calculations.

determined by larger external markets. It is therefore difficult to clearly associate the effect of management changes under rationalization and changing productivity of the fishery with any trend in the status of crew earnings. The volatility of both crab prices and catch levels over the period following rationalization contributes to highly variable annual results for both aggregate- and per-vessel average payments to crab crews and captains as described above.

Additional metrics providing alternative indicators of changes in crew labor and remuneration conditions over the period 1998 to 2011 are presented in Figure 7 (summarizing results in Tables 15 and 22). The figure illustrates changes over time in median vessel-level crew and captain labor earnings relative to three indices: median vessel-level value of payments to the captain and crew as a share of gross ex-vessel revenue, median "net share" received by captain and crew, and the "crab-equivalent" index of earnings for crab crews.

Net share percentages were reported annually by vessel owners in EDR data from 2005-2011 as the ratios used in the calculation of crew settlements, where "net" refers to the revenue residual after deductions for quota leases and operating expenses shared between vessel owners and crews under the terms of lay share contracts. Gross share values are calculated as the ratio of reported captain and crew payments to gross ex-vessel revenue reported by fishery. Limited data for both gross and net share values is available prior to 2005[13], but vessel owners reported an average 40% net share percentage, over all fisheries in which they participated, as the basis for crew settlement. by comparison, during the same period, crew settlement payments accounted for 35% of gross ex-vessel value averaged over all vessels and crab fisheries. Due to confidentiality limitations, only results for BBR and BSS fisheries can be show for the full 2005-2012 period. As illustrated in Figure 7, both net- and gross-share metrics have remained largely stable over the post-rationalization period; median net-share for captains has remained at 13-14%, and crews at 26-27% in both the BBR and BSS fisheries. Median gross-share percentages have declined somewhat over the period: in the BBR fishery, from 23% combined captain and crew in 2005 to 18% in 2010, increasing to 20% in 2012; 2005 data shown for the BSS fishery reflect the status of the fishery prior to rationalization, with gross share percentage to labor (combined) of 35%, declining to 22% in 2006, and remaining within the 21-23% range through 2012.

The crab-weight equivalent pay index presented in Table 15 and Figure 7 is derived by standardizing annual payments to crew relative to the average price received by the vessel for landed crab, resulting in a metric denominated in pounds of crab[14]. Statistics calculated using this index reflect the quantity of physical output of the fishery that is devoted to the compensation of crew labor (shown for crew only, excluding payment to captains). In principle, the index decomposes changes over time in the gross monetary payments to crew: for a given quantity of catch landed by a vessel, the value of the index will remain constant insofar as any percentage change in monetary payment to crew is equal to the

[13] Revenue net share percentages over all crab fisheries were collected in Crab EDR forms in for pre-rationalization years, and by individual fishery for calendar years 2005-2011, in addition to information regarding treatment of selected operating cost items in crew settlement calculations (i.e., deducted from gross revenue, directly charged to crew members, or not included in crew settlements). With the implementation of IFQ, treatment of quota lease expenses has become a key determinant of the revenue basis for crew settlements. Due to the variation in deductions from ex-vessel revenue for quota lease expenses and a variety of other operating costs over time and between vessel owners, the "net share" metric is not a reliable metric for comparison among vessels, or as an index of net operating profit, and it is not possible to derive an reliable estimate of net operating profit by comparison of net share and gross revenue share percentages. Data elements regarding crew share settlement terms have been discontinued in EDR reporting as of calendar year 2012.

[14] The index is calculated by dividing vessel-level crew payments in a given crab season by the average ex-vessel price received by the vessel; statistics shown are the median value of the index over all active vessels. See Abbott et al (2010) for further discussion of the index and analysis applied to effects of the CR program and IFQ leasing on crew remuneration.

percentage change in price (e.g., if both increase by 10%); inversely, if price remains constant but landings increase, the index value will remain unchanged if any proportional change in crew pay is equal to the proportional change in output. Therefore, a change in the value of the index indicates a change is the relative proportion of gains or losses in the net economic value of the fishery due to changes in price or physical production that are distributed to crew.

Due to confidentiality limitations, only results for BBR and BSS fisheries can be reported in in Table 15 for the full 1998-2012 period. The crab-equivalent index follows a pattern of change over the post-rationalization period that is roughly the inverse of that observed in ex-vessel prices (Figure 4), increasing by approximately 200% between the baseline period to 2008, during which time the red king crab price declined from $9.32 to $4.63, and snow crab price fell from $2.63 to $1.35. Since 2008, the index has remained between 0.09 and 0.1 million pounds (median per-vessel) in the BSS fishery, concurrent with a moderate increase in prices and flat production, and increasing to 0.163 million pounds for 2012, as ex-vessel price again declined while physical production increased. In contrast, the index for the BBR fishery has declined since 2008 from .03 million pounds to 0.14 million pounds in 2012, in contrast to the sharp increase in ex-vessel price to $10.47 for 2011, approximately on par with the previous peak in 2002. In comparison to the direct monetary value of crew earnings, which have varied substantially between 2005-2012, the pattern of change shown in crab prices and the crab-equivalent metric indicates that crew earnings have been relatively insulated from the effects of price-driven variation in ex-vessel earnings. In periods of rising prices, this reduces the distribution of price-driven increases in ex-vessel revenues to crew, but also limits the effect of price-driven declines in revenue during periods of falling prices. This finding provides limited insight regarding a general trend in the earning status of fishing crews. However, it does suggest that any change in fishery management intended increase prices received for Alaska crab products (through improved production processes or marketing, for example) may have a relatively small effect on crew earnings in absolute terms.

Operating, Production, and Capital Costs

Statistics reporting information available for crab vessel and processing plant operating and capital investment expenditures are presented in Table 24 through Table 30, and Figures 8-9 summarize these data. Total aggregated expenditure by fishery sector and per-vessel or plant median[15] expenditure are presented for cost data elements where data quality is sufficient to warrant dissemination (as discussed in the introductory description of data sources above (also see AFSC (2011)). Analysis of trends in operating and/or capital expenditures over time, or in relation to production or revenue, is inhibited by a variety of factors. In addition to data quality limitations for specific cost elements, discontinuities in data time series also limit use of the data. As with other information contained in this report, catcher-processor sector data in many cases cannot be reported at the sector level due to confidentiality requirements, and therefore aggregate harvesting sector (CV and CP) and processing sector (CP and shore-based) results are presented for fishing- and processing-specific expenditure items respectively. Due to changes in the EDR program implemented during 2013, data for many expenditure items is available only for 1998-2011; however, fuel cost and quota lease expense data is now collected and available for the harvesting sector beginning with 2012 calendar year operations.

Given the discontinuity of data series for different cost items, the presentation below attempts to provide a view of the data that represents the relative magnitude of expenditures over time and across

[15] Note that large standard deviation values displayed reflect the non-normal distribution of most cost variables, with high incidence of reported 0 values.

different categories of expenditures. This information in Figures 8 a-b (harvesting sector expenditures) and 9 (processing sector) illustrates the scale of expenditure items relative to those items for which data is available as a continuous time series (i.e., bait, food and provisions, and labor expenditures). Where cost and expenditure information discussed below includes proportional ranking of costs, these values are relative to cost elements for which contemporaneous data are available, and are not a comprehensive ranking of all significant, or even largest, costs for the individual sectors.

For the 2005-2011 period, total annual expenditures over reported non-labor production costs for CR fisheries ranged from $20.4 million to $37.7 million per year for the harvest (CV and CP) sector and $31 million to $48 million per year in the shore-based processing sector, with peak expenditures occurring during 2007-2008 in both cases. Harvesting sector expenditures during 2011 were $27 million over all reported non-labor items, and $30.3 million in the shoreside processing sector. Total capital investment in the harvesting sector has ranged from approximately $2.5 - 6.6 million, averaging between $31- to $119 thousand per vessel; expenditure in the shore plant sector has ranged between $6.6- and $19.1 million per year, averaging between $0.56-1.3 million per plant. Total expenditures on repair and maintenance in the harvesting sector have ranged between $5.2-$7.4 million, averaging between $36- to $ 88 thousand per vessel; shore plant sector aggregate R&M costs have ranged from $3.0-$7.7 million, averaging $0.34-0.53 thousand per plant. For 14 of the 15 non-labor harvest and/or processing sector cost items listed in Table 25 for which data is available from the pre-rationalization baseline period, annual expenditures averaged over 1998, 2001, and 2004 were higher than any year subsequent to rationalization. The exception was expenditures for fisheries taxes, which increased from a total of $3.6 million on average during 1998-2004 to $16.5 million in 2011. As noted previously, total crew and captain labor payments increased to $56 million over all CR fisheries, reaching the highest level since 2005, and approaching the $67 million average of the pre-rationalization baseline.

As noted above, fuel quantity and cost data prior to 2012 cannot be included with cost data presented in the report. Increasing fuel costs have been an important factor in changing costs of production in BSAI fisheries, however. Table 29 presents aggregate total and median fuel expenditures by CR fishery reported for 2012, including quantity purchased and average fuel price. Consistent with the number of vessel days at sea, total fuel quantity and cost in the BSS fishery was much greater than in other fisheries, totaling 4.2 million gallons and $16.6 million. Median fuel quantity and cost, at 70 thousand gallons and $230 thousand, was highest in the Aleutian Islands golden king crab fishery, consistent with the merged reporting of Eastern and Western fisheries data in this report and the small number of vessels in the fishery. Table 31 presents results from a monthly survey of marine fuel prices in Adak, Dutch Harbor, Kodiak, and Seattle, showing that fuel prices were substantially higher in all four locations during 2011 than in the previous five years, with the exception of the period of elevated prices during late 2008.

Quota Holdings, Leasing Activity, and Quota Share Sale Transfers

The following section provides information regarding transfers of harvesting Quota Share (QS) and Processing Quota Share (PQS) allocation holdings among eligible shareholder entities under the CR program, lease transfer of Individual Fishing Quota (IFQ) and Individual Processing Quota (IPQ) annual permits, and changes in the distribution of use of annual harvesting and processing quota permits and ownership/holding of QS and PQS shares. and preliminary results from the BSAI Crab Rationalization Economic Data Report (EDR) program collection of crab harvest quota allocation lease data associated

with 2012 calendar year Bering Sea snow crab (BSS), Bristol Bay red king crab (BBR), and Saint Matthew Island blue king crab fisheries.

QS/PQS Holding

Quota share and PQS were initially issued to qualifying U.S. individuals and companies or other non-individual business entities based on historical participation in the CR fisheries. Over time, attrition of initial QS/PQS recipients and consolidation of quota holdings within a smaller pool of holders is anticipated as initial recipients exit the fishery and divest their financial interests in quota share and associated assets. Changes in the demographics of the quotaholder population over time, concentration of quota shares, and/or other distributional outcomes, are important dimensions of the economic status of the fishery. In addition to monitoring attrition of initial recipients generally, of particular interest are the role of Western Alaska Community Development Quota (CDQ) groups in acquiring control of IFQ and IPQ program quota shares, and the degree to which individuals active in the fishery as on-board crew successfully acquire quota shares, either as new entrants, or by adding to existing holdings. Information on various dimensions of these processes is presented in Tables 38 to 44 of the report, and summarized in Figure 12 below.

CR program rules limit the consolidation of vessel owner QS to a maximum share proportion of the quota share pool held by any single entity to 1% in BBR, BSS, EBT, and WBT fisheries, 2% in PIK and SMB, and 20% in EAG, WAG, and WAI fisheries), with "grandfathering" exceptions for initial issuees, and higher caps for crew share QS, CDQ groups, and non-individual PQS holders (Table 37; use caps and related regulations are found at 50 CFR Part 680, at §680.42). Under the rule, use of IFQ to catch and land crab by any one entity is subject to the similar caps, but an exemption for members of harvest cooperatives eliminates limitations on the consolidation of catch on vessels harvesting exclusively IFQ held by a cooperative.

The period of active transition of quota share holdings that occurred in the initial years of the program has subsided, and with few exceptions, the overall distribution of QS ownership has been largely stable in the CR program over the most recent two seasons. Across all share pools and fisheries for both QS and PQS holdings, minimal-to-zero net change occurred between 2011/12 and 2012/13 in the size of the share holder population, or in the degree of concentration of share holdings within the population. Relative to initial issuance, share holding distribution has changed most significantly in BBR and BSS fisheries, in which the total number of unique QS share holders has consolidated from an initial pool of 433 (BBR) and 396 (BSS) to the current pool of 395 and 385 individuals, respectively (aggregating Owner and Crew QS holders shown in Table 39). Despite a modest increase since the initial allocation in 2005 in the number entities holding CVO QS in the BBR and BSS fisheries, from 252 to 258, and 241 to 261, respectively, both median and maximum proportional share holding have increased, but only to a small degree, with the median holding increasing from .52% to .56% in BBR and .64% to .69% in BSS; maximum share holdings in BBR has increased from 1.23% to 2%, from 1.6% to 2% in BSS, and from 3.1% to 3.29% in SMB. As noted previously, 2% is the maximum permissible percentage share holding in BBR and BSS fisheries under the CR program rule regarding QS use caps. A notable exception to the relative stasis of QS pools in the program are the EAG and WAG fisheries, in which large proportional changes occurred as a result of the sale of a single entity that was the largest single recipient of QS in the initial

CR program allocation, resulting in a single entity holding 100% of CPO shares in the EAG fishery and a 33% increase in the number of CPO holders in the WAG fishery, by 1[16].

Across all fisheries, consolidation of crew share QS holdings during the first two years of the CR program produced a large initial decline in the number of individual QS holders (not accounting for active on-board participation of crew share holders), but not continued since the 2008/09 crab year, with 137 individual BBR crew share holders and 124 BSS crew share holders as of the start of the 2012/13 crab year (Table 38). With respect to individual CFEC-permitted crab vessel operators active on-board crab vessels[17], however, a gradual decline has continued in the numbers individuals holding CVC and CPC shares as well as in the percentages of the share pools held by them[18]. QS holders active as gear operators during the 2012/2013 BBR fishery declined to 64 from 71 during the previous season, and 94 in 2005, and by similar numbers in the SMB fishery. In the BSS fishery, a smaller incremental change occurred between 2011 and 2012, with one fewer individual active QS holder, but continued a consistent trend toward a smaller ownership role in QS pools for vessel masters, with the percentage of masters holding BSS QS declining from 43% to 39% during 2012/13.

In contrast, QS and PQS holdings among CDQ groups have continued to increase substantially through more recent years in nearly all cases, however no change in such holdings occurred between 2011/12 and 2012/13. CDQ group have increased holdings in BBR and BSS QS pools from slightly more that 20% in 2005, to 12-13 % by 2011/12. CDQ holdings since 2005 have increased from 0-4% of the BBR PQS pool, and from 0 to 12% of BSS PQS, with somewhat larger proportional acquisitions in QS and PQS pools in other CR fisheries (Table 42).

Tables 43 and 44 illustrate the progress of attrition of initial issuees and influx of new entrants in from each CR fishery and sector over time. Over all fisheries and sectors, 111 out of 532 (21%) initial issuees have exited from holding QS or PQS since 2005, of which only 6 exited during the last season. In quota pools with small numbers of initial issuees, higher proportional rates of attrition have occurred, including 50% of initial PQS issuees exiting from the SMB fishery (declining from 16 to 6) and 100% exit from the EAG CPO pool as the last of 2 QS holders divested during 2013, as well as the only QS pools with 0% attrition to-date where all initial CPO QS holders still remain in the EBT and WBT fisheries (15), the WAI fishery (2), and the sole holder of CPO in the PIK fishery, which has not opened for fishing since 1998.

Table 44 provides statistics on new entrants to Owner (CPO and CVO) QS, Crew (CPC and CVC) QS, and PQS pools in each fishery as of the end of the 2012/13 season, relative to initial issuance and to the previous season (2011/12). The table provides counts of new entrants and total share of the quota pool acquired, and differentiates entrants that were new to CR program holdings in general ("New holder of owner QS, all fisheries"), or only to the respective quota pool (i.e., where the entrant previously held quota in another fishery or sector ("New holder of owner QS in fishery"). The number of new entrants

[16] Note: these statistics are a transitional outcome of the transfer; for the 2013/14 season, the CPO shares in both fisheries have been converted to CVO shares, and the CP vessel will subsequently be converted and operated as a catcher vessel by the new owner.

[17] Except for CFEC-permitted crab vessel operators identifiable in crab landings reports, no data are currently available to identify active participation status of crab fishing crew generally.

[18] Note that CVC shares are also held to some degree by active crab vessel crew members that do not hold CFEC gear operator permits. Most deck crew members hold ADF&G commercial crew licenses rather than CFEC permits, but only the CFEC permit of the vessel operator is recorded on landing reports. With currently available data, it is not possible to associate QS ownership with on-board crew status for individuals other than crab vessel masters.

by during 2013 by either measure was small for Crew QS and PQS. In the BSS fishery, three new Crew QS entrants (one of whom previously held CR shares in another pool) acquired a total of 2% of the pool, compared to a total of 22 new entrants since initial issuance to 160 quota holders. One new CR program quota holder in acquired crew shares in the EBT/WBT and PIK fisheries and one acquired PQS shares in the SMB fishery; no new entry to crew QS or PQS holders occurred during the year. Entry to the Owner QS pools during 2013 was more active, with new entrants to all but the EAG fishery, including 12 new entrants to the BSS fishery, 10 to SMB, 9 in BBR and EBT/WBT fisheries, acquiring 3% to 5% of each quota pool. In each case, most of the new QS holders were not new to the CR program, but in the WAG fishery, two new program entrants acquired a total of 12% of the CVO/CPO share pool, which doubled the count of new entrants to the fishery and increased the percentage of the QS pool transferred from initial issuees since 2005 from 3% to 15%.

Harvest Quota Lease Activity and Average Prices

EDR data collection for the 2012 calendar year implemented newly revised data collection protocols under Amendment 42 to the BSAI King and Tanner Crabs FMP (78 FR 36122, June 17, 2013); prior to the implementation of EDR revisions, data collected regarding EDR lease activity and costs did not differentiate between transfers of quota between independent entities that were priced at competitive market rates from non-arms-length transactions (i.e., those between affiliated entities or other types of non-market transfers characterized by nominal prices or in-kind compensation). For this reason, EDR quota lease data collected previously for 2005-2011 fisheries was not deemed of sufficient quality to disseminate. For collection of data associated with 2012 fisheries, revised EDR forms employ revised instructions specifying quota lease data elements as market-rate or negotiated-price transfers. Preliminary results of analysis of EDR quota lease data shown in Table 33 and summarized in Figure 10. These display aggregated results for crab fishing quota lease volume (in pounds) and cost reported for crab vessels active in 2012 calendar year BBR, BSS, and SMB fisheries,19 by fishing quota type category, including total quantities summed over all reporting vessels, and average values (both median and mean) for volume and cost of leased quota per vessel, and average lease price paid ($US per pound) and average lease rate (lease price as percentage of ex-vessel price) per vessel. Both median and arithmetic mean average value metrics are presented to provide information on the variation in reported values within each stratum, with the higher mean values shown indicating the presence of a subset of high-value data points in these data. Harvest quota types are categorized as the following: Catcher Vessel Owner Class A (CVOA) IFQ; Catcher Vessel Owner Class B (CVOB) IFQ and Catcher/Processor Owner (CPO) IFQ; Catcher Vessel Crew (CVC) IFQ and Catcher/Processor Crew (CPC) IFQ, Community Development Quota (CDQ), and Adak Community Allocation (ACA).

The number of vessels reporting quota leases in the 2012 BBR fishery range from 49 vessels leasing CVO Class A shares, to 5 vessels leasing CDQ shares (out of 64 crab vessels active during the 2012 BBR fishery), from 52 vessels leasing CVO Class A BSS IFQ allocation to 11 vessels leasing CDQ allocation (out of 72 active vessels) in the BSS fishery, and 16 vessels leasing CVO A allocation to 3 vessels leasing CDQ in the SMB fishery (further results for the latter are confidential due to the small number of entities reporting). Total volume and cost over all vessels leasing the respective quota types range from 3.5 million pounds and $17.6 million for BBR CVO Class A IFQ, to 26 thousand pounds and $42,000 for SMB CVO and CPC crew IFQ allocation; BSS lease volume and cost ranged from 40.8 million pounds and $40.8 million for CVO Class A IFQ to 1.7 million pounds and $1.8 million for crew share IFQ allocation.

[19] Note that CR crab fisheries are managed on a July-June seasonal calendar, 2012 calendar year fisheries include the 2011/2012 BSS season and 2012/2013 BBR season.

Per vessel averages (median) for BBR quota leased volume and cost ranged from 65 thousand pounds and $328,000 per vessel for BBR CVO Class A allocation, to four thousand pounds and $22,000 for BBR CVO and CPO crew IFQ; BSS per-vessel averages ranged from 654 thousand pounds and $679,000 per vessel for per vessel CVO- Class A allocation to 48 thousand pounds and $49,000 for BSS crew share allocation. SMB per-vessel averages ranged from 47,000 pounds of CVO-A IFQ leased, and $63,000 paid, to 3000 pounds of crew share IFQ leased and $6,000 paid. The difference in median and mean values shown in Table 33 are most pronounced in the per-vessel pounds and cost statistics; this primarily reflects the relative concentration of high volume quota lease activity of a small number of vessels within each quota type category (particularly in the case of pooled results for CVO- B Share and CPO IFQ allocation, where the latter is leased by a small subset of vessels). Average value metrics are calculated over individual vessel-level observations of both quota lease price and ex-vessel value; the general consistency of results between median and mean statistics across quota types indicates the relative uniformity of quota price paid by leasing vessels and the limited effect that the small number of high-price outliers in data have on aggregate statistical results.

Average (median) lease prices shown in Table 33 and Figure 10 range from a high of $5.40 per pound (64% of ex-vessel value) for BBR CDQ allocation, to $1.00 per pound (46% of ex-vessel) for BSS CVO Class A allocation. Lease rates (i.e. lease price as percentage of ex-vessel price)[20] range on average (median) from 62-64% for BBR IFQ and CDQ, 46-49% for BSS IFQ and CDQ, and 32-36% for SMB IFQ. Across all three fisheries, quota types that are not subject to IPQ share matching requirements generally appear to receive a price premium relative to CVO A Class IFQ, as indicated by average values for both prices and lease rates, with the highest values generally indicated for CDQ pounds. In the BBR fishery, median per-pound prices of $5.33, $5.18, and $5.40 for CVO-B and CPO IFQ combined, CVC and CPC IFQ combined, and CDQ, respectively, compared to $5.14 for A Class IFQ. In the BSS fishery, the $1.00 median per-pound price for A Class IFQ was lower than CVO-B + CPO and CVC + CPC, both with median price of $1.09, and $1.12 for CDQ. Given the substantial variation over the relative values of quota types as indicated by median and mean estimates shown in Table 33, it is difficult to draw any conclusion regarding statistical significance of quota type differences in lease values, and reliable estimates of any observable price premia will require more thorough statistical analysis than the descriptive statistics shown in this report.

During the first year of rationalization, 23 distinct crab harvesting cooperatives were formed by vessel and QS owner entities, and a rapid shift toward pooling of IFQ within cooperatives occurred in response to program incentives, as noted above. As of 2009, only a small fraction of the issued IFQ was landed by non-cooperative vessels (Table 11), and subsequently, all IFQ has been pooled within harvest cooperatives[21]. Correspondingly, all lease transactions registered with NMFS (Table 32) have taken place within harvest cooperatives, primarily in the form of IFQ assignment to the cooperative by member QS holders. Since 2005, leases registered by cooperatives have ranged from 144 during 2005/06, to slightly more than 300 in 2007/08 and 2008/09, with 198 leases registered in 2012/13. Noncooperative leases

[20] Lease rate statistics were calculated as the ratio of lease price to ex-vessel price at the vessel-observation level, averaged over all reporting vessels.

[21] For the 2009/2010 crab season, the Inter-Cooperative Exchange (ICE) harvest cooperative was formed. As of the 2012/13 season, 65% of crab IFQ was issued to ICE, with the remaining IFQ issued to eight other cooperatives; among other effects of formation of the ICE, administrative requirements related to IFQ transfer applications were largely obviated, facilitating assignment of 100% of issued IFQ to harvest cooperatives. See the Crab Cooperative Permits and Information section of NMFS AKRO Crab Rationalization webpage for more information: http://www.alaskafisheries.noaa.gov/sustainablefisheries/crab/rat/ram/permits.htm#crab.

were most common in the first year, with 113 in total, declining to 16 by 2007/08, the last year such transfers occurred.

Quota Share Sale Transfers and Average Prices

Permanent sale transfer of CR Program QS and PQS is permitted under a framework of rules intended to prevent excessive share consolidation and, in the case of PQS, maintain regional and community level processing capacity and employment associated with crab processing histories of individual processing plants (as discussed previously). As such, the frequency and volume of QS and PQS sale transfers discussed below are strongly influenced by regulation of the respective markets. The total number of QS sale transactions reported over the course of the program has ranged from 199 during the first year of the CR program, to a high of 290-330 during 2006/07 to 2007/08, and a low of 126 during 2011/12 (Table 33). During the most recent season, 211 sale transfers were registered with RAM, on par with general frequency of activity in this market since the 2008/09 season. PQS lease transfers have ranged between 25-40 per year, having increased to 35 during 2012/13 after a period of low activity during 2009/10 to 2010/2011. Sale transfers of PQS increased from 7 during the first two years of the CR program, to 42 during 2008/09, substantially higher than any other year. Three PQS sale transfers for 2012/13 followed the previous two years in which no transfers occurred.

During the first two years of the CR program, sales of catcher vessel crew share (CVC QS) represented a large proportion of individual sales (Table 34, Figure 11), with 65 and 99 sale transactions in 2005/06 and 2006/07, respectively, 55% of the total 118 transfers in 2005/06, and 47% of 209 transfers in 2006/07. The quantity of CVC QS transfers was smaller, however, totaling 1.1-1.2 million pounds in 2005/05 and 2006/07. Subsequently, crew share QS transfers have diminished as a proportion of all QS transfers, with catcher vessel owner (CVO) QS transfers becoming the predominant type. During the most recent two years, transfers of CVC QS were reduced to 7 in the BBR fishery, totaling 127,000 QS units (1.1% of the CVC QS pool), and 11 in the BSS fishery, totaling 920,000 QS units (3% of the pool). In contrast, 24 transfers of CVO QS were completed in the BBR fishery, totaling over 7 million QS units (1.8% of the pool) and 40 transfers totaling 16.2 million QS units (1.7% of the pool) in the BSS fishery. In the SMB fishery in 2012/13, there were 23 transfers of CVO totaling 1.0 million units (3.4% of the pool), after a period of few sales since 2007/08, when 10 sales totaling 877,000 units were completed.

Average prices for CVC QS units in the BBR fishery have ranged from $0.62 per QS unit in the 2010/11 to $0.80/unit in 2008/09 , and averaging $0.71 per unit in 2012/13, while CVO QS prices have ranged from $0.52/unit in 2005/06 to approximately $1.16/ unit in 2007/08 through 2008/09. Over the period of the CR program, the relative price rates for CVC and CVO QS in the BBR fishery has arced from a high of 1.3:1 (CVC:CVO) in 2005/06 dropping to 0.57:1 in 2007/08, and then increasing each year since, to 1.15:1 in 2012/13. Prior to 2012/13, QS prices on average have ranged in the BSS fishery between $0.19 to $0.42 per CVC QS unit, and $0.26 to $0.64 per CVO QS unit, but prices surged in 2012/13 to their highest levels since 2005, to $0.92 per CVC unit and $0.85 per CVO unit. The relative value of CVC and CVO QS has varied between 0.62:1 and 0.82:1 without any obvious pattern through the first 7 seasons of the CR program, but increased to 1:08:1 in 2012/13.

PQS transfers have been infrequent through the duration of the CR program, with the largest number of transfers occurring in 2008/09, including 4 transfers in the BBR fishery totaling 32.2 million PQS units (7.8% of the PQS pool), 5 in the each of the EBT and WBT fisheries totaling 12.2 million units (6% of each pool), and 8 in the WAG fishery totaling 18.9 million units (47% of the pool). Prices at each of these points have averaged $0.12 for BBR PQS, $0.01 for EBT and WBT PQS, and $0.07 for WAG PQS. As noted previously, no PQS sales have occurred in any CR fishery since 2010/11 with the exception of 3 transfers

for the 2012/13 SMB fishery. Data values for this and other points in the time series where too few transactions occurred to permit disclosure have been suppressed in these results.

IFQ and QS Price Comparison

Comparison of IFQ lease prices to QS sales price provides an important indicator of economic performance in IFQ fisheries, particularly regarding QS holders' expectations for fishery performance and product market prices and demand in the future[22]. Table 35 provides information used by NMFS to determine the conversion of QS units to pounds of IFQ by fishery and IFQ type for the 2011/12 and 2012/12 CR fisheries. Using the conversion ratio values, and average IFQ lease- and QS sale prices, the calculated IFQ:QS price ratio for BSS and BBR CVO type IFQ is 0.13, 0.15 for BBR crew IFQ, and 0.08 for SMB CVO IFQ (Table 36; results for other IFQ pools are not shown due to protect confidential data). Note that the number of reported observations is small for BBR CVC and SMB CVO lease and sale prices. As such, it is uncertain to what extent the price results shown represent market equilibria useful as indicators of perceived risk. Results shown for BBR and BSS CVO QS shares, however, are derived from a larger set of data points (21 and 40, respectively) and are likely more robust as indices of the expected rate of return. These results compare favorably with market rates for alternative investments, where yield rates over the period 2008-2013 on bonds of different risk and maturity have generally varied between 3% and 9%, with only high risk (C-rated) investment bonds reaching yield rates as high as 15% (Federal Reserve Economic Data, 2013). Due to the eligibility requirements for receiving transferred crab QS and other constraints affecting the market for QS, including the status of QS as a revocable privilege rather than a private asset, the high value of this index at any one point in time relative to investment market rates is not necessarily indicative of comparative risk regarding the financial value of QS. Rather, the utility of the index as an indicator of relative changes in expectations for risk and rate of return over time may be realized only as more data points accumulate.

Concentration of Catch Volume

The exemption from the use cap limitations on concentration of IFQ for vessels exclusively fishing IFQ held by CR program cooperatives is a critical element of the program that enables cooperatives to respond to resource and market conditions and shift the deployment and operation of vessels toward maximizing operating efficiency and economic surplus. The movement toward consolidation of 100% of

[22] In principal, in a well-functioning competitive market, price per pound of IFQ reflects QS holders and fishermen's expectations regarding the surplus to be produced from fishing the leased quota during the current season, taking account of uncertainty regarding factors that influence fishing costs and ex-vessel revenue. Similarly, QS sale prices reflect holder's expectations for the surplus value of the fishery over time, defined as the present value of the stream of annual lease earnings for the indefinite future, where distant future expected lease revenues are ascribed a lower value (discounted) relative to near-term expected earnings. Implicit in the ratio of QS price to IFQ price is the average discount rate, *r*:

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

where λ is the IFQ lease price/ex-vessel price ratio. In this relation, the index $r = IFQ_{lease\ price} / QS_{price}$ reflects QS holders' expected rate of return for holding QS, which in principal can provide an indicator of QS holders' collective expectations regarding the rate of return for holding QS. Changes over time in this index can suggest changing expectations of future value of the fishery, e.g. a negative change in r over time would indicate a reduced perceived risk of declining stock productivity, product prices, or other adverse management or market conditions. As a capital asset, the expected rate of return on QS is comparable to that of other investments of comparable risk, e.g. bond yields. As such, if r is lower that the market rate, the holder could expect to earn more over time by selling the QS and investing in alternative assets.

IFQ landings within crab harvesting cooperatives, while consistent with the intention of the CR program, also obviates any structural limitation on concentration of IFQ use. To provide an index of concentration, the Gini coefficient is presented in Table 46, showing changes in concentration of IFQ landings across active vessels within the crab fleet, and the equivalent in Table 47 for crab purchasing across the set of active Registered Crab Receivers (crab buyers). As calculated[23], the coefficient measures the relative evenness of the distribution of vessel-level total IFQ landings (or buyer-level total crab purchases) across the set of active vessels and buyers in a given crab fishery season. The index varies between 0 and 1, where 0 indicates equal quantity of pounds landed or purchased across all vessels/buyers, and 1 indicates complete concentration, with one vessel (buyer) landing (purchasing) all landed pounds.

With a heterogeneous fleet and highly variable operating environment, (hypothetical) perfectly even distribution of catch would not necessarily be economically optimal, *a priori.* However, a progression toward a more even distribution of catch may indicate incremental improvement in efficient utilization of vessel capital at the fleet level, whether achieved by means of capital improvements amongst a consistent set of active vessels, or consolidation and retirement of the least efficient vessel. Table 46 displays Gini coefficient index values by calendar year for 1998-2012, with number of active vessels, total pounds landed and sold, average (median) value per vessel of pounds landed, and median percentage of total pounds landed, by fishery. In the BBR fishery, the index has varied between 0.24 and 0.37, with the concentration of catch highest in the first rationalized season (2005). The BSS fishery shows the same pattern, with slightly lower index values prior to rationalization, and then a peak in concentration during the first season under rationalization (2006). Despite the clear break in number of vessels and median landings, there does not appear to be an equally large change in the degree of concentration of catch between the pre-and post-rationalization periods generally. However, in both fisheries, the period following rationalization does appear to be a gradual progression from a maximal degree of concentration toward a more evenly distributed catch, which may be attributable to improved coordination of vessel effort and more efficient utilization the active vessels. Results for the SMB fishery appear to be consistent with the pattern, noting that the time series is limited to only four data points; also note that results for AIG reflect the pooling of two distinct fisheries with small but largely distinct fleets (EAG and WAG, necessary to preserve confidentiality), such that the index doesn't have a clear interpretation in this case.

For purchasing of live-landed crab in the BBR fishery prior to the CR program, concentration index values varied between 0.58-0.66, with the number of active buyers averaging 25 per year (Table 47); following program implementation, index values have ranged between 0.54 and 0.61, with substantially fewer buyers (17 per season on average). In the BSS fishery, index values ranged 0.48 - 0.63 prior to 2006, and 0.42-0.50 subsequently, with the average number of buyers per season decreased from 29 to 16. In both fisheries, there is some indication of less concentration of crab purchasing among the remaining pool of buyers following rationalization, but no discernible pattern of change in the period following rationalization analogous to that shown results for the harvesting sector. Note, however, that the counts

[23] The index is calculated as $\frac{\sum_{i=1\ldots n} (2P_i - n - 1)x_i}{n^2 u}$, where P_i is the landings rank of vessel *i*, with landings of x_i pounds, such that the vessel with the highest landings is ranked 1 and the lowest is ranked *n*. Note that the number of active vessels (n) is generally decreasing over time, such that index values as calculated represent relative concentration among the set of active vessels in each crab fishery for each year. If calculated over a larger population that included inactive vessels with zero catch (not performed for this report), the index would indicate increasing concentration consistent with the overall consolidation of catch.

of buyers shown in Table 47 includes those actively processing crab in their own plant as well as those that did not operate a plant and process their own crab (i.e., buyers that solely contracted for custom processing of their purchased crab at one or more plants operated by other crab processors). As such, in contrast to the landings per vessel data shown in Table 46, the linkage to physical processing capacity is indirect in these results and possible inferences for relative efficiency in the processing sector are less clear.

Fishing Capacity, Effort, and Efficiency

General metrics of the gross capacity of physical and labor resources actively deployed in BSAI fisheries over the 1998-2012 period have been noted in a variety of contexts in the preceding discussion, including changes in size and composition of the active fleet (Table 5), as well as the number of individual crab vessel captains identified by CFEC permit number in cab landings records, and distinct crab buyers in the processing sector (Table 4). The rapid of consolidation of fishing capacity following rationalization is clearly depicted in fleet composition Figure 13, particularly in BBR and BSS fisheries, where the total number of vessels operating in the BBR fishery ranged from a high of 274 vessels in 1998, to 89 during the first year of the CR program, and 241 vessels in the 1999 BSS fishery to 78 in 2006 (noting that 24 vessels were retired from the fishery in the capacity reduction program implemented in 2004).

In addition to general measures of deployed capacity, more granular indicators of applied fishing effort and productivity are provided in this report, including vessel trips, vessel days (fishing and total days at sea) and, as a measure of effort at the gear level, potlifts (analogous to hauls, in the case of groundfish trawl fisheries). Pro-rata indexing of ex-vessel volume and revenue by each of these provide additional indicators productivity by season, and changes in efficiency over time.

Table 23[24] depicts the total number of days during which vessels in the crab fleet were active at-sea, which varies in response to a variety of conditions, including the quantity of allowable catch, but also weather and sea ice conditions affecting fishing. Most variation has occurred in the BBR and BSS fisheries, where there were an average 2670 (2611 for CV's and 52 for CPs) vessel days per season in the BBR fishery during the baseline reference years (1998, 2001, and 2004), and 843 vessel days during 2012; the largest shift in vessel days occurred between 2010 and 2011, when the total went from 2023 days to 910, concurrent with reduction in the TAC from 14.8 million pounds to 7.83 million pounds. Active days in the BSS fishery have ranged from 6570 averaged over pre-rationalization reference years (239 days for CPs and 6331 days for CVs), to 3032 in 2010 (as reported in EDR data; CIF data indicate 2812 days active during 2010, but both sources indicate a median of 41-42 active days per vessel). Days active in the 2012 BSS fishery increased by nearly 100%, from an estimated 2878 in 2011 to 5665 in 2012 (with median days increasing from 40 to 79).

Table 48 provides a summary of trip statistics, including the total number of vessel-trips by fishery and season, average (mean and sd) of trips per vessel, and average volume of landings per trip[25]. Crab

[24] See notes for the table describing data sources available for calculating vessel activity days during different periods, which introduces a degree of discontinuity in counts of vessel activity days over the pre- and post 2008 period, and in statistics calculated using these data to estimate daily pro-rata rates for various indicators. Table 23 and Figure 14 display results from both data sources in parallel to indicate the general degree of correspondence in results where the time series' overlap.

[25] Note that trip-based metrics in Table 48 are available only for the 2006/07 crab season and later, with limited information available from EAG and WAG fisheries. Also note that BST results shown include landings of BST crab that are caught as

vessels often make deliveries to multiple processors following a single fishing trip, and Table 48 provides the total number of deliveries per season, average deliveries per trip, and average landings volume per delivery. Statistics for vessel trips (total and mean per vessel) in the BBR fishery during the last six seasons have ranged from a low of 114 total trips (1.8 per vessel) during the 2011/12 season to 237 total (3.0 per vessel) during the 2008/09 season. Over this period, total catch increased from 2006/07 to 2007/08 through 2008/09, but decreased each season from 2009/10 to 2011/12; over the same period, mean landings per vessel consistently declined from 100,000 to 68,000 pounds per vessel. In the BSS fishery, as discussed previously, total catch has been considerably more volatile and vessel-trips counts have varied more widely, from 215 total trips (3.1 per vessel) in 2006/07, the lowest TAC year (37 million pounds), to 626 total trips (8.7 per vessel) in 2011/12 when the TAC was 89 million pounds. Over this period, average landings per trip have varied between a high of 175,000 pounds per trip in 2010/11 to a low of 142,000 pounds per trip in 2011/12, without a clear pattern. Total trips in the SMB fishery has increased from 15 (2.1 per vessel) during the 2009/10 season to 57 (3.2 per vessel) during 2011/12 season, with average landings per trip varying within a relatively narrow range of 31,000 to 33,000 pounds. In all three cases, note the high standard deviation values corresponding to the mean trips per vessel and landings per trip statistics, indicating a relatively high degree of between-vessel variation in these metrics in a given season.

As a well-known result of rationalization, season lengths in the CR program fisheries increased sharply as management shifted from derby fishing conditions, with BBR season openings lasting as few as 4 days during the 2004/05 season, and 6 days in the 2005 BSS season, to quota-based management under which season lengths have expanded to the full regulatory seasons during which the stocks can legally be targeted, as defined by SOA; including 93 days for BBR, 229 days for BSS, 274 for EAG/WAG, and 110 days for SMB. Details for seasons 1998 through 2012/13 are displayed in Table 49, including season lengths in days, and the date-span of active seasons subsequent to rationalization, including dates of first and last vessel landings, length of the active season in days, and percentage of the open season during which vessels actively prosecuted the fishery. Active seasons since CR program implementation have ranged in length in the BBR fishery from 33 days (35% of the available open season) to 92 (99% of the open season), and from 116 days (51% of the open season) to 231 days (94% of the open season) in the BSS fishery. Active seasons in the EAG fishery have ranged from 91 days during 2011/12 (33% of the available open season) to 211 days (77% of the open season) in 2005/06, and in the WAG fishery a low of 189 days in 2010/11 (69% of the open season) to 256 days (93% of the open season) during 2009/10. Table 50 provides additional detail for season length at the vessel-level, showing vessel averages for season length (days between first and last landing), and the minimum-maximum range, by fishery and season between 2005/06 and 2012/13 seasons.

Information on active season lengths as discussed above is shown for the BBR and BSS fisheries with additional detail in Tables 51 and 52 (summarized in Figure 15), depicting the length of fishing seasons (in terms of the period over which vessels delivered landings to processors), intensity of effort (number of vessels making landings in a week), and the cumulative proportion of total quota allocation landed by date, by allocation type (all quota types combined, CVO A Class IFQ, and CVO B Class and crew share IFQ). The 2012 BBR fishery was the shortest since 2005, with all crab being landed between October 15 and November 12. As depicted in the figure, the 2011-2012 BSS season was unique in both the length of the season and discontinuity of vessel effort during the late part of the season. This occurred as a result

bycatch in the BSS fishery and do not solely reflect directed targeting, and effort statistics shown should be interpreted accordingly.

of sea ice conditions that inhibited vessels from accessing northern district fishing grounds, requiring an extension of the fishing season by ADF&G from May 31 to June 15. As indicated by the lines showing cumulative proportion of fishing quota allocations landed over the course of the fishing season by type of quota, a consistent phenomenon across fisheries and seasons is that CVO A share quota (dotted line) is fished and landed somewhat earlier in the season than quota types that are not subject to share matching with processors holding IPQ (CVO B- and crew share IFQ, shown as the dashed line). This difference is most in evidence during the two most recent BSS seasons, during which the season was relatively prolonged: during the 2011/12 season, 20% of A-type IFQ remained to be landed as of the 28th week of the 35-week 2011/12 season, compared to 63% of B- and C-type IFQ, and the same relative distribution of landings by share type as of the 21st week of the 2012/13 season.

Finally, summary statistics for harvesting sector operating effort, measured as potlifts per vessel are provided in Table 53 for all CR fishery seasons from 1998 to current, and depicted graphically in Figure 16 for BBR and BSS fisheries, with derived productivity per-unit-effort metrics calculated as retained catch- and revenue-per potlift. Statistics reported include total potlifts (aggregated over all vessels), and average values (mean and sd) for effort (potlifts) per vessel, catch per unit effort (CPUE), and revenue per unit effort (RPUE). In the BBR fishery, total potlifts range from a high of 150,000 (600 per vessel) in 1999, to a low of 45,000 (700 per vessel) during the 2011/12 season. Potlifts per vessel prior to rationalization ranged from 300-600, increasing to 700-2000 per vessel after 2004 in response to fleet consolidation. Vessel average CPUE in the BBR fishery ranged from 11.9 to 22.9 crabs per pot over the period 1998-2005, with an average over the period of 17.2 legal crab per pot; over the period 2005/06 to 2011/12, CPUE ranged from 18.6 - 33.3, and averaging 25.9 over the period, an increase of 51% over the pre-CR fishery average CPUE. Vessel average RPUE in the BBR fishery ranged from $423 to $1235 per potlift during the pre-rationalization period, compared to $734 - $1832 subsequently, with the average over the respective periods increasing 23% from $812 to $1004.

In the BSS fishery, total potlifts have ranged from a high of 945,000 (3,900 per vessel) in 1999, to a low of 73,000 (400 per vessel) during the 2005 season, both occurring prior to CR implementation, with potlifts per vessel ranging from 400 to 3,900 and averaging 1,300 over the period. Subsequently, potlifts per vessel have ranged from 1,200 to 3,700 and averaged 2,100 per vessel, a 62% increase. CPUE has increased from a range of 76-246 and an average of 145 legal crab per pot over the period 1998-2004, to 213-356 crabs per pot, increasing 91% to an average of 277 over the period 2005/06 to 2011/12. Vessel average RPUE ranged from $423 to $1235 per potlift during the pre-rationalization period, compared to $734 - $1832 subsequently, with average over the respective periods increasing 50% from $452 to $676. For the most recent SMB fishery prior to CR implementation, total potlifts reached 91,700 over all 132 active vessels, 700 on average. From 2009/10 to 2011/12, potlifts per vessel have ranged 1,500 to 2,700, with CPUE averaging 9.2 crabs per potlift, up 30% compared to 1998, and RPUE averaging $164 per potlift, up 66%. Results for EAG and WAG are not shown for the most recent four fishing seasons due to confidentiality limitations. These results indicate substantial improvements in operating efficiency in CR program fisheries, achieved by improved vessel stock and coordination active vessels, as well as improved fishing methods, most notably longer soak times during which pots are left on the grounds, producing larger catches rates for legal crab and lower bycatch of sublegal crab.

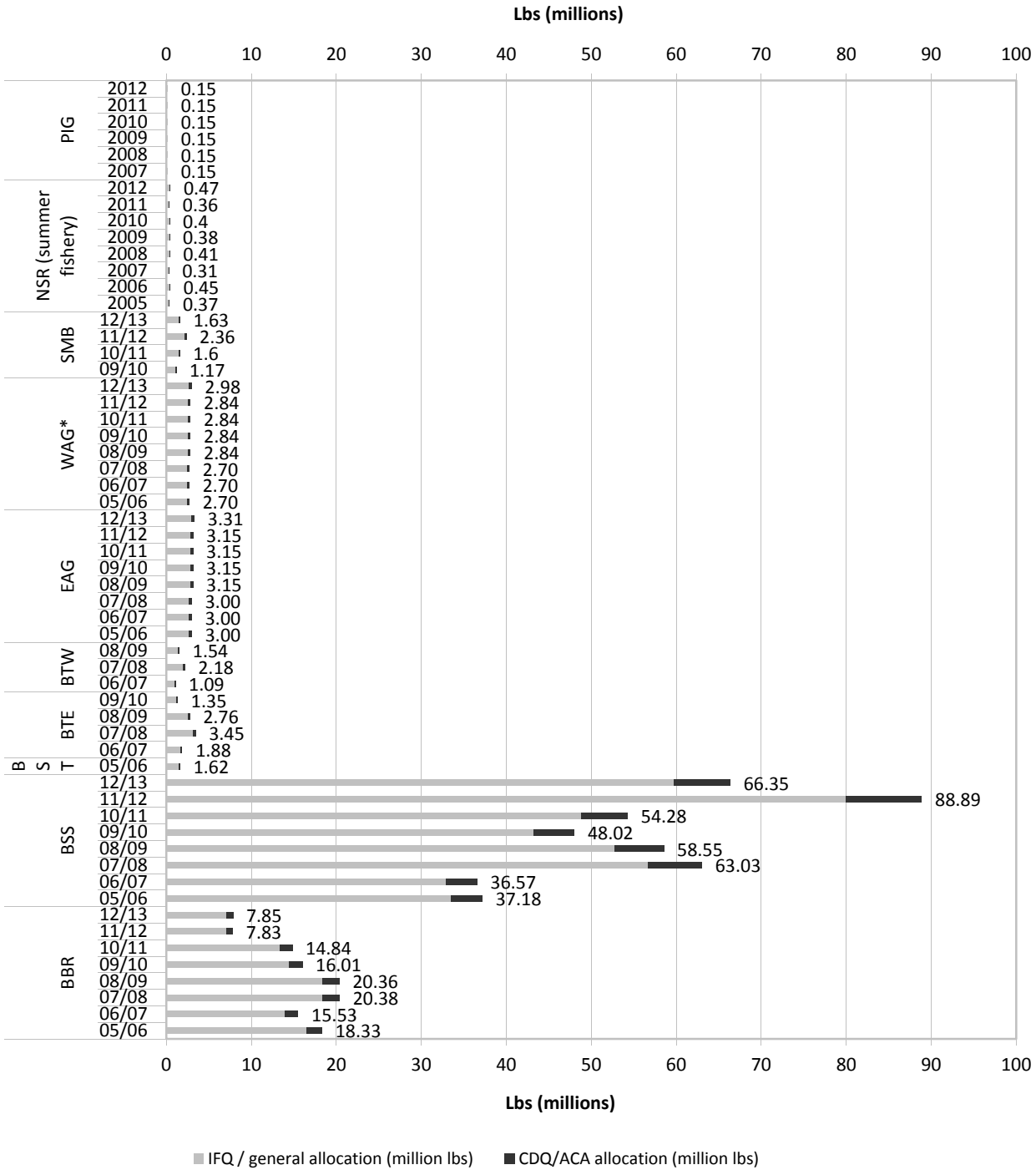
International Trade in Crab Commodities

U.S. foreign trade statistics for frozen, processed king and snow crab are summarized for the period 1991-2012 in Table 54 and depicted graphically in Figure 17. For most of the last two decades, the U.S. has been a net importer of both king and snow crab product, with a negative trade gap beginning in 1995 for king crab and 1998 for snow crab. Over the last 10 years, U.S. frozen king crab exports by volume have varied from a low of 1,980 metric tons (*t*) in 2012 to a high of 4,330 *t* in 2006, and in value terms between $50.5 million in 2012 and $85.7 million in 2010. Imports over the same period have been more variable, surging to 30,000 *t* at a value of $430 million in 2007, from which point they have tapered on an annual basis to the most recent figures for 2012 of 9,400 *t* and $164 million. U.S. exports of frozen snow crab product since 2003 has varied from a low in 2007 of 2,120 *t* with a value of $17.9 million, to the recent peak in 2012 of $12,720 t with a value of $128 million. Snow crab imports have been somewhat less volatile in volume terms than those of king crab, varying between 41,000 and 51,700 *t*; total value has varied more widely, between a low of $395 million in 2006 to a high of $640 million in 2003. In 2012, the net trade deficit in snow crab product reached its lowest level since 2000, falling to 28,960 *t* and $305 million in negative net exports.

The major world producers of king crab are currently the United States and Russia, with Russia being the main source of U.S. imports and the primary competitor in international markets. In the years immediately following the rationalization most of Alaska's king crab fisheries, U.S. producers have confronted a large volume of relatively inexpensive imports of Russian king crab (Fig. 4), at least some of which is reportedly from a stock introduced in the Soviet era to the Barents Sea. While low-priced imports may benefit U.S. consumers, downward price pressure exhibited both domestically and abroad, until recently, reduces profitability in both harvesting and processing sectors of Alaska's king crab fisheries. It is worth noting that global and domestic prices for king crab have varied quite a bit over time, and the most recent downward trend in U.S. prices from 2002 to 2009 began during a period of decline in Russian production, before the rise in U.S. imports which occurred after 2004. Therefore, factors other than the total amount of crab on the market must be considered to explain recent trends in market prices.

Figure 18 displays U.S. import and export volumes of king and snow crab for 2012 by trading partner, emphasizing the relative scale of trading volume between trade destinations and origins, as well as the global distribution of trade in king and snow crab product. As shown in the left upper panel, the largest destinations for king crab exports during 2012, consistent with relative rankings over the last decade, are Japan (1.19 million *t*), Canada (0.41 million *t*; shown as Nova Scotia on the map), and China (0.14 million *t*). The principal import source for frozen king crab is Russia, with 8.08 million t in 2012, followed by Argentina with 0.86 million t and Norway with 0.36 million *t* exported to the U.S.. The primary export destination for U.S. snow crab exports in 2012 was China, with 7.06 million *t*, followed by Japan (3.3 million *t*), and Canada, with 0.94 million *t*. Primary sources for U.S. snow crab imports were Canada (36.6 million *t*), Russia (4.1 million *t*), and Greenland (0.59 million *t*).

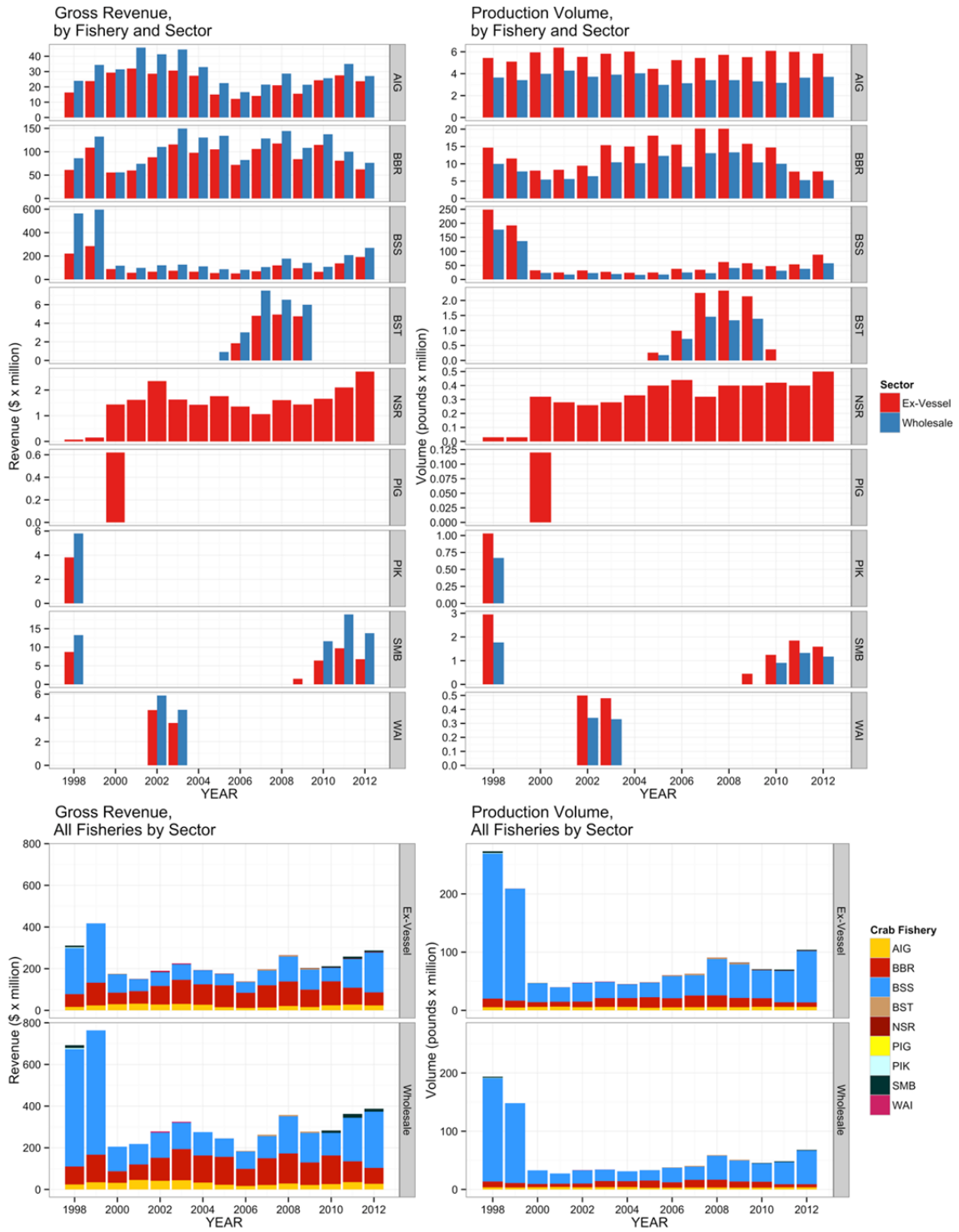
Figure 2: TACs/GHLs and Management Program Allocations, BSAI Crab Fisheries



Source: ADF&G. Tabular data available in Table 3.

Numeric values shown represent total TAC/GHL allocations to directed fishing, 10% of which is allocated to CDQ/Adak Community Allocation.

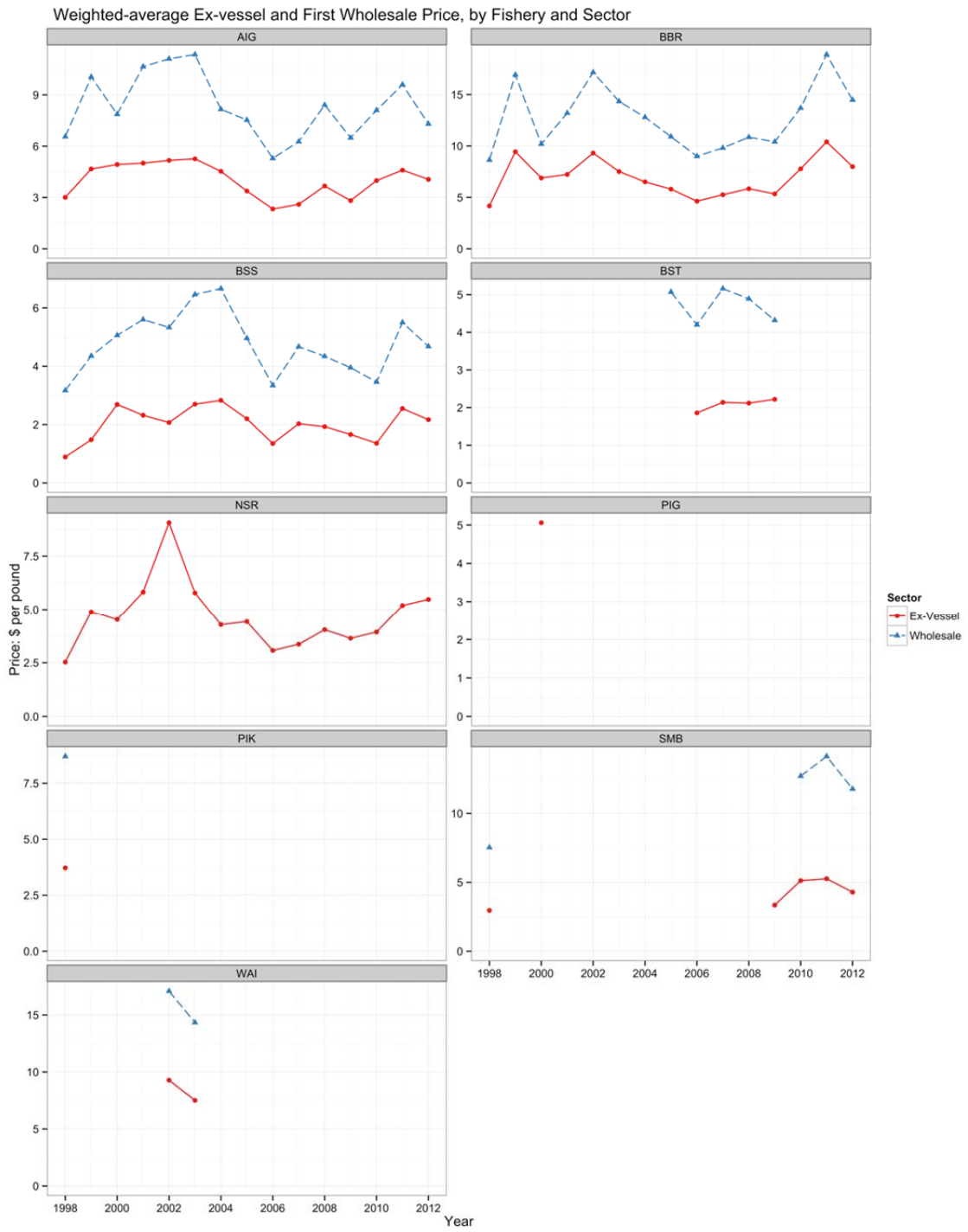
Figure 3: Ex-Vessel and First Wholesale Gross Revenue and Production Volume, by Calendar Year, Selected Fisheries



Source: ADF&G fish tickets, eLandings, CFEC pricing based on COAR buying reports. Data shown by calendar year. Tabular results are shown in Table 7 and Table 12.

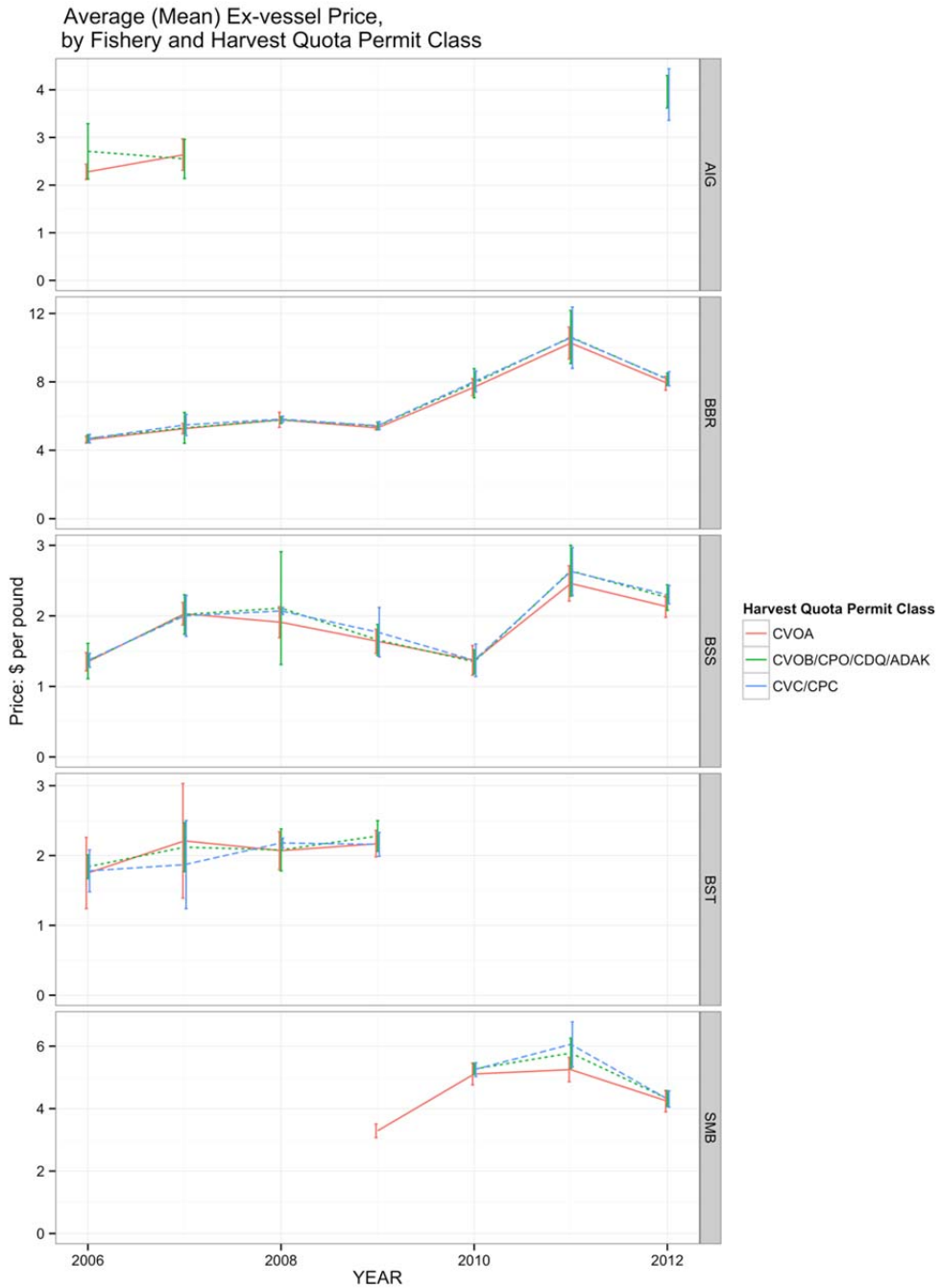
Includes commercial harvest from general, IFQ, and CDQ management programs and commercial pounds harvested by catcher/processors.

Figure 4: Ex-Vessel and First Wholesale Prices, Selected Fisheries



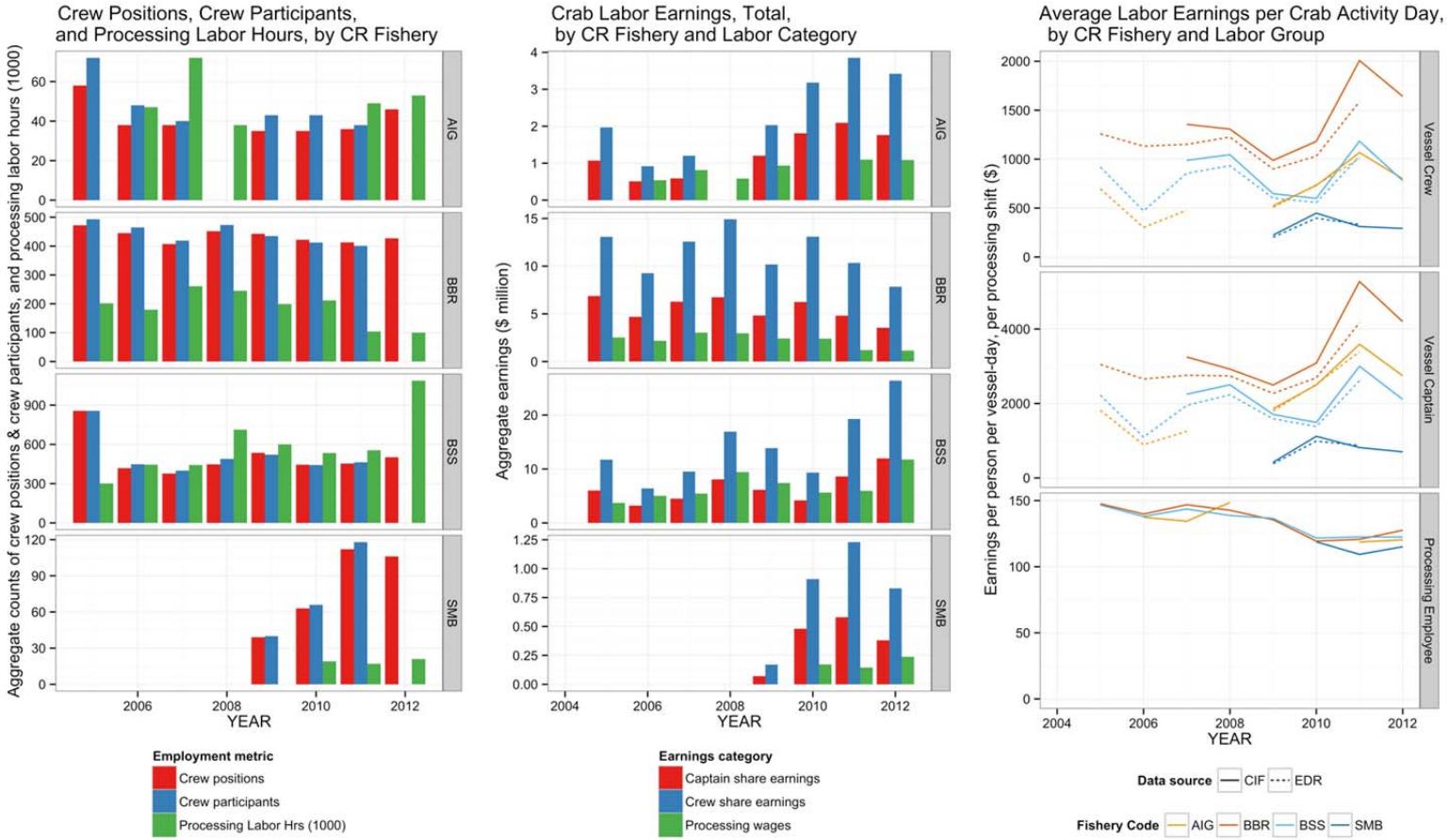
Source: ADF&G fish tickets via eLandings, CFEC pricing based on ADF&G Commercial Operators Annual Report, NMFS AFSC BSAI Crab Economic Data. Data shown by calendar year. Tabular results available in Tables 7 and 12 of this report.

Figure 5: Ex-Vessel Price by Quota Type, Selected Fisheries



Source: NMFS AFSC BSAI Crab Economic Data. Data shown by calendar year. Tabular data available in Table 10. CVC/CPC=catcher vessel and catcher/processor C share quota, CVOA=catcher vessel owner A share quota, CVOB=catcher vessel owner B share quota, CPO=catcher/processor owner quota. 2005 ex-vessel revenue data was reported over all quota types. 2005 BSS data includes revenue earned prior to and after rationalization. Error bars show one standard deviation from mean. Selected data for AIG and BST suppressed for confidentiality.

Figure 6: Harvest and Processing Employment and Compensation, Selected Crab Fisheries



Source: NMFS AFSC BSAI Crab Economic Data. Data shown by calendar year. Tabular data available in Tables 15, 19-20, and 23.

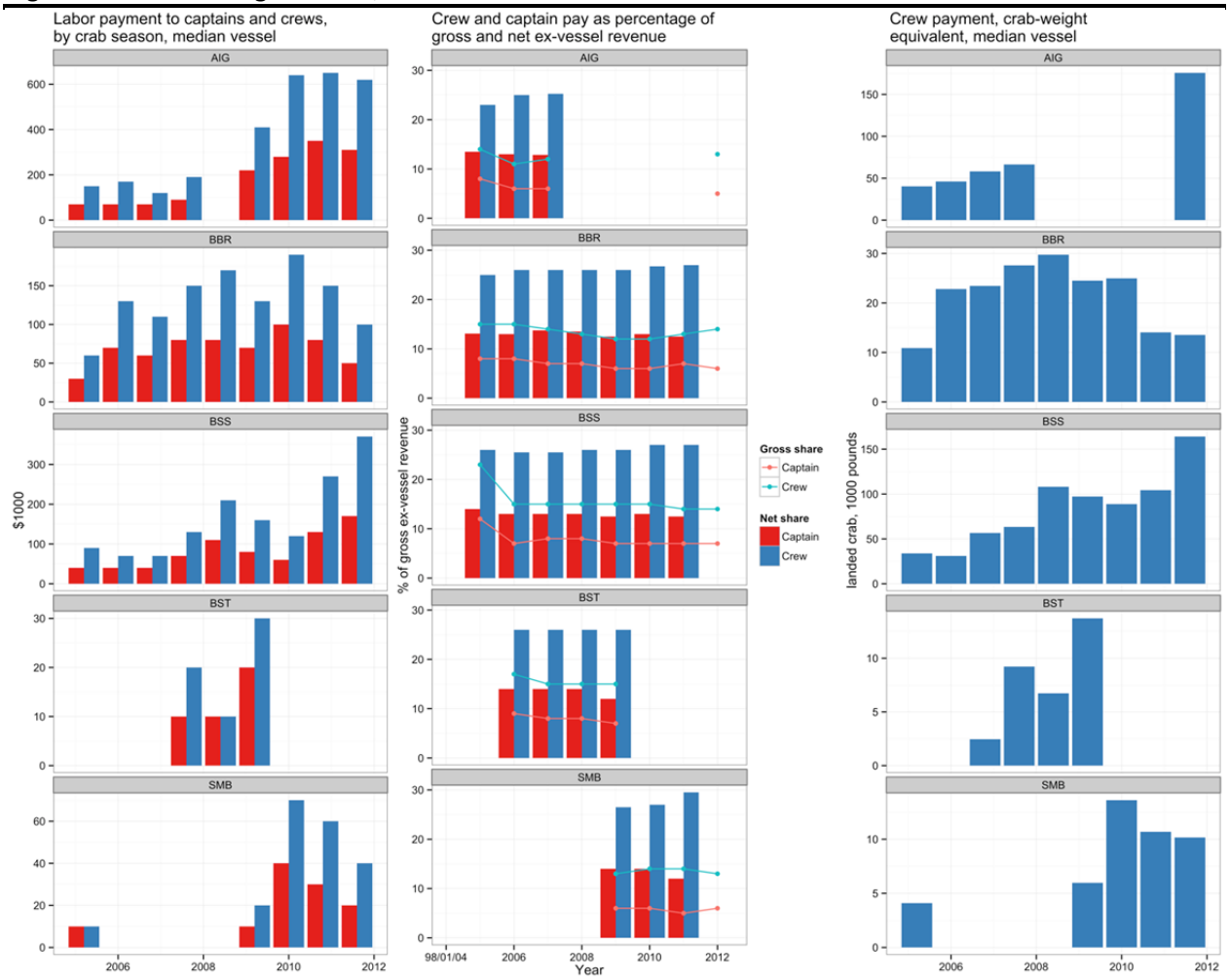
Values shown for 98/01/04 represent the annual average over the three-year series. Data for BST, PIK, and WAI fisheries are not shown. 2008 data for AIG are suppressed for confidentiality.

Labor earnings per activity day represent aggregate crew and captain labor payment per vessel, pro-rated over vessel activity days; processing labor earnings per day represent aggregate processing labor payments divided by number of 12-hour FTE shifts (aggregate processing labor-hours/12).

(a)1998-2008 shows CV positions and participants only; 2009 shows data aggregated over CV and CP sectors 2005 and later crew positions data from ADF&G fish tickets. BSS crew position data were not collected in 2005.

(b) 1998-2008 data show total and median CV and SFP payments only; 2009 data show total and median crew payments over CV and CP sectors combined and processing employee payments over CP and SFP combined.

Figure 7: Crew Earnings Metrics, Selected Crab Fisheries



Source: NMFS AFSC BSAI Crab Economic Data. Data shown by calendar year. Tabular data available in Tables 15 and 22.
Values shown for 98/01/04 represent the annual average over the three-year series.
Median pay in dollars shown for CV sector only for 1998-2008 and for CV and CP sectors combined for 2009 and later.
Median crab-equivalent crew pay is shown for CV sector only for all years. Crab equivalent pay is denominated in pounds and is calculated by dividing vessel crew share payment by ex-vessel price per pound; this represents the quantity of crab landed by the vessel in a given year that is converted to crew payment. Crew and captain pay as percentage share of net ex-vessel revenue is reported by annually by vessel owners in EDR, but reflects variation in the types and amounts of deductions for shared vessel operating expenses in determining crew settlements between different owners/crews. Percentage share of gross ex-vessel revenue is the median value over vessel-level observations of the calculated ratio of reported crew and captain labor payment to gross ex-vessel revenue. Selected data for AIG and BST fisheries suppressed for confidentiality.

Figure 8: (a) Aggregate CR Program Crab Vessel Operating and Capital Expenditures, by Cost Item, All Vessels, 1998-2012

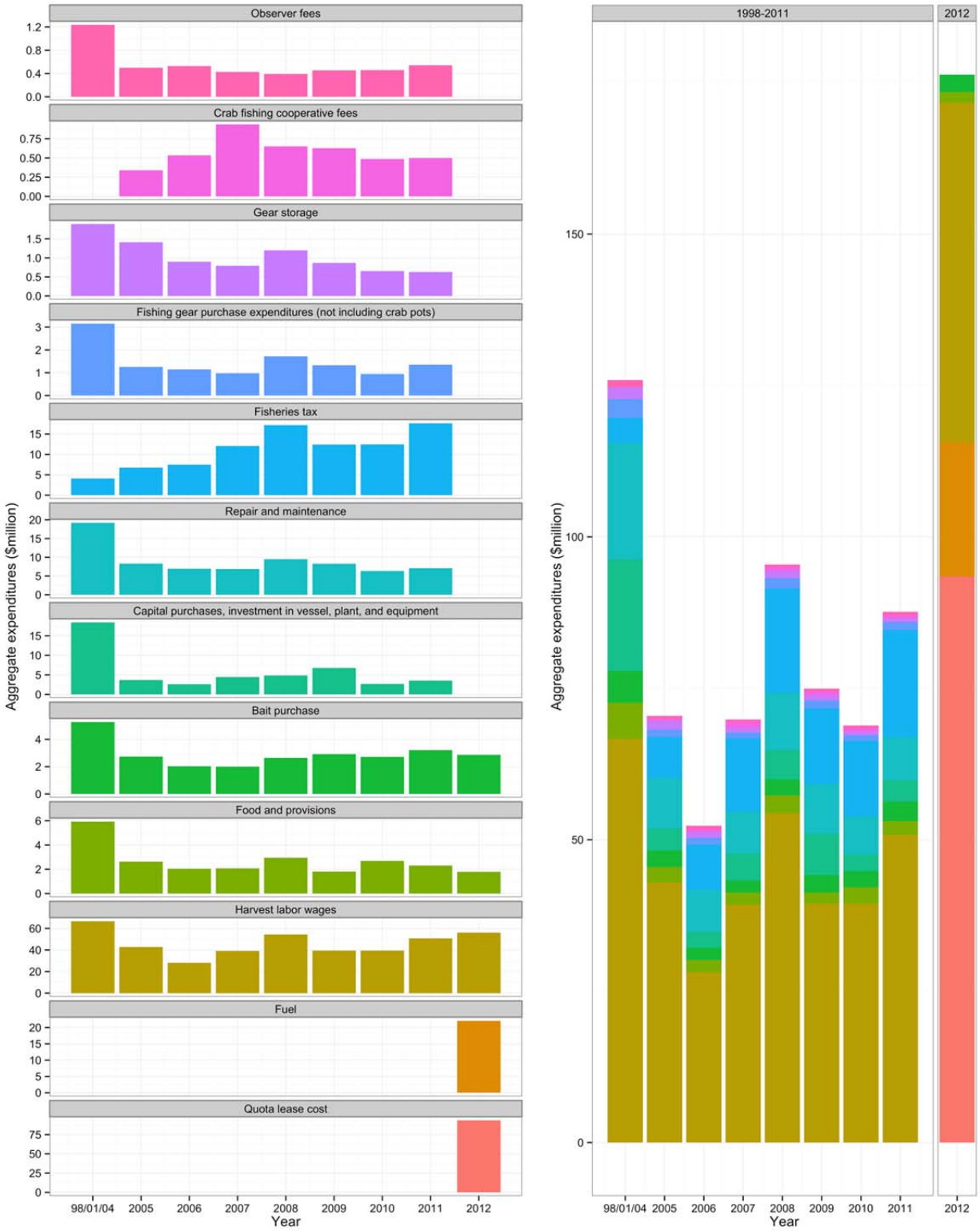
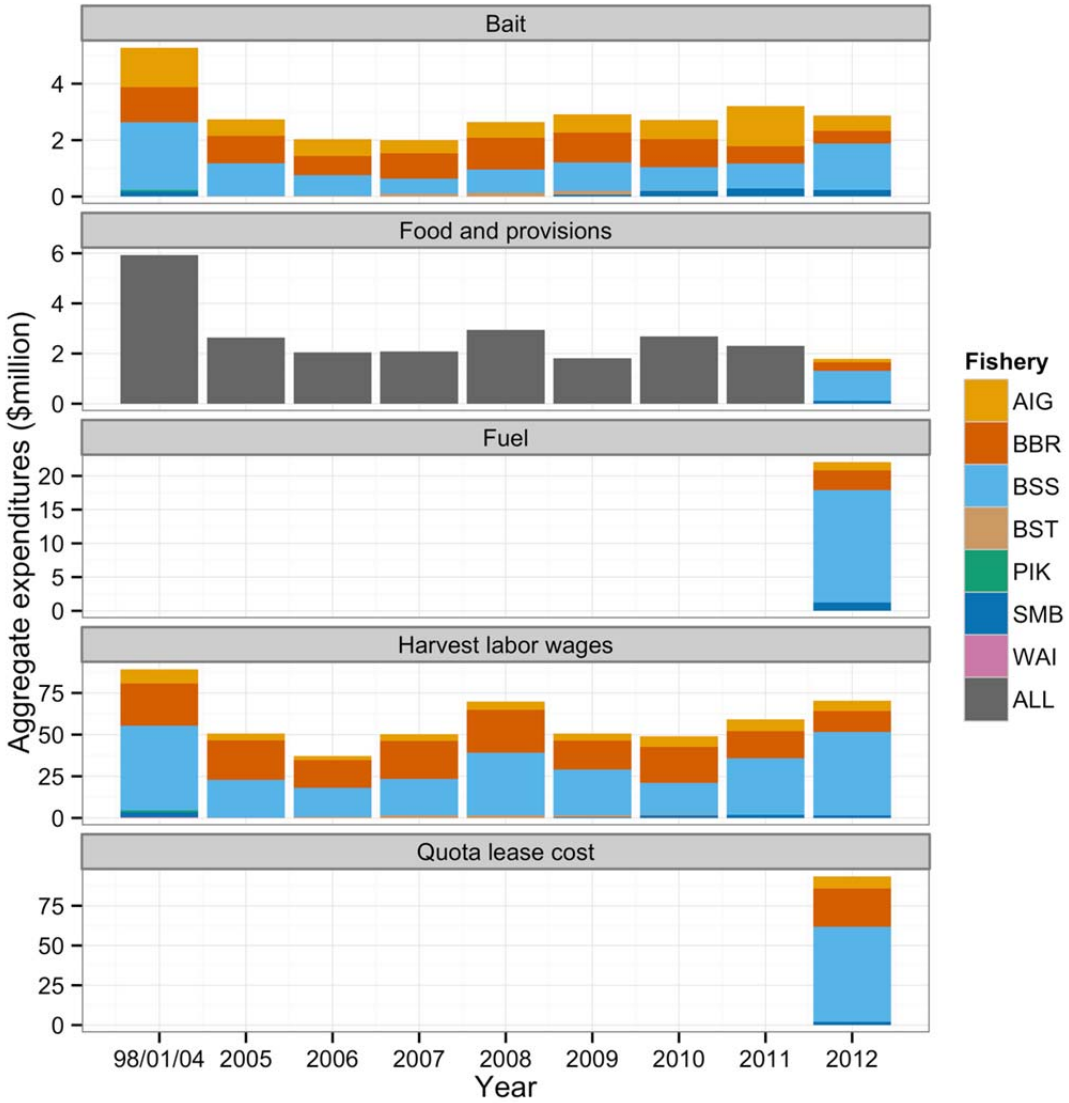


Figure 8: (b) Aggregate Crab Vessel Operating and Capital Expenditures, by Cost Item and Fishery, All Vessels, 1998-2012



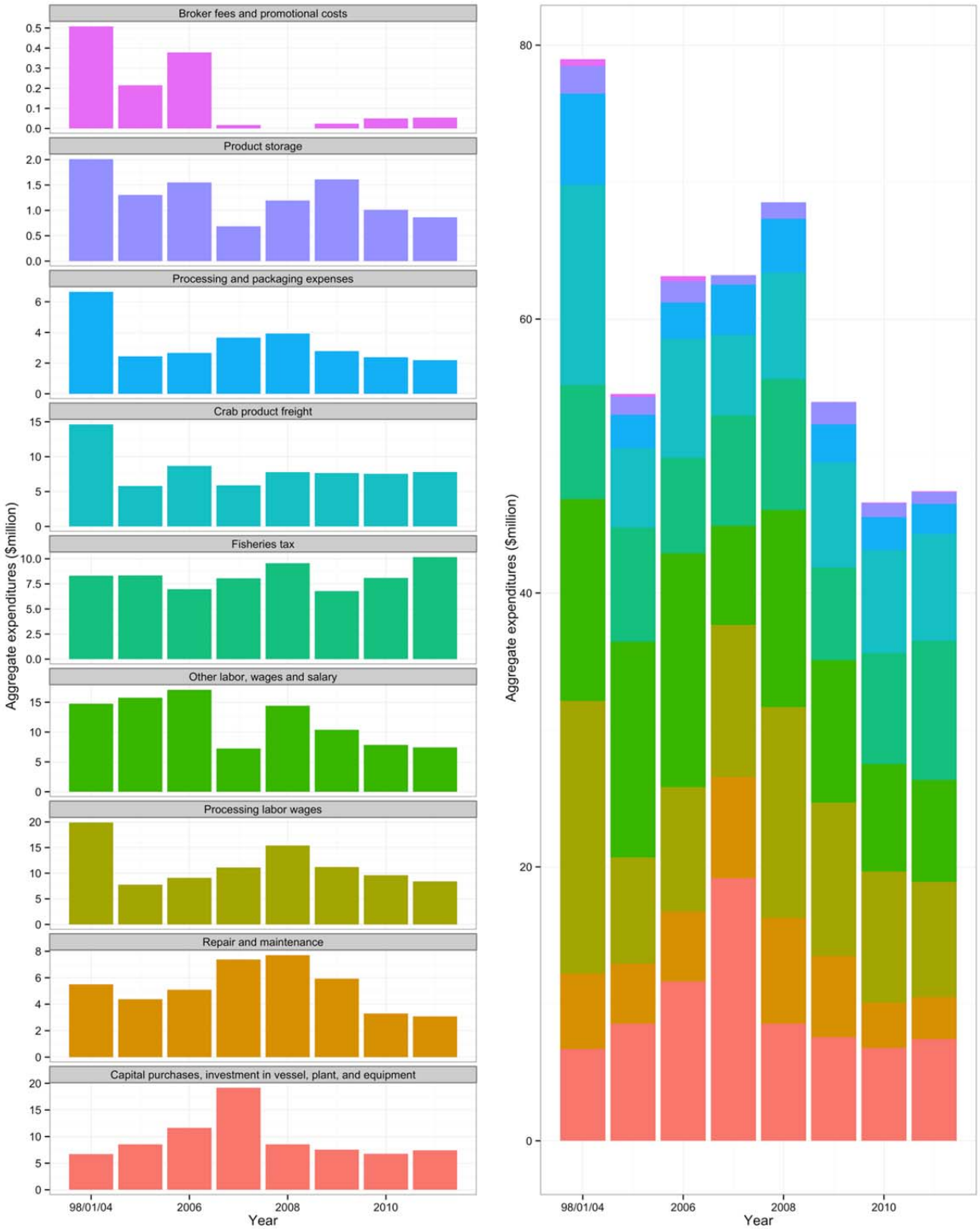
Source: NMFS AFSC BSAI Crab Economic Data. Tabular data available in Tables 25 - 28 and 33. Values shown for 98/01/04 represent the annual average of results pooled over the three years . Cost data shown include all major cost items for which data are available, but do not represent a comprehensive accounting of operating or capital expenditures.

Figures (a) and (b) present total annual expenditures by cost item for calendar years 1998-2012, aggregated over all vessel entities reporting except where data are suppressed for confidentiality. Note change in cost items reported for 1998-2011 and 2012: EDR data collection protocols implemented beginning 2012 discontinued reporting for several expenditure items and required reporting of expenditures for food and provisions by crab fishery. Data for fuel and quota lease expenses collected prior to 2012 are not shown in figures due to data quality limitations.

Figure (a) displays results for all cost items where data are available from 1998-2012, aggregated over all CR program fisheries; the left panel shows expenditure level (vertical axis) scaled separately for each cost item to indicate changes over time by cost item, and right panel shows expenditure level scaled uniformly across cost items to emphasize relative scale of expenditures between cost items.

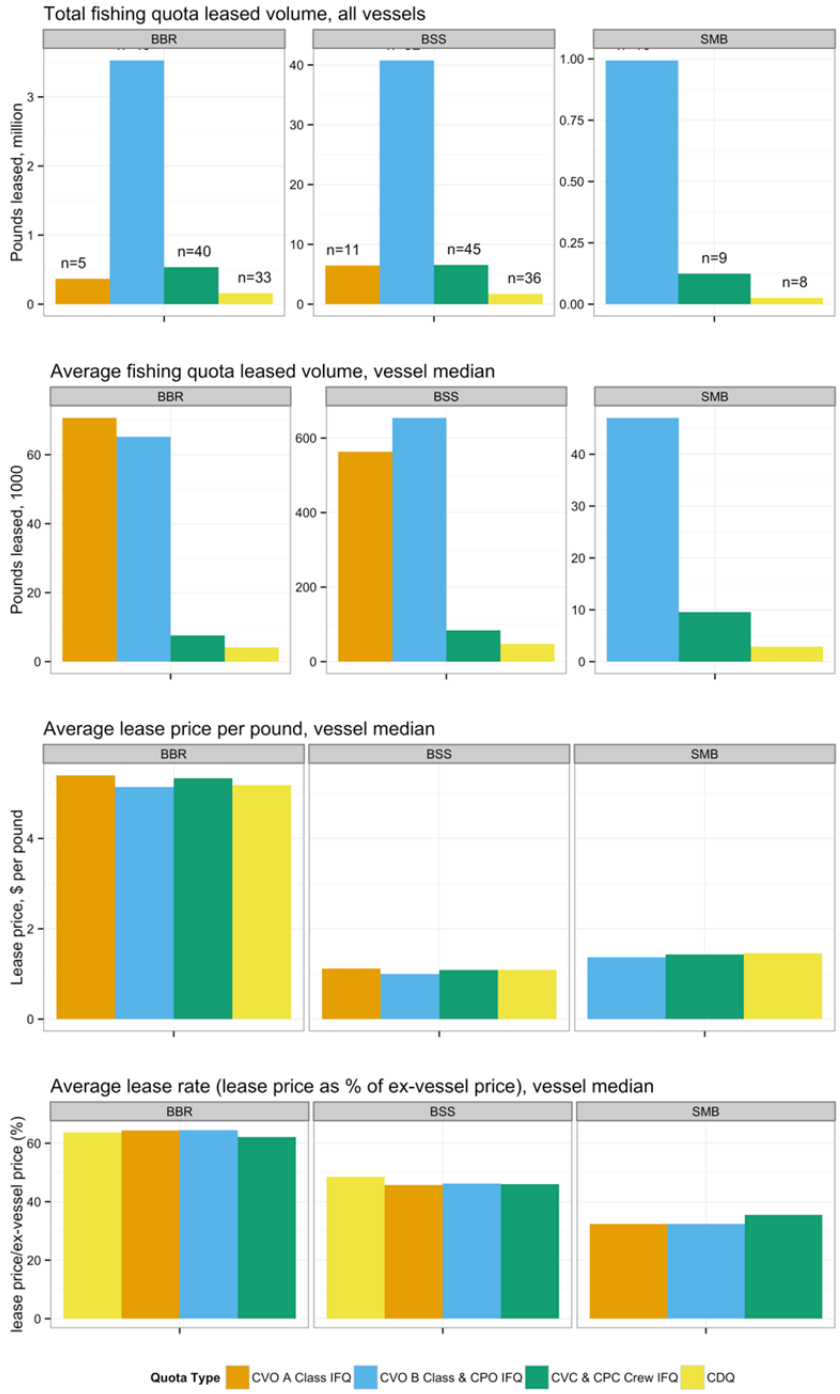
Figure (b) displays results by cost item and CR program fishery for cost items included in revised EDR implemented for 2012.

Figure 9: Crab Processor Operating and Capital Expenditures, by Cost Item



Source: NMFS AFSC BSAI Crab Economic Data. Tabular data available in Tables 24, 25, and 30. See Figure 8 notes for details and interpretation.

Figure 10: Crab harvest quota lease activity – lease volume, price, and rate, 2012 calendar year BBR, BSS, and SMB fisheries

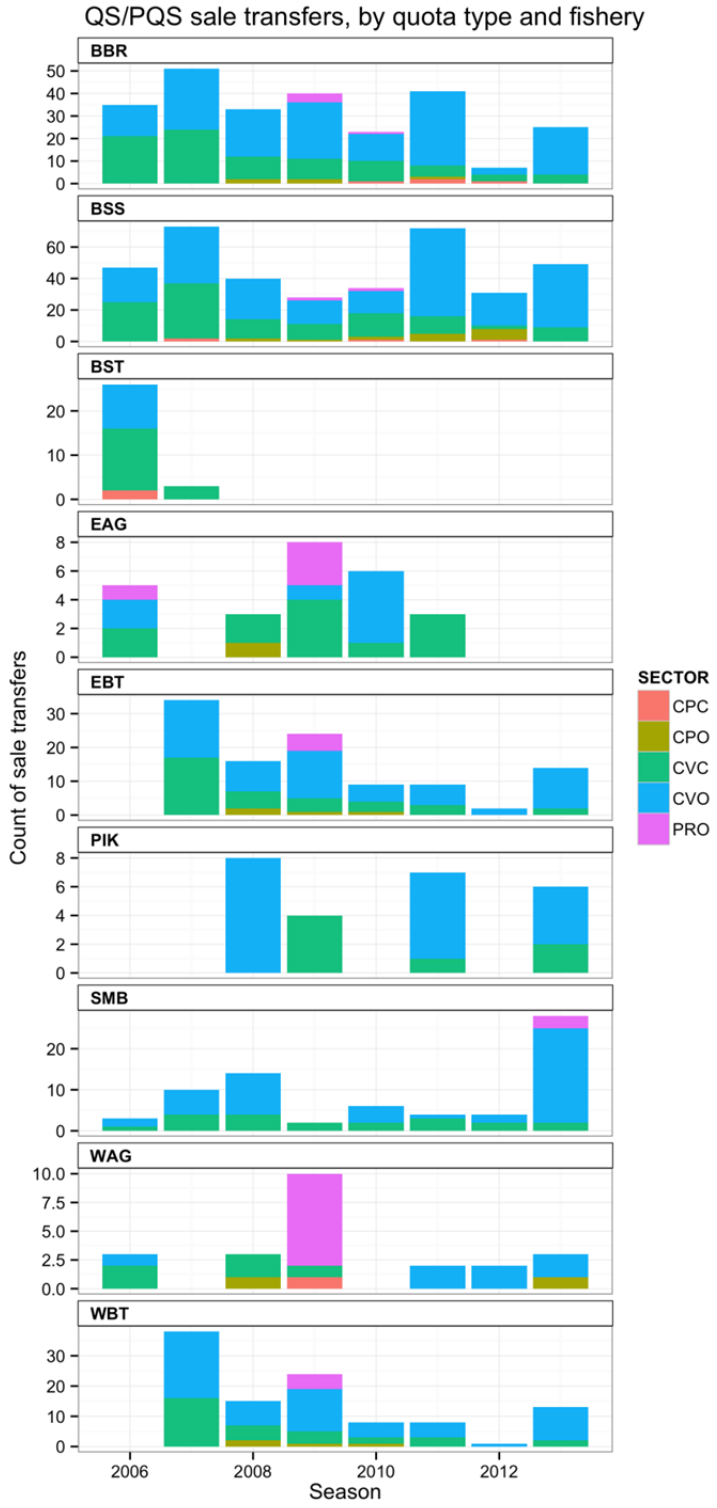


Source: NMFS AFSC BSAI Crab Economic Data. Tabular data available in Table 33.

Lease data shown represent arm's length lease transactions reported for active crab fishing vessels in the 2012 Crab EDR; data collected for earlier years is not reported due to data quality limitations.

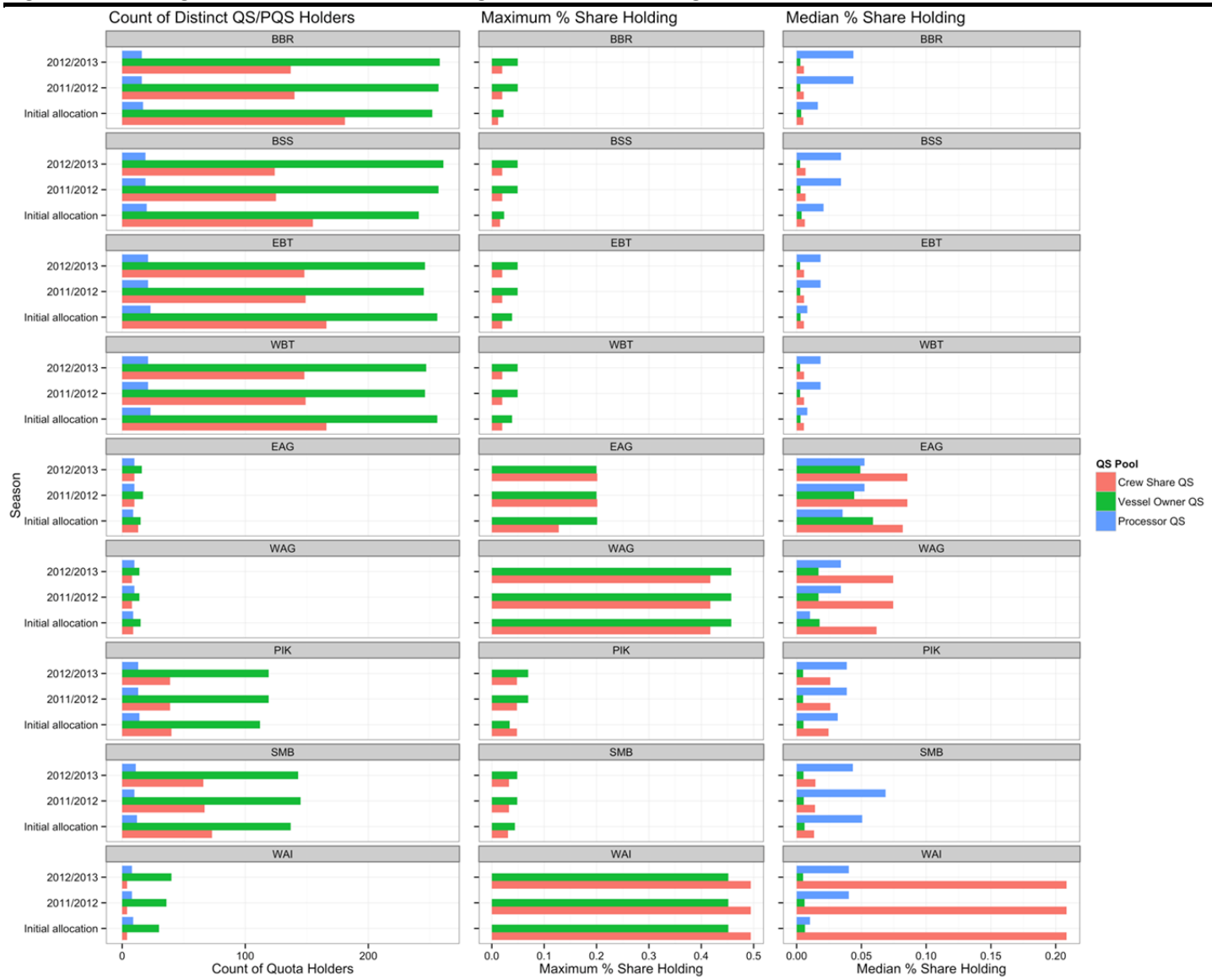
Harvest quota types are categorized in this report as the following: CVO A – catcher vessel owner Class A IFQ; CVO B + CPO - catcher vessel owner Class B IFQ and catcher/processor owner IFQ; CVC + CPC – catcher vessel crew IFQ and catcher/processor crew IFQ. Statistics reported represent results pooled over all quota types and/or regional designations within each category.

Figure 11: QS and PQS Sale Transfers



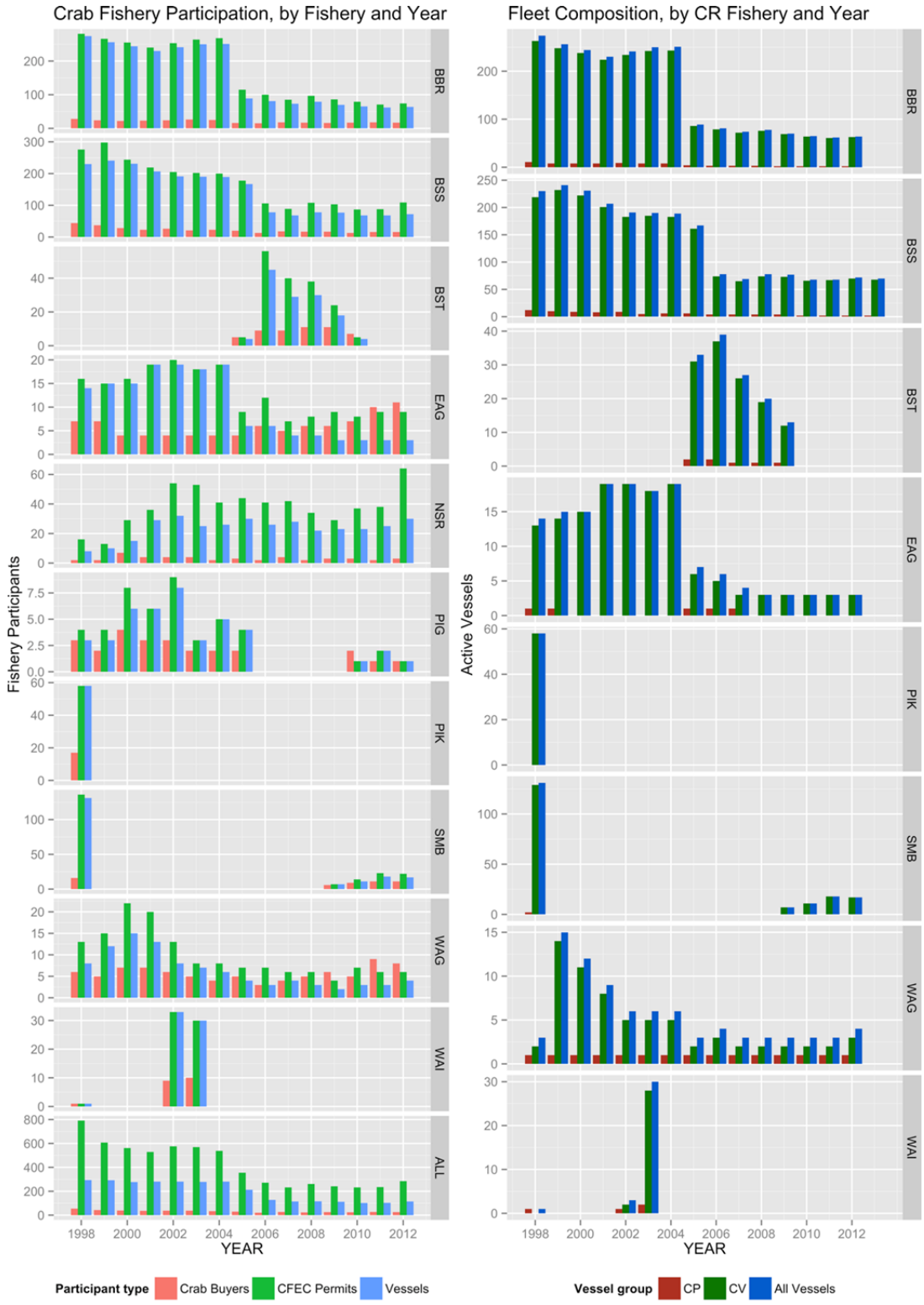
Source: NMFS AKRO RAM division, Quota share transfer data. Data resented in Table 34.

Figure 12: CR Program – Harvest and Processing Quota Share Holdings, Initial Allocation, 2011/2012, and 2012/2013 Seasons



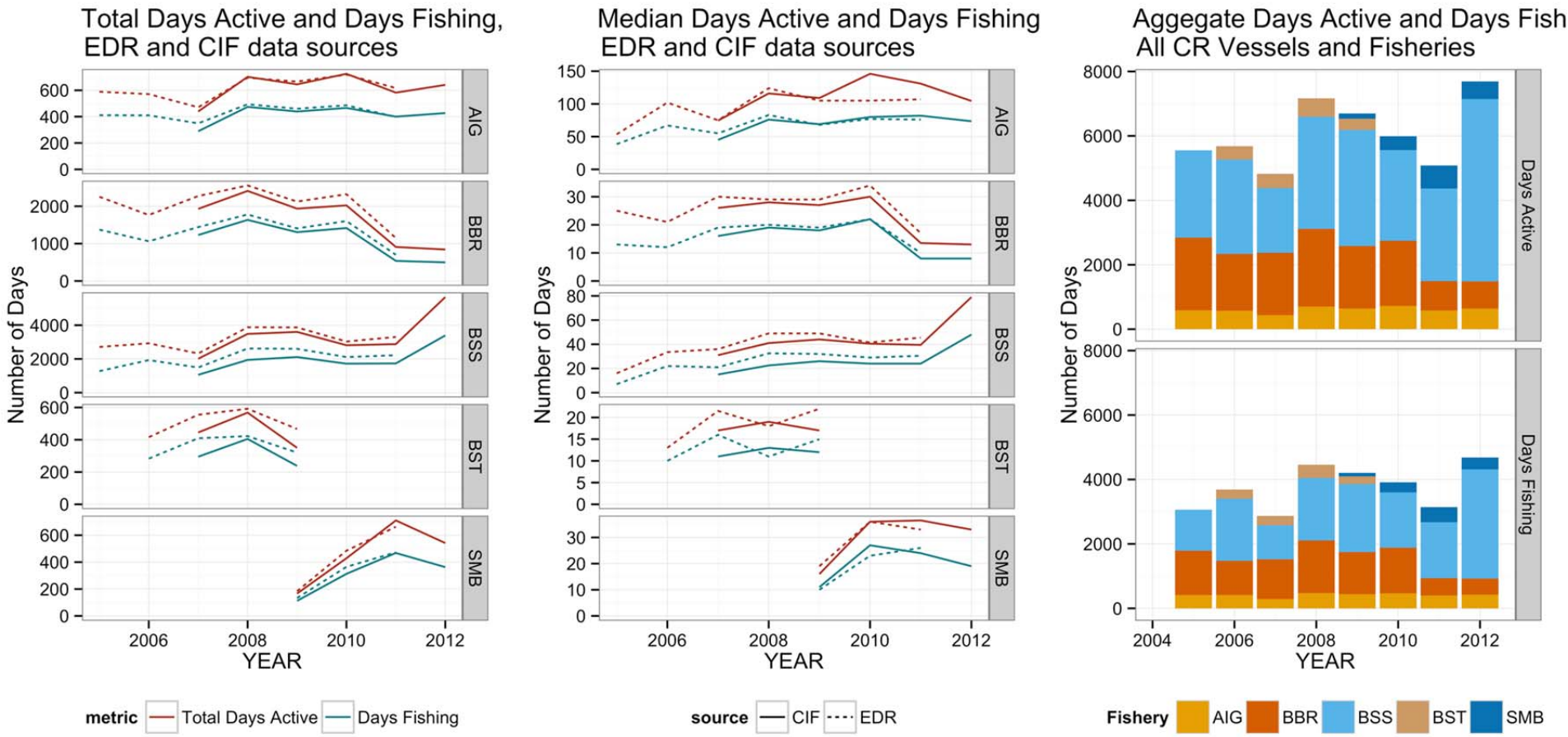
Source: NMFS AKRO RAM Division, quota share holders files. Tabular data available in Tables 39 and 41.

Figure 13: BSAI Crab Fishery Participation and Fleet Composition, 1998-2012



Source: ADF&G fish tickets, eLandings. Tabular data available in Tables 4 and 5.
Gaps in time series for BST, PIG, PIK, SMB, and WAI indicate fishery closure years.

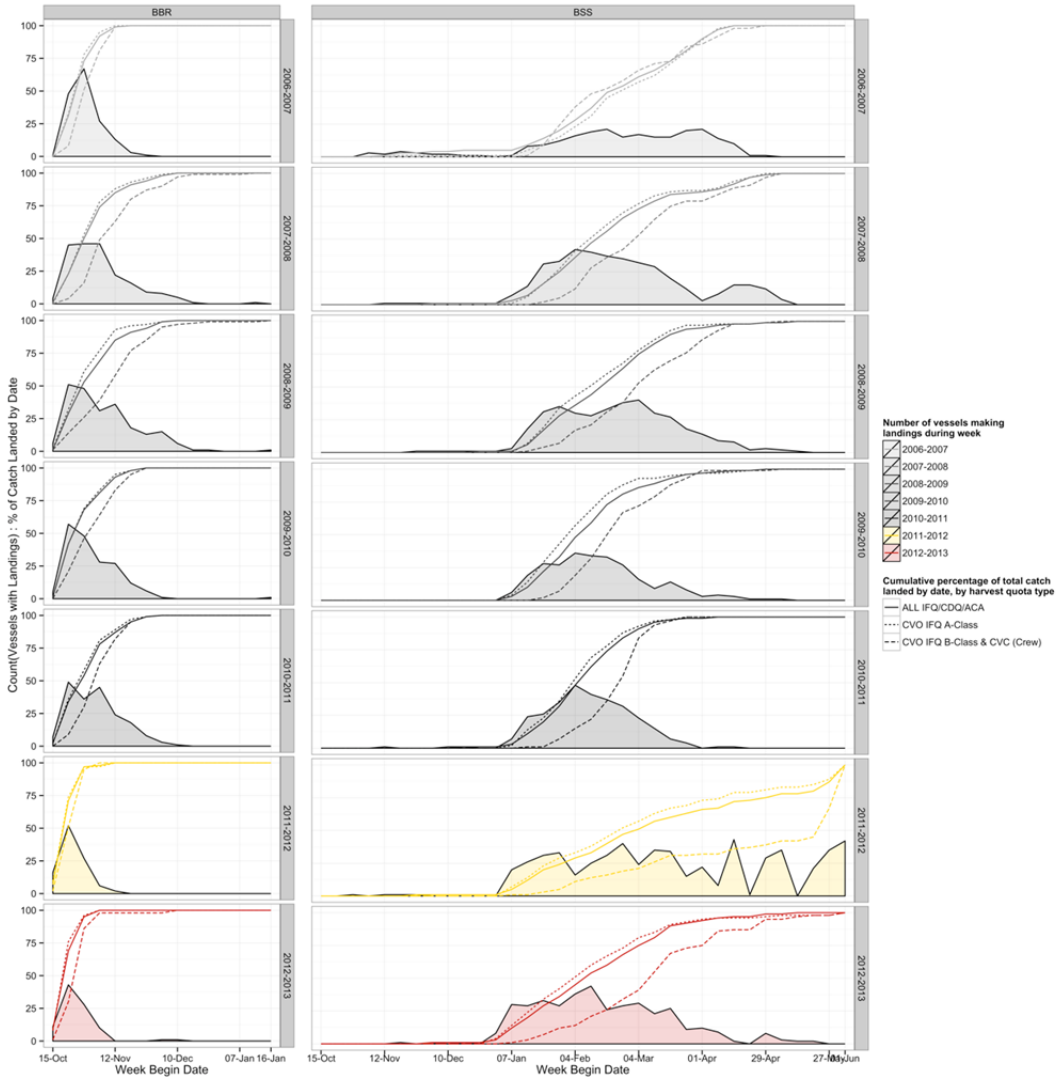
Figure 14: Harvest Vessel Activity Days, Selected Fisheries



Source: NMFS AFSC BSAI Crab Economic Data. Data shown by calendar year. Tabular data is presented in Table 23.

Data for PIK, SMB, and WAI fisheries not shown; gaps in time-series for AIG are suppressed for confidentiality, and gaps in BST time series reflect fishery closure years. 1998-2008 shows CV activity only; 2009 shows activity aggregated over CV and CP sectors. Total days active is calculated using days at sea reported in the 1998-2004 EDR and the sum of days fishing and days travelling and offloading in 2005 and later data. Median days are calculated over vessels participating in the fishery rather than all vessels in the BSAI crab fleet. Note that the 1998-2004 and 2005 and later figures for both total and median days active are not directly comparable, as the pre-2005 data do not include days spent queuing and offloading at processors. BST fishery was closed in 2001; reported days active in this fishery may reflect reporting error or days attributed to incidental catch of BST in another target fishery.

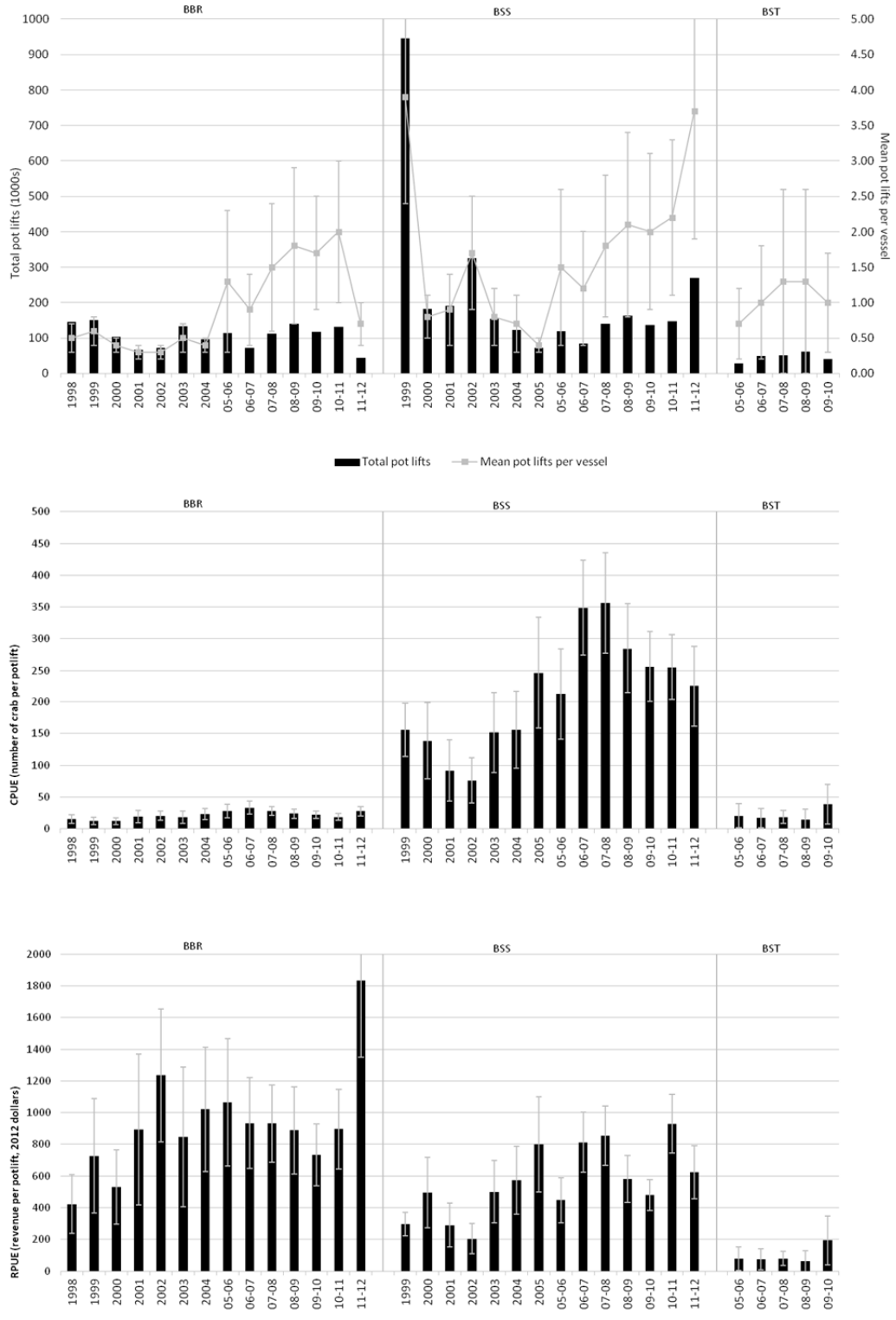
Figure 15: Crab vessel landing activity and cumulative catch, by quota share class and week of season: Bristol Bay red king and Bering Sea snow crab



Source: ADF&G fish tickets via eLandings. NMFS RAM Division, IFQ accounting database. Tabular data available in Table 51 and Table 52.

The vertical axis indicates both count of vessels and percentage of quota share, and horizontal axis shows the ending date of each week during the fishing season. The filled area in the graph indicates the count of vessels making landings each week. Plotted lines show the cumulative percentage of fishing quota expended on landings over the course of the season: ALL IFQ/CDQ/ACA (solid line) includes all IFQ and CDQ programs quota landed by catcher vessels and catcher/processors; IFQ A-Class (dotted line) includes CVO Class A IFQ quota permits only; CVO IFQ B-Class & CVC (Crew) (dashed line) includes CVO B Class IFQ and CVC (crew) IFQ. CDQ landings are not shown separately due to confidentiality restrictions. BSS seasons normally open October 15 and close May 31 of the next calendar year; the 2011/12 BSS season was extended until June 15 due to an extended period of sea ice cover which substantially delayed prosecution of the fishery.

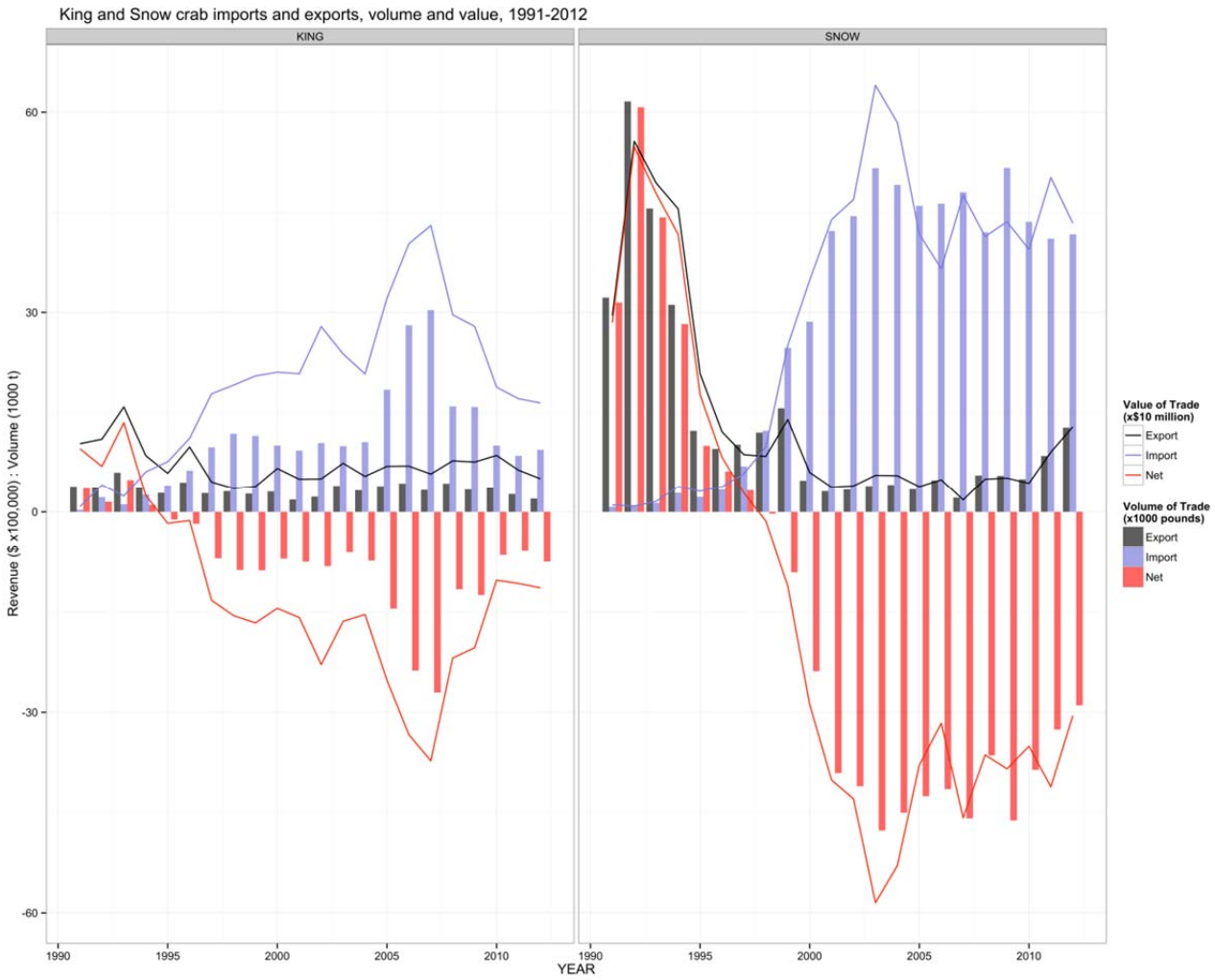
Figure 16: Pot lifts, mean CPUE, and mean RPUE by season, selected crab fisheries



Source: ADF&G fish tickets (August 2005 and later data via eLandings).

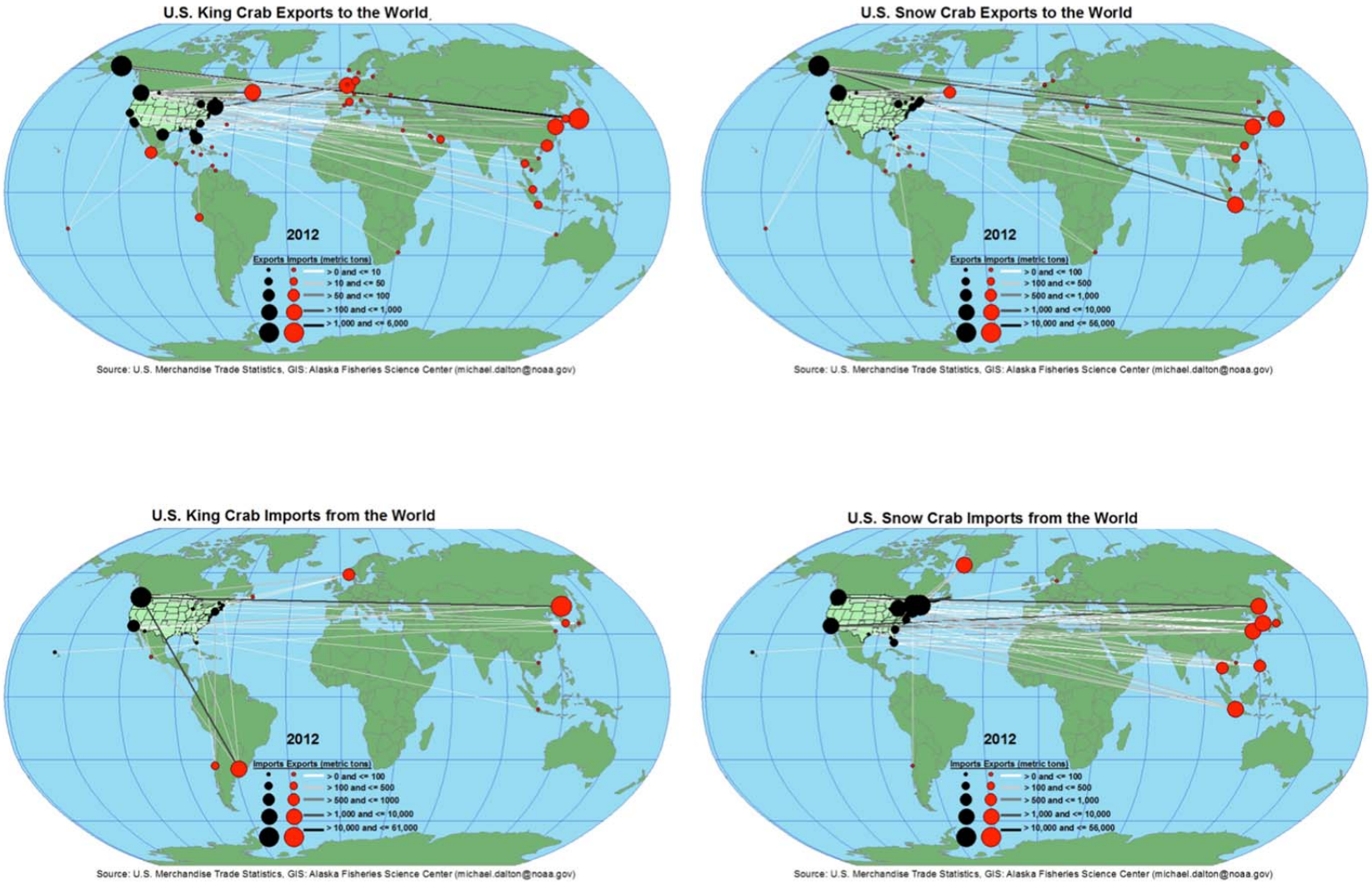
Error bars show one standard deviation from mean. CPUE = number of legal crab per potlift. RPUE = ex-vessel value of commercially sold crab per potlift, adjusted to 2010 dollars. Tabular data available in Table 53.

Figure 17: King and snow crab exports and imports by calendar year



Source: U.S. Foreign Census Bureau Foreign Trade Division, via NMFS Fisheries Statistics Division, U.S. Foreign Trade Database. Data available at http://www.st.nmfs.noaa.gov/st1/trade/; Tabular data shown in figure available in Table 54. Revenues are inflation-adjusted to 2012 equivalent dollars using the Producer Price Index for unprocessed and packaged fish. Imports and exports shown for TSUSA product codes 306144010 (frozen king crab) and 306144020 (frozen snow crab).

Figure 18: Volume of U.S. Imports and Exports of King and Snow Crab, by Country of Destination/Origin, 2012



Source: U.S. Merchandise Trade Statistics. Data show in figure available upon request from NOAA AFSC Economics and Social Science Research Program.

3 Catch-share Program Economic Performance Metrics

Catch share programs are a fishery management tool that allocates a secure share of the fishery resource to individual fishermen, fishing cooperatives, fishing communities, or other entities to harvest a fixed quantity of fish each year. Catch shares do not directly impact the total allowable catch (TAC) of each species, and are merely a mechanism to allocate the TAC across various individuals and user groups. The North Pacific region has been the most active region in the U.S. in developing catch share programs, and contains six of the 15 programs currently in operation throughout the U.S. These programs are the Western Alaska Community Development Quota (CDQ) (1992), Alaska Halibut and Sablefish IFQ (1995), American Fisheries Act (AFA) Pollock Cooperatives (1999), BSAI Crab Rationalization (2005), Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80, 2008), and the Central Gulf of Alaska (GOA) Rockfish Program (extended the Rockfish Pilot Program in place from 2007-2011 and was implemented in 2012). These programs account for approximately 75% of all North Pacific groundfish landings.

Catch share programs have a variety of designs which reflect unique circumstances in each fishery and stated goals of the program. In Alaska, these designs include individual fishing quota (IFQ) programs such as the Alaska Halibut and Sablefish IFQ program, cooperative programs such as AFA pollock, Amendment 80, and the Central GOA Rockfish Program, combined IFQ and cooperative programs such as the BSAI Crab Rationalization, as well as community allocation programs such as the CDQ program. There have been several stated goals for these programs, including: meeting conservation requirements, improving economic efficiency and/or flexibility, improving bycatch management, reducing excess capacity, eliminating derby fishing conditions, and improving safety at sea.

This section develops a consistent set of indicators to assess various dimensions of the economic performance of the IFQ component of the Crab Rationalization program[26]. These indicators can be grouped into three general categories: catch and landings, effort, and revenue. The catch and landings metrics are the ACL or quota level, whether the ACL or quota was exceeded, aggregate landings, the % of the quota that was utilized, and whether there is a share cap in place. The effort metrics are the number of active vessels, the number of entities holding share, and the season length. The revenue metrics are the aggregate revenue from catch share species, average prices of catch share species, the revenue per active vessel, and the Gini coefficient (which is a measure of revenue concentration among the active vessels).Tables 55 and 55 a-h present results for all metrics, with values reported in Table 55 summarizing results over all CR program fisheries, and Table 55 a-h providing results for individual crab fisheries through the 2012/13 crab season. In both cases, values for 2012/13 are preliminary pending completion of validation procedures for the most recent round of reporting of associated data sources. To avoid confusion in comparing this information to other tabular data presented in Section 2 of this report, it is important to note that the performance metrics presented in Table 55 and Table 55 a-h are reported in terms of crab season years (including a pre-rationalization baseline of values averaged over 1998/99, 2001/02, and 2004/5 crab season years), and the reported values for these metrics do not

[26] Metrics reported in the section are derived for the IFQ portion of the CR Program, excluding information pertaining to fishing and/or processing of CDQ or ACA program allocations. Similar indicators are presented in the Groundfish SAFE Economic Status Report (NPFMC, 2013) for the four groundfish catch share programs: the sablefish IFQ program (excluding halibut, as it is managed by the International Pacific Halibut Commission), the AFA pollock cooperatives program, the Amendment 80 program, and the central GOA Rockfish Program as well as one non-catch share program, the Bering Sea Freezer Longline Catcher/Processors.

include production or activity associated with the Community Development Program quota (CDQ) or Adak Community Allocation (ACA) components of the rationalized crab fisheries.
Both IFQ allocations and commercial landings increased overall for 2011/2012, to 94.56 and 93.35 million pounds, respectively, reflecting the increase in Bering Sea snow crab allowable catch to approximately 80 million pounds (64 percent greater than the previous season). This was concurrent with the sharp decrease in 2011/2012 Bristol Bay red king crab allowable catch, as noted above. Deadloss across all IFQ fisheries has fluctuated between 0.46 and 0.7 million pounds during the period since rationalization, from an average of 1.08 million pounds during the baseline period. Deadloss increased somewhat during the most recent 2011/2012 snow crab fishery, which was extended an additional two weeks beyond the usual season end date to June 15 due to an extended period of sea ice coverage and the resulting delay of the fishery.

Management History

The Bering Sea and Aleutian Islands crab fisheries comprise large, industrial vessels using pot gear and a large-scale onshore processing sector. The fishery management plan (FMP) governing these fisheries, the Bering Sea and Aleutian Islands king and Tanner Crab FMP, was approved by the Secretary of Commerce on June 2, 1989. The FMP establishes a State/Federal cooperative management regime that defers crab management to the State of Alaska with Federal oversight. State regulations are subject to the provisions of the FMP, including its goals and objectives, the Magnuson-Stevens Act, the National Standards and other applicable federal laws. The FMP has been amended several times since its implementation to limit access to the fisheries, establish a vessel license limitation program, define essential fish habitat and associated protection measures, amongst other topics.

Managing capacity in these fisheries has been a challenge since the inception of the FMP. Overcapacity in the Bering Sea and Aleutian Islands (BSAI) Crab Fishery required season limitations to control catch levels, with seasons in some fisheries only lasting five days. The resulting “derby fishery” led to unsafe fishing conditions and numerous fatalities for crew, particularly in winter months when most crab fisheries are prosecuted. Harvesting and processing capacity expanded to accommodate highly abbreviated seasons, leading to further economic inefficiencies.

To address overcapacity, the North Pacific Fishery Management Council took a series of actions to limit access to these resources, including a moratorium on new vessels entering the fishery (1996); a vessel license limitation program (2000); a capacity reduction (buyback) program (2004); and, in 2005, the BSAI Crab Rationalization Program. The BSAI Crab Rationalization Program includes most king and Tanner crab fisheries in the Bering Sea and Aleutian Islands. The BSAI Crab Rationalization Program applies to the following Bering Sea and Aleutian Islands crab fisheries: Bristol Bay red king crab, Western Aleutian Islands (Adak) golden king crab, Eastern Aleutian Islands golden king crab, Western Aleutian Islands red king crab, Pribilof Islands red and blue king crab, St. Matthew Island blue king crab, Bering Sea snow crab, Eastern Bering Sea Tanner crab and Western Bering Sea Tanner crab.

Prior to implementation of the BSAI Crab Rationalization Program, the Bering Sea Tanner Crab fishery was closed to fishing due to low stock abundance. Two fisheries (Western Aleutian Islands red king crab and Pribilof Island red and blue king crab) have been closed to fishing throughout the duration of the Crab Rationalization Program. The St. Matthew Island blue king crab fishery was closed for four of the six years of the IFQ Program. In the second year of the IFQ Program and following a stock assessment, the Bering Sea Tanner Crab fishery was split into the Western and Eastern Bering Sea Tanner Crab fisheries.

The Western Bering Sea Tanner crab fishery was closed for two of the five years, while the Eastern Bering Sea Tanner Crab fishery was closed for one year since this split during the IFQ Program.

Program Objectives

The North Pacific Fishery Management Council developed the BSAI Crab Rationalization Program over a six-year period. In 2005, the BSAI Crab Rationalization Program was implemented to address the race to harvest, high bycatch and discard mortality, product quality issues and balance the interests of those who depend on crab fisheries. The BSAI Crab Rationalization Program includes share allocations to harvesters and processors. Processor quota was incorporated to preserve the viability of processing facilities in dependent communities and particularly to maintain competitive conditions in ex-vessel markets. Community interests are protected by Community Development Quota (CDQ) and Adak Community allocations, and regional landings and processing requirements, as well as several community protection measures. The performance indicator information provided herein refers only to the IFQ component of the BSAI Crab Rationalization Program.

Key Events/Features

King and Tanner crab are harvested in nine distinct fisheries that are defined by a combination of species and spatial areas. Uniquely, the Council was granted special Congressional authority to allocate processor quota in addition to harvesting quota. IFQ privileges are delineated as quota shares (that provide the holder a percentage of the IFQ allocation), which represent the annual harvestable pounds (derived from the shares) to harvesters, which must be matched with individual processor quota when making a delivery to a processor. The initial allocation issued harvest shares to license limitation program (LLP) crab license holders and crew who were state permit holders (typically vessel captains) based on creditable historical landings. Processor shares were issued to processors with specific history in the crab fisheries. Harvest quota share and processor quota share are transferable, subject to limitations. Shares issued to LLP crab permit holders comprise 97% of all harvesting quota share; the remaining 3% were issued as captain/crew quota share. Both harvest and processor quota share are split into catcher vessel shares and catcher/processor shares. Annual individual processing quota is issued in the amounts matched to the amounts of catcher vessel LLP harvest quota for the nine fisheries.

This program requires reporting of some economic cost and revenue data from vessel owners. Processors also submit data on crew costs. These data were intended to help determine if the program meets Council objectives over time, including the use of processor quota share.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The Magnuson-Stevens Act also allows for additional collections to cover a loan program that provides assistance for quota share purchase by new entrants and small vessel owners. These fees can be a maximum of 3% of the ex-vessel value of the program species. During the Baseline Period, the cost recovery program was not applicable to the Crab Fishery. The cost recovery fee for the Crab Program varies each year because by regulation, the fee percentage is computed at the start of the fishing season, using prior year costs (Figure 19). This makes it possible to have years in which no fees are collected, as was the case in 2009/10. In 2010/11, $6.7 million was collected for the cost recovery program, approximately 2.7% of IFQ Crab revenue.

The purpose of excessive quota share caps is to prevent quota holders from controlling production (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. The BSAI Crab Rationalization Program has share caps in place for all harvester and processor quota share holders. The excessive share cap varies from 1-20% of initial harvest quota share based on fishery or area, quota type, and entity type for owner quota share and from 2-20% of initial harvest quota share for crew quota share. Processors may not hold or use more than 30% of processor shares in each fishery.
The management year begins July 1 and ends June 30 of the following year. Annual data are for the fishing year (e.g., the 2006/07 fishing year). Crab quota refers to all of the IFQ fisheries combined.

Recent Trends

Baseline Period years are defined as the average of 1998/99, 2001/02, and 2004/05 fishing seasons rather than three consecutive years preceding program implementation. This is based on the North Pacific Fishery Management Council's specifications for reference years for the BSAI Crab Rationalization Program Review.

Catch and Landings

Upon implementation of the BSAI Crab IFQ Program, the IFQ component of the Bering Sea and Aleutian Islands crab allowable catch was reduced by 42% to 57 million pounds in 2005/06, compared to the Baseline Period reflecting changes in allowable catch based upon a stock assessment (Figure 20). The quota was subsequently raised to 85 million pounds in 2007/08. The crab quota was decreased again in 2009/10 based upon stock assessments. Coincident with the decreased quota, landings of IFQ crab decreased by 43% to 55 million pounds in the first year of the program compared to the Baseline Period. Landings increased by 54% to 81 million pounds in 2007/08, compared to the previous year (53 million pounds). Following the mandated decrease in quota in 2009/10, landings decreased by 17% to 64 million pounds, compared to the previous year. Landings increased for 2010/11 to 68 million pounds Total IFQ program allocations increased by 37% to 95 million pounds for 2011/2012, and declined for the most recent season to 74 million pounds (-22%) for 2012/2013.

Prior to the catch share program, harvest limits were exceeded for Bristol Bay Red king crab, Bering Sea snow crab, and Aleutian Islands golden king crab fisheries. Since the implementation of the catch share program, harvest limits have not been exceeded and utilization of the available Crab IFQ quota has fluctuated from 95% to 99% (Figure 21).

Effort

During the first year of the catch share program, 491 entities were eligible to hold quota share to fish in a crab fishery (). In the first three years of the catch share program, on average there was 1.4% annual decrease in the number of entities holding quota share (from 491 entities to 470 entities). Subsequently, the number of entities holding share increased to 478 entities in 2008/09, 481 entities in 2009/10 , 489 entities in 2010/11, 498 entities in 2011/12, and 502 entities in 2012/13, an increase of 7% from the low of 470.

Rapid consolidation of the fishing fleet upon implementation of the IFQ Program resulted in a decrease in active vessels by 61% (101 vessels in 2005/06) compared to the Baseline Period (262 vessels; Figure

23). It is important to note that in preparation for the implementation of the Crab Program, the capacity reduction program implemented in 2004 removed approximately 24 vessels from the fishery. The number of vessels active in the crab program decreased to 88 vessels in 2008/09, and 78 vessels in 2010/11, and has remained at that level, approximately.

Trip information is not available for the Baseline Period. Initially, crab IFQ Program fishermen took 28% fewer trips in 2006/07 (426 trips) compared to 2005/06 (594 trips; Figure 24). The number of trips taken in these fisheries increased 50% in the following year (2007/08) compared to the previous period and then trended downward, declining 14% to 552 trips in 2010/11, increasing to 754 in 2011/12, and declining to 540 in 2012/13.

The BSAI Crab Rationalization Program comprises nine distinct fisheries that are defined by a combination of species and spatial areas. Season length varies in duration, timing, and the fleet's utilization of these resources. The number of days when fishing is allowed in each of these fisheries is displayed below in Table 8. Note that in the 2006/2007 fishing season, the Bering Sea Tanner Crab Fishery was divided into the Eastern Bering Sea Tanner Crab Fishery and the Western Bering Sea Tanner Crab Fishery to reflect differences in stock dynamics. In general, the entire season length is routinely not used due to fishing conditions, sea ice conditions, market forces, processor capacity, processor and harvester interest, and the costs of sustaining remote operations in the Bering Sea.

A season length index was constructed to account for the differences in season length, the fleet's utilization of these seasons and to construct an indicator that accounts for change over time in the active fishing season length across multiple fisheries. The season length index represents the proportion of days when fishing actually occurred compared to the maximum number of days when fishing was allowed. Using this index provides an indication of the temporal utilization of the crab resource and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple crab species to achieve an overall program season length. During the Baseline Period, some areas were open to fishing for crab species for as little as 38 days and the season length index is 0.12. Upon implementation of the IFQ Program, the crab fisheries were open for 192 days, on average. With the exception of 2006/07 (0.6), the season length index was 0.74 for the next three fishing seasons. Despite the fact that the regulatory season length was around 200 days in 2009/10 and 2010/11, the season length index dropped to 0.58 (2009/10) and 0.53 (2010/11; Figure 24).

Based on stock assessments, several of the Bering Sea and Aleutian Islands crab fisheries have been closed to directed fishing for one or more years following implementation of the Catch Share Program. As of the 2012/13 season, the Pribilof Island red and blue king crab and Western Aleutian Islands red king crab fisheries have been closed to fishing for the duration of the Catch Share Program and were most recently open in 2004/05. The St. Matthew Island blue king crab fishery was closed for four seasons of the BSAI Crab Rationalization Program, but has been open since the 2009/2010 season. The Western and Eastern Bering Sea Tanner crab fisheries have been closed to fishing since the beginning of the 2009/10 fishing season, but have been opened for the 2013/14 season (ongoing). In addition, the Bering Sea Tanner crab fishery was closed for all three seasons of the Baseline Period (Table 55c). As noted earlier, fishery closures are not a consequence of the catch share program, but rather reflect management decisions based upon biological trends and fluctuations that would have occurred without the presence of a catch share program.

Revenue - All revenue and cost recovery data have been adjusted to 2012 equivalent U.S. dollar value.

The total allowable catch over all fisheries included in the IFQ Program was reduced during the first season of implementation and, accordingly, IFQ Program crab revenue was reduced by 26% in 2005/06 ($156 million) compared to the Baseline Period ($225 million; Figure). When the quota was increased in 2007/08, IFQ Program crab revenue increased 51% relative to the first year of the program. Similarly, IFQ Program crab revenue decreased by 32% to $154 million in 2009/10 from 2007/08 revenue as the quota declined. Despite these fluctuations, in 2010/11, IFQ crab revenue was 76% greater ($255 million) compared to the previous year ($154 million) due primarily to increased prices. Revenue increased to 11% to $283 million in 2011/12 due to a substantial increase in stock abundance reflected in increased catch allocation, before decreasing by 22% for 2012/13 to $210 million.

A portion of the fleet participating in the IFQ Program lease and land crab in Community Development Quota (CDQ) allocation programs on the same trips in which IFQ Program crab are caught and landed. These other landings contribute to overall revenue for associated vessel and crews. Non-IFQ crab revenue (not available for the baseline period) initially decreased by 39% in 2006/07 to $10 million from $17 million in 2005/06. Between 2006/07 and 2009/10, non-IFQ crab revenue decreased by 15% from $11.4 million in 2006/07 to $10.6 million in 2009/10. by 2010/11, non-IFQ crab revenue increased by 48% from the previous year to $12 million. Non-IFQ crab revenue is produced almost exclusively from landings of CDQ crab quota, which is issued as 10% of the allowable catch compared to 90% issued to IFQ; consequently, non-IFQ revenues are of a similar proportion, ranging from 5-10% of total revenue (Figure 26). Variation in the revenue proportion is primarily a function of whether CDQ crab pounds were used on the same trips as IFQ Program crab pounds, rather than vessels' taking exclusive CDQ crab trips, which are not accounted for in this report.
Table 55 presents the weighted average price calculated over all species of crab in the CR program, and reported separately for each species in Table 55a-h. On average, price per pound of IFQ Program crab species initially declined by 11% in the first year of the IFQ Program, from $3.05 to $2.85 during the Baseline Period (Figure 134). On average, prices varied slightly between $2.74 to $2.81 during 2006/07 to 2008/09 before more volatile changes in 2009/10, dropping by 13% to $2.43 per pound, increasing by 55% the following season to $376, and dropping 19% in 2011/12 to $3.04 and again by 6% to $2.86 in 2012/13.

IFQ Program crab revenue per vessel increased by 85% in 2005/06, to $1.55 million per vessel compared to $0.84 million on average during Baseline Period due to the reduced number of vessels and in spite of the reduced quota (Figure 28). IFQ Program crab revenue per vessel continued to increase by 67% to $2.6 million in 2007/08 compared to 2005/06. However, revenue per vessel fell the following two years, and in 2009/10 IFQ Program crab revenue per vessel decreased by 19% to $2.0 million from $2.5 million in 2007/08. IFQ crab revenue per vessel increased by 65% to $3.3 million in 2010/11 compared to the previous year.

IFQ Program crab revenue per trip increased by 31% to $340,000 in 2006/07 compared to $260,000 in 2005/06 (Figure 136). Revenue per trip increased by 6% in the following year (2007/08), declined 25% over the two following years to $300,000. Revenue per trip increased 53% in 2010/11 to $460,000, and declined by 17% to $380,000 in 2011/12, and $390,000 per trip in 2012/13.

Figure 19: Cost recovery fees (inflation-adjusted 2012 dollars) collected for the IFQ Crab portion of the BSAI Crab Rationalization Program

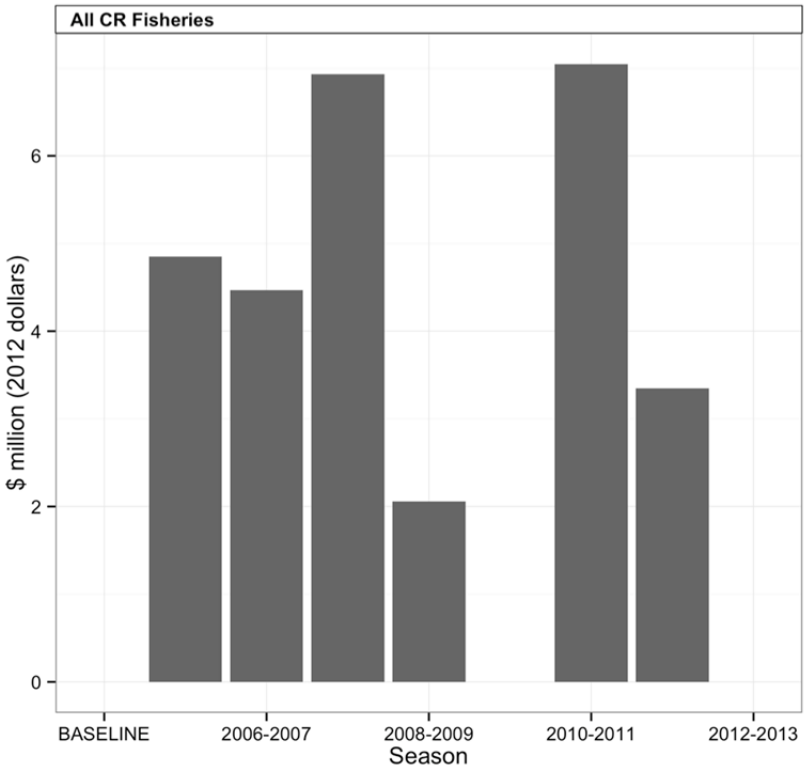


Figure 20: IFQ Crab quota and landings in the BSAI Crab Rationalization Program

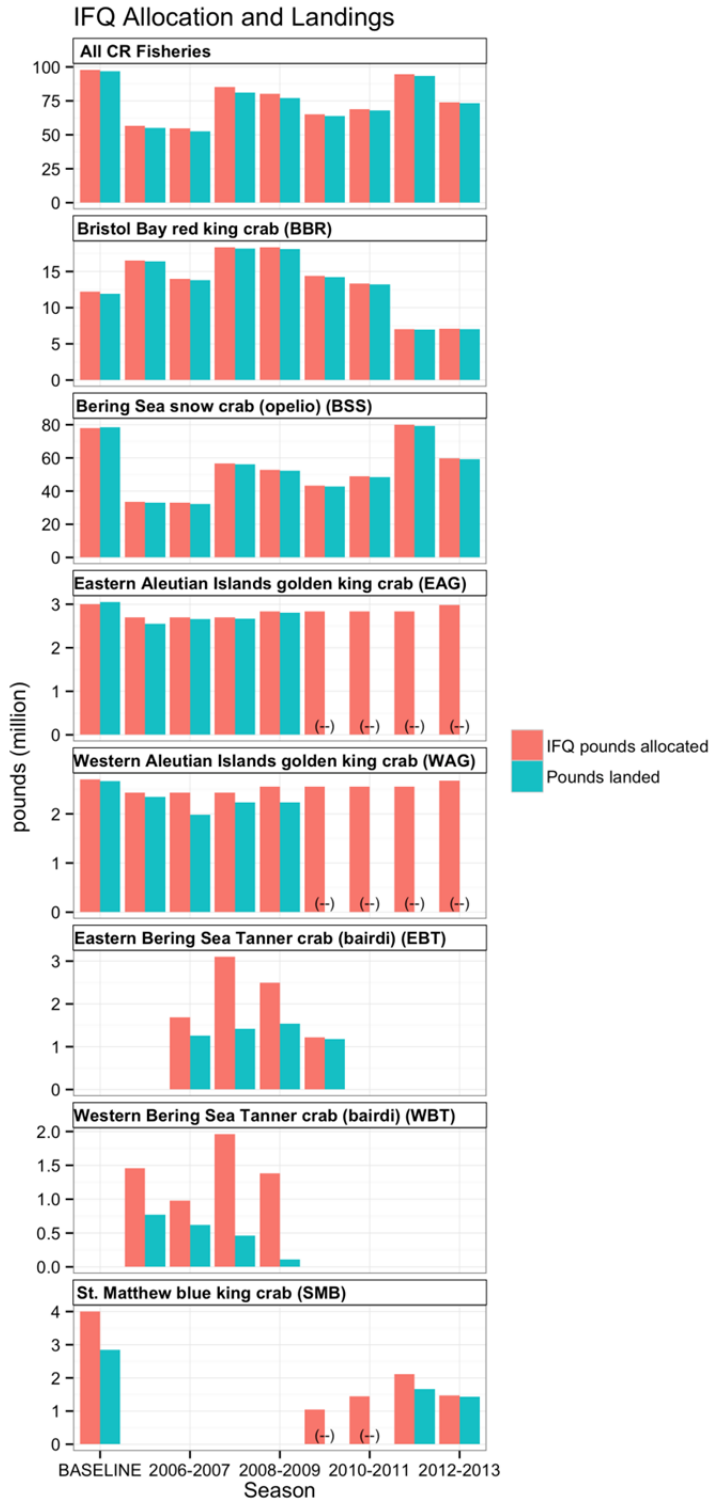


Figure 21: Utilization of available IFQ crab quota in the BSAI Crab Rationalization Program

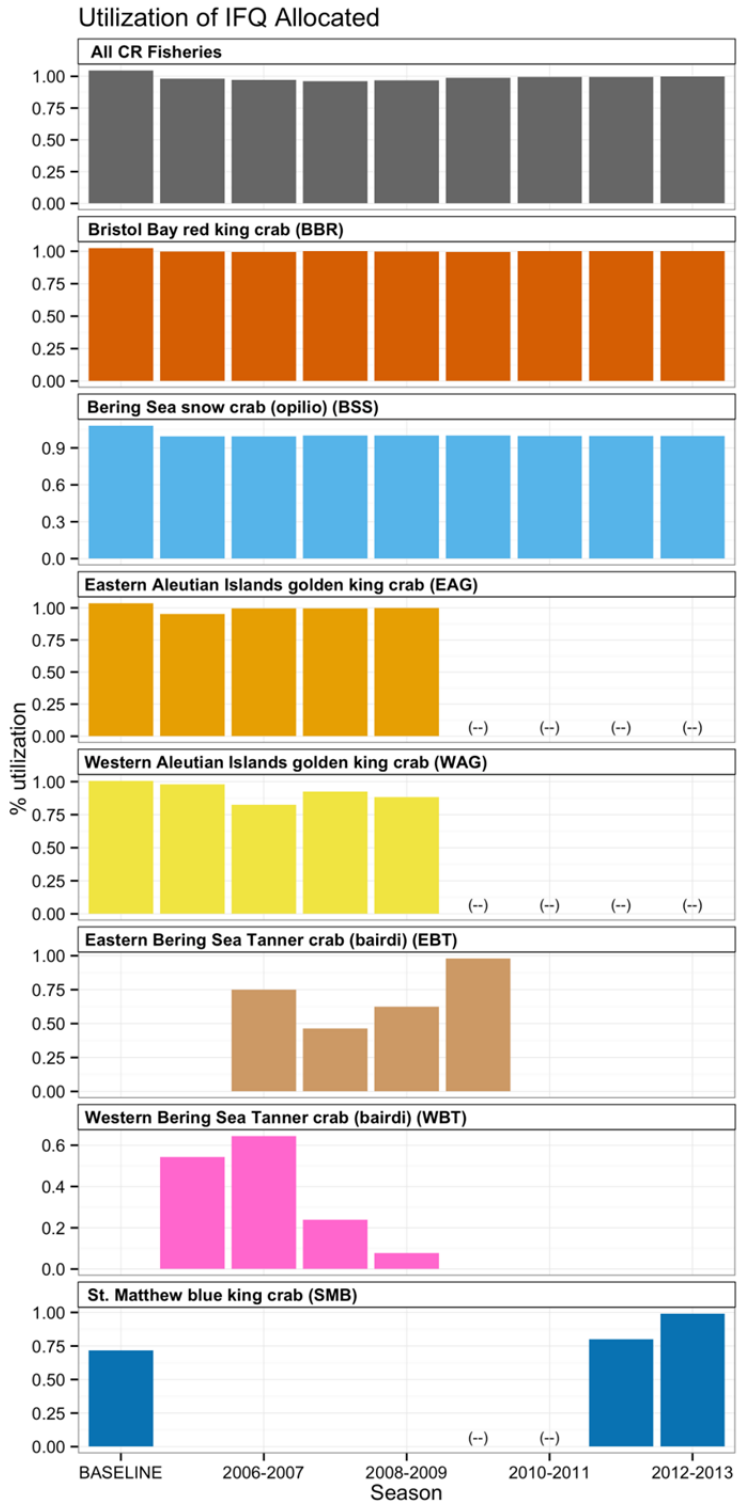


Figure 22: Number of entities holding IFQ crab share in the BSAI Crab Rationalization Program

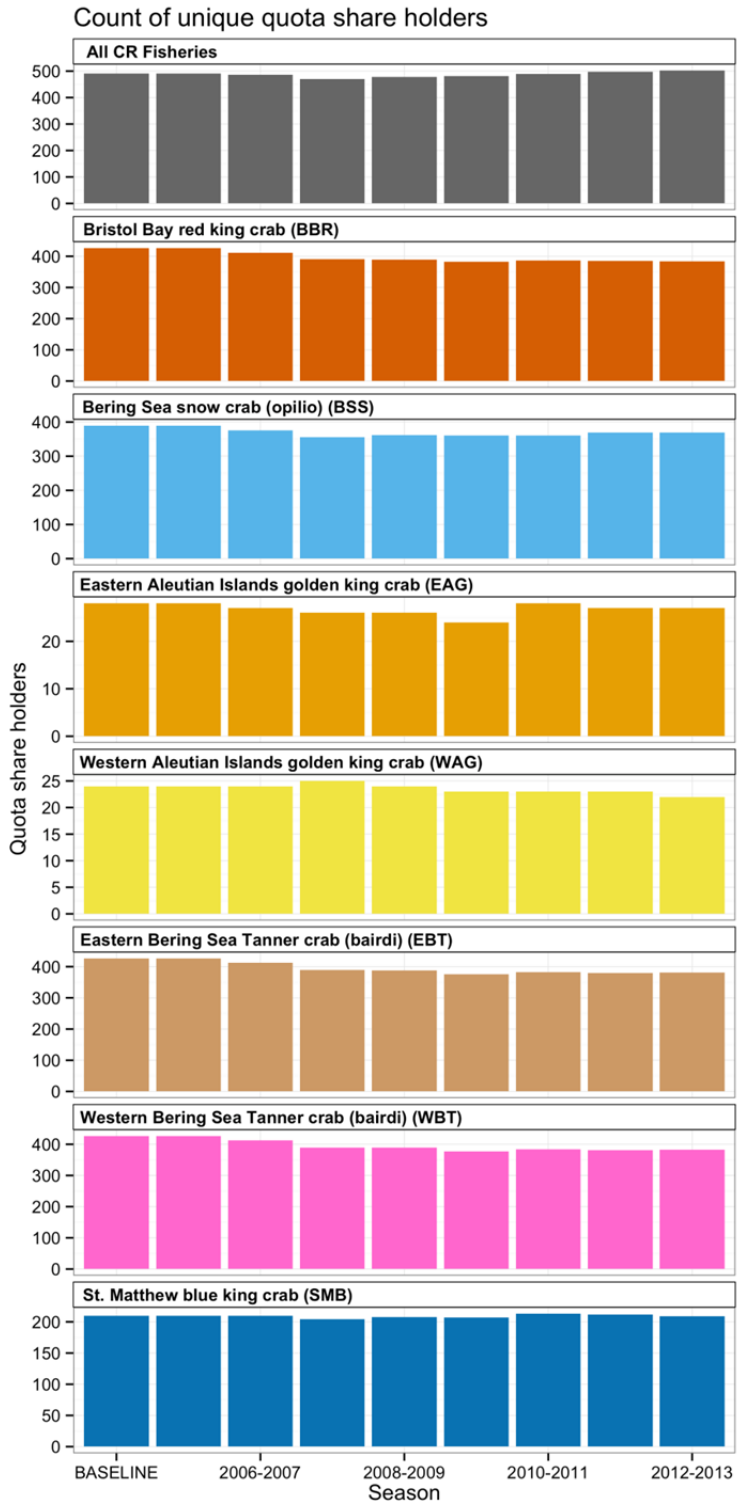


Figure 23: Active vessels fishing IFQ Crab quota in the BSAI Crab Rationalization Program

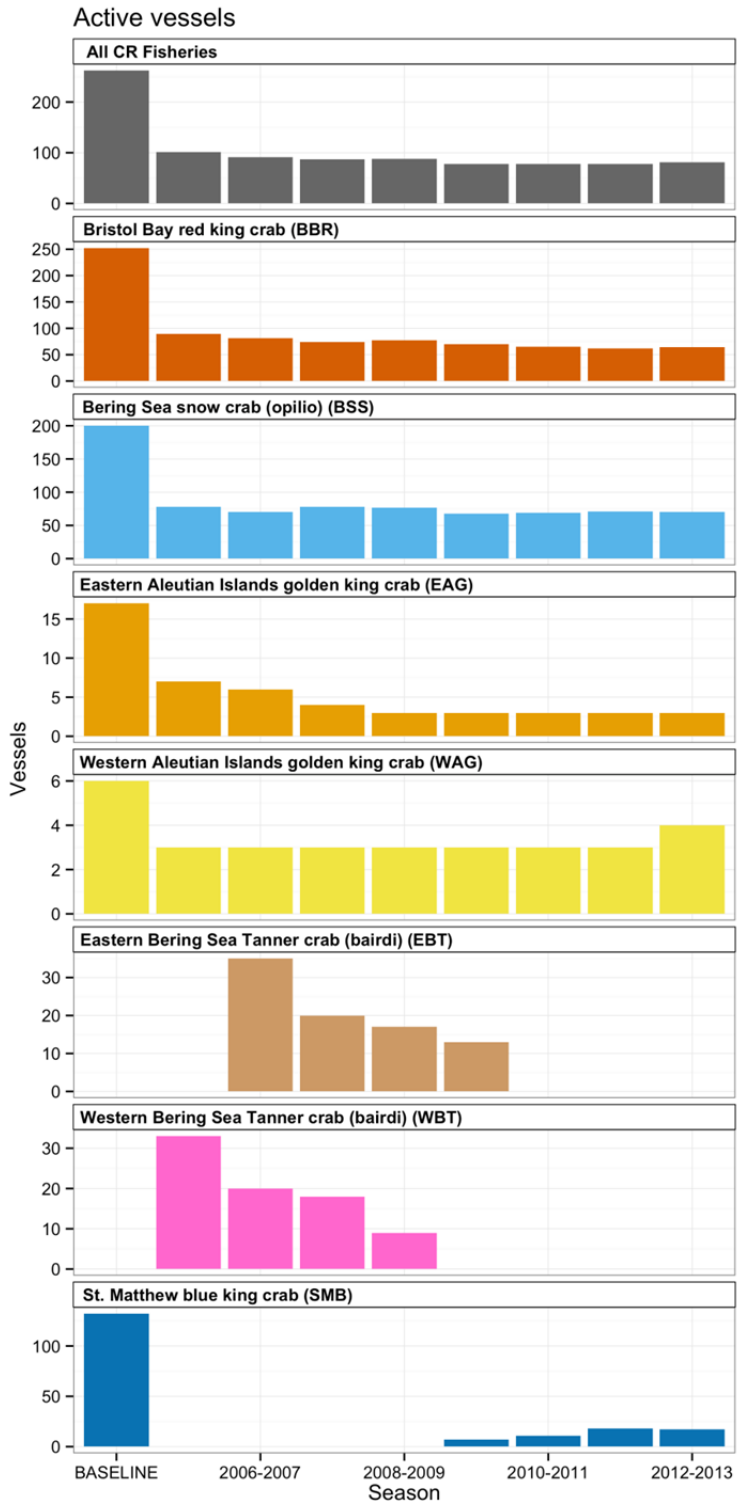


Figure 24: Number of trips harvesting IFQ Crab in the BSAI Crab Rationalization Program

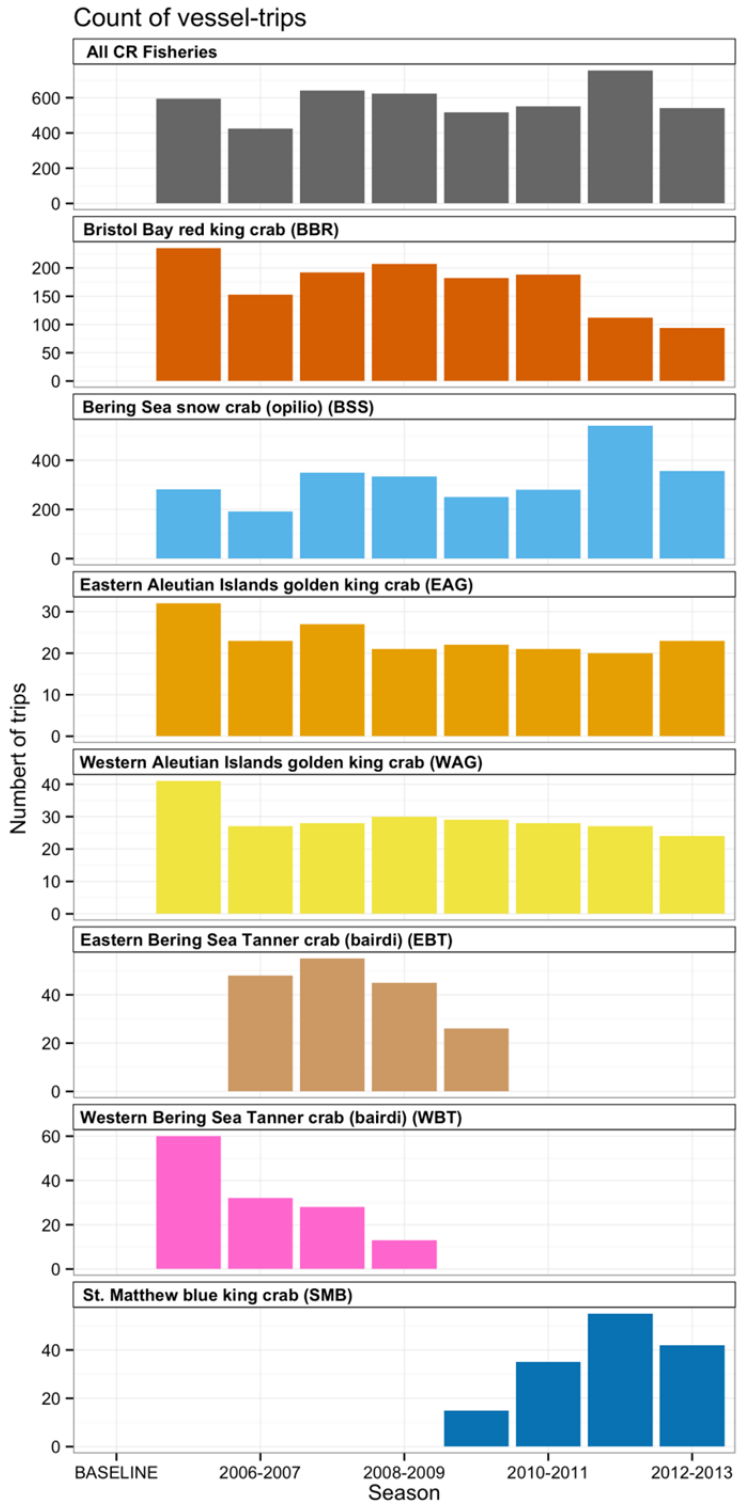


Figure 25: Season lengths in CR Crab Fisheries

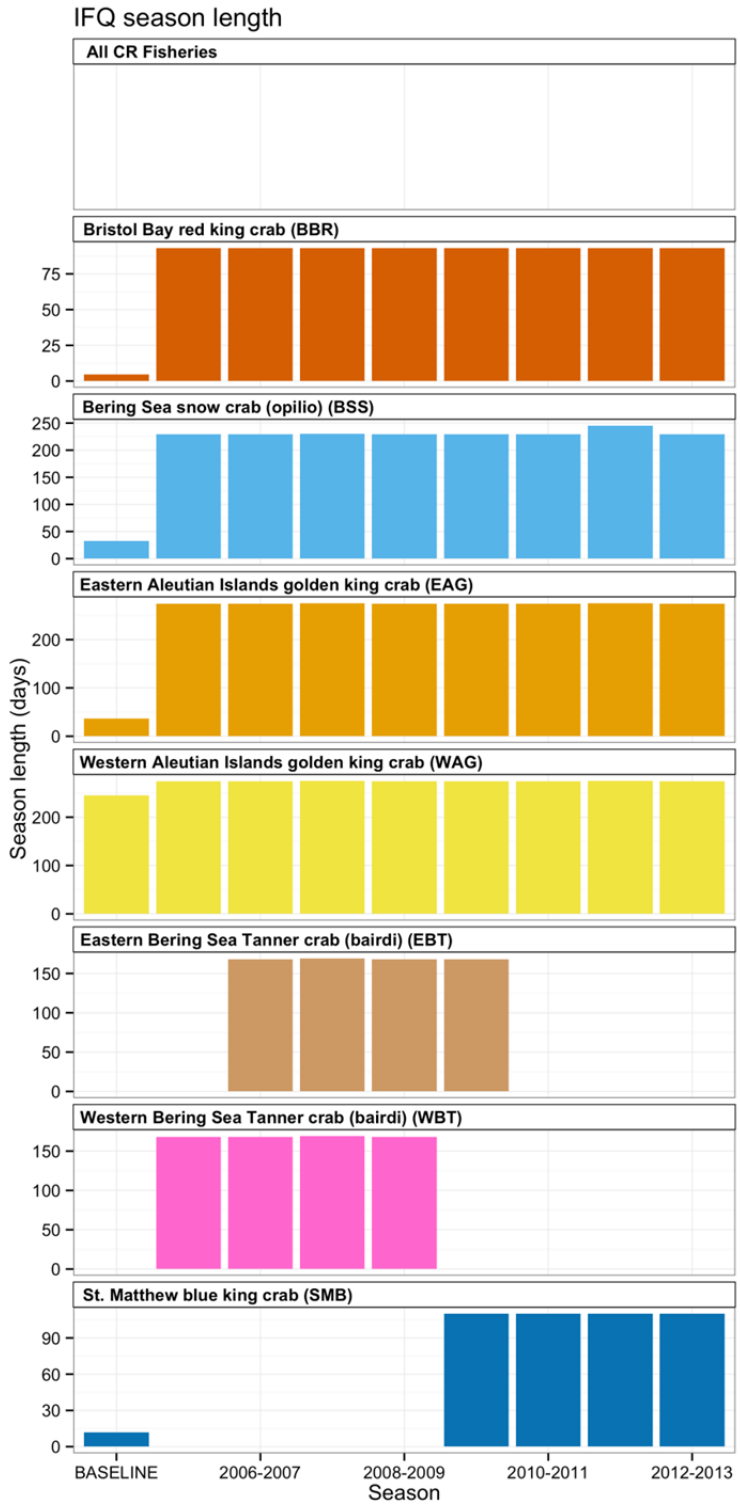


Figure 26: Total IFQ-crab and non-IFQ-crab landings revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the BSAI Crab Rationalization Program

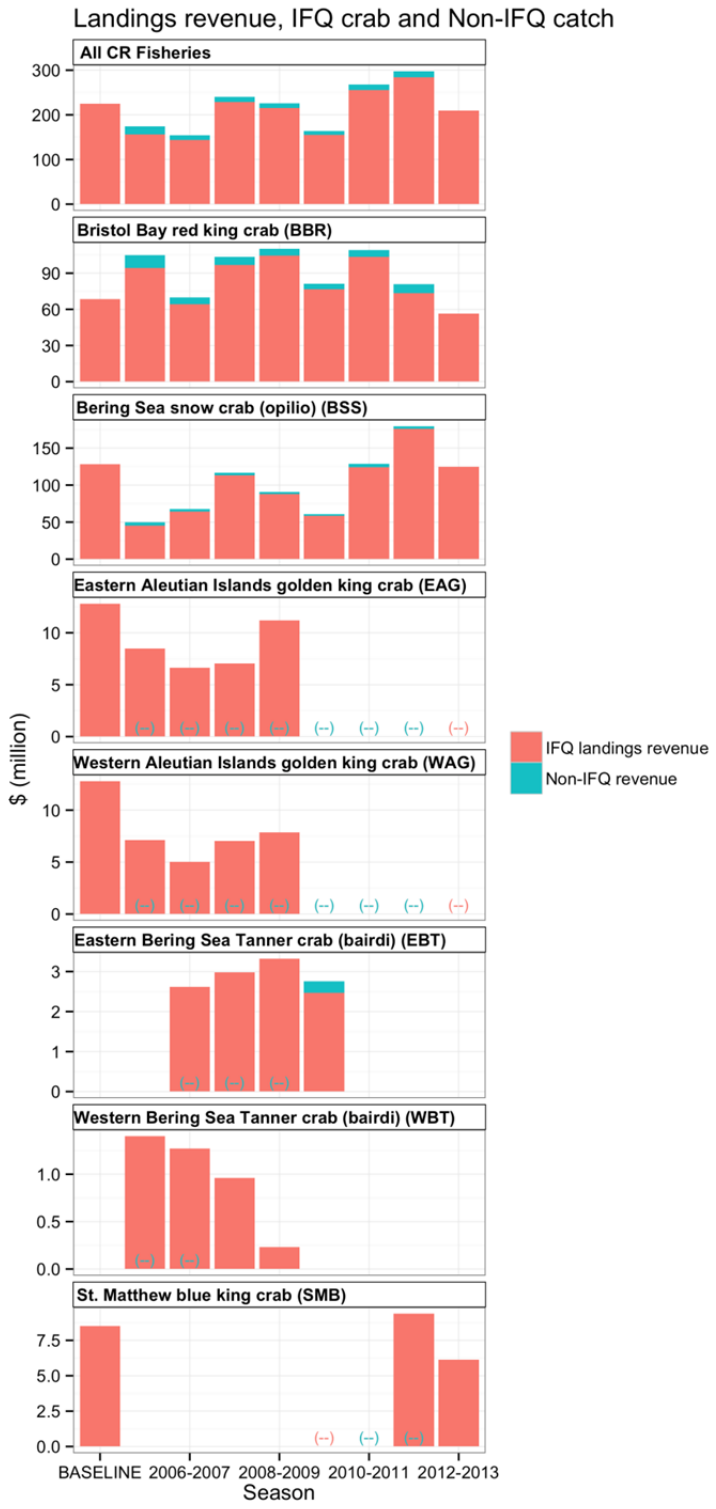


Figure 27: Average combined IFQ crab price per pound (inflation-adjusted 2012 dollars) in the BSAI Crab Rationalization Program

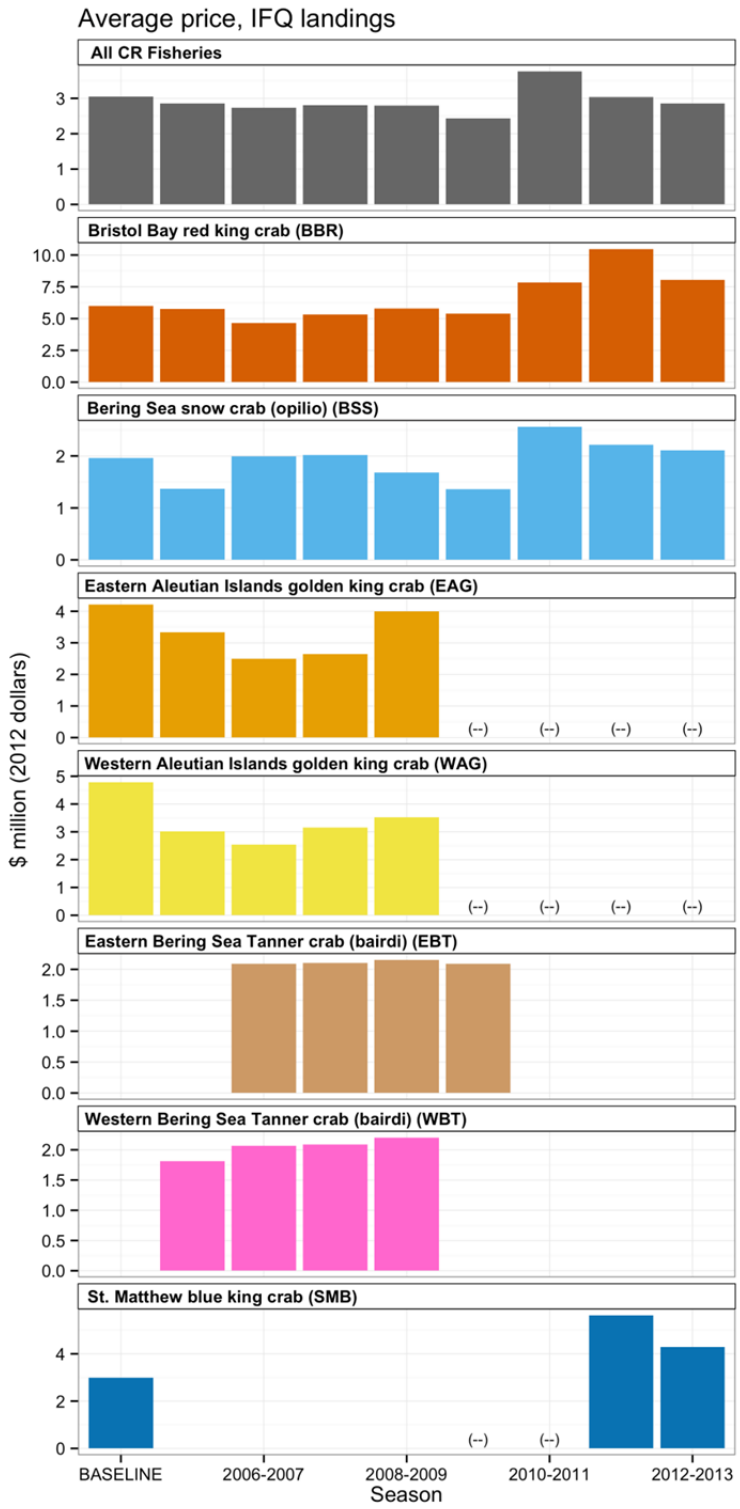


Figure 28: IFQ crab revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the BSAI Crab Rationalization Program

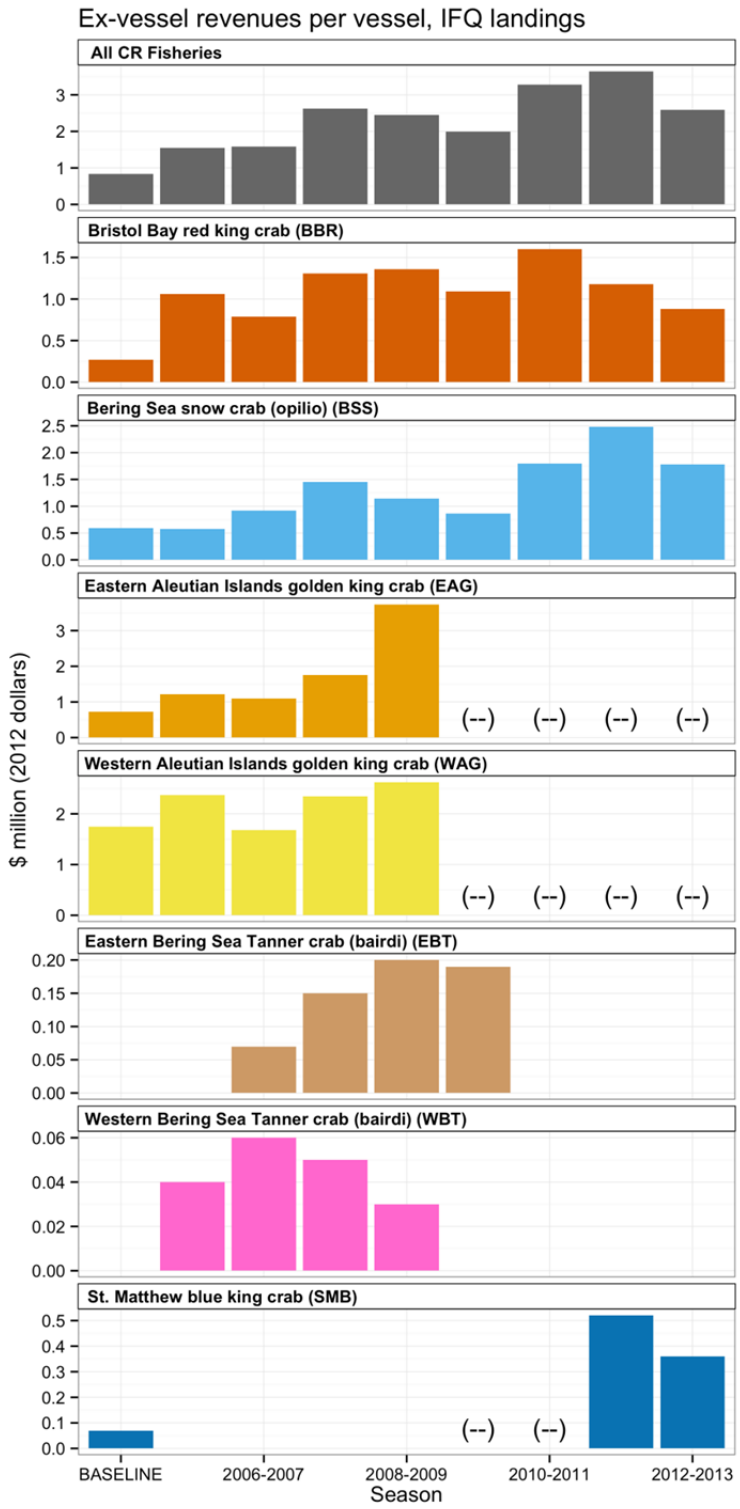
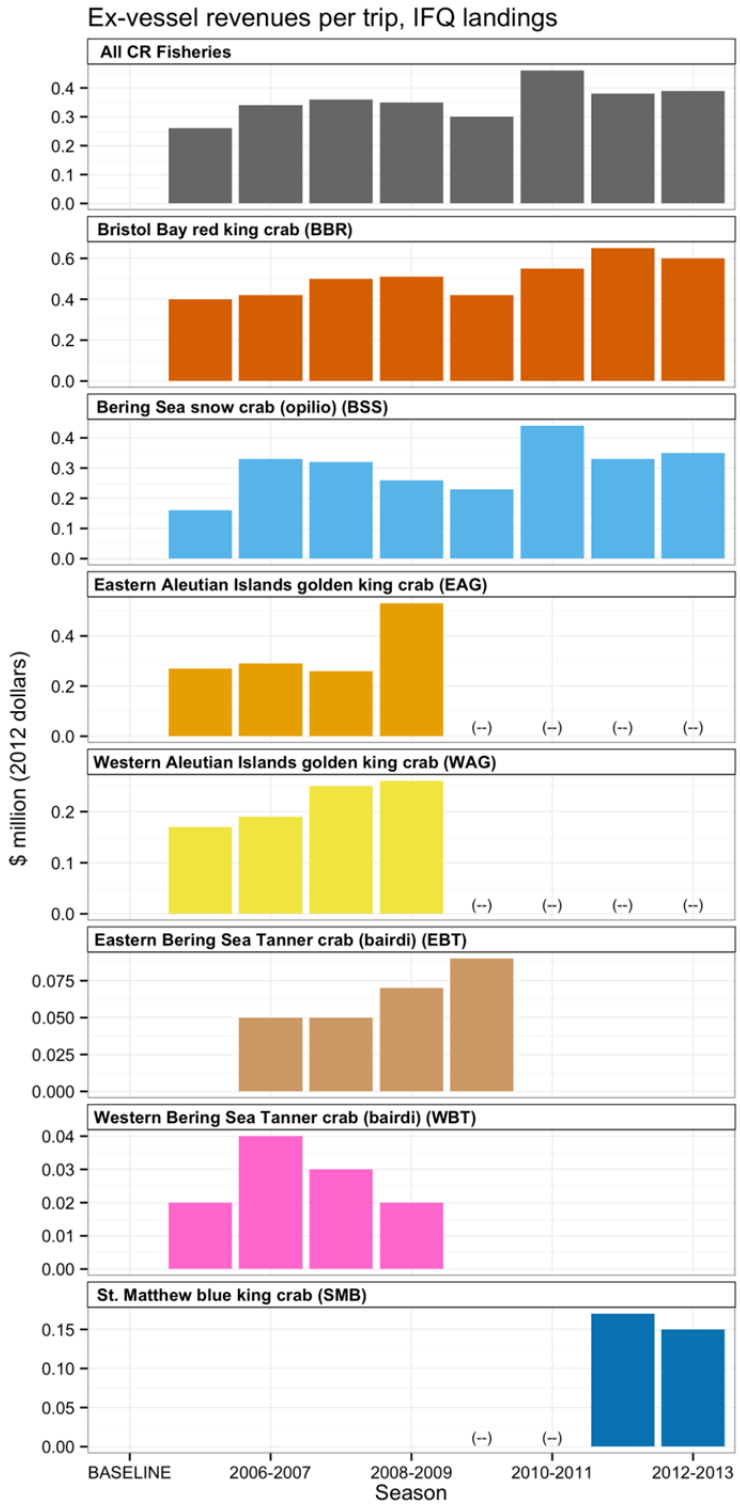


Figure 29: IFQ Crab revenue per trip



4 Price and Revenue Forecasts for 2013

As described in Section 1 of this report, calendar year 2012 data is the most current information available from primary economic data sources for Alaska fisheries; annual releases of most data sources for a given calendar year used in preparation of economic status indicators presented in Sections 2 and 3 do not typically occur before June of the following year, or as late as November for EDR data. As such, most data for 2013 fisheries will not be available until late 2014. To provide more current information for this report, preliminary estimates of 2013 production and price variables are produced using forecasts of wholesale price for AIG, BBR, and BSS fisheries, extending the econometric model framework developed previously for the Council's analysis for Amendment 38 (NMFS, 2011). The forecast analysis uses vector autoregression (VAR) time-series methods to model historical data series (1991-2012) of wholesale prices for Alaska red- and golden king crab and snow crab from Commercial Operators Annual Report (COAR), and U.S. import- and export- volume and price series for king and snow crab from the U.S. Merchandise Trade Statistics to estimate median and 90% confidence intervals for Alaska crab wholesale market prices. To improve the precision of near-term forecasts, i.e., estimation of Alaska crab wholesale prices established during early 2013 for which COAR data are not yet available, the analysis leverages import/export trade data published up to a year in advance of Alaska-specific data sources.

A detailed description of the analytical methodology and model development is provided in Dalton (2008), and documentation of model selection and estimation results for price forecasts used in this report are provided in Appendix A. Price forecast intervals for 2013 AIG, BBR, and BSS fisheries are shown in Table 56, with estimates of ex-vessel and finished wholesale volume and revenue to-date for 2012/13 season AIG and BSS landings after January 1 of this year. Ex-vessel price estimates were derived using the wholesale price forecasts and conversion factors based on the average ratio of ex-vessel price to first-wholesale price observed over the 2007-2011 period. In-season commercial landings data for AIG and BSS fisheries to-date, combined with price forecasts and average product recovery rates observed over 2007-2011 were used to estimate production volume and revenue to-date in the ex-vessel and processing sectors for these fisheries. All data used in these estimations reflect final ex-vessel settlement prices, such that the price and revenue estimates shown in Table 56 represent final settlement values.

Wholesale price for golden king crab produced and sold in the AIG fishery during 2013 is estimated at $10.24, with a 90% confidence forecast interval of $9.17-$11.34, substantially higher than the average price of $8.37 observed for 2012. Wholesale price for snow crab produced and sold in the BSS fishery during 2013 is estimated at $5.48, with a 90% confidence interval of $5.18-$5.78. The Bristol Bay red king crab price for 2013 is forecast with a median of $18.38 ($15.90-$20.96 confidence interval). Forecasts for both red- and golden king crab indicate an increase of approximately 22% above 2012 averages, and snow crab price is forecast to increase 16% over the 2011 average. All three forecast medians approximate the 2011 average wholesale prices for the respective fisheries, which established high points for the post-rationalization period.

With 1.36 million pounds of golden king crab landed in the western and eastern AIG fishery during January-May, 2013 year-to-date finished production is estimated at 0.86 million pounds, and gross wholesale revenue is estimated at $8.86 million; this does not represent the full calendar year total for

2013 as these figures will increase when updated to include 2013/14 season catch landed during August-December of 2013. No additional landings in the BSS fishery are expected, and estimated values shown in Table 56 for this fishery represent preliminary totals for the full 2013 calendar year. With 65 million pounds landed and sold during 2013 (>98% of the 2012/13 66.35 million pound catch limit), final ex-vessel revenue for the fishery is estimated at $154 million (± $8 million), based on an estimated ex-vessel price of $2.36 (± 0.13) per pound. At an estimated 42.7 million pounds finished volume, forecasted BSS wholesale revenue for 2013 is $234.22 (±$12.82) million. For the BBR fishery, Table 56 displays price information only; no landings have occurred to date as the fishery does not open until October.

Tables

Table 3: TACs/GHLs, BSAI Crab Fishery Management Program Allocations and Usage

Fishery	Year	IFQ / general allocation (million lbs)	CDQ/ACA allocation (million lbs)	TAC/GHL (million lbs)	% IFQ/general allocation landed	% CDQ allocation landed
BBR	05/06	16.50	1.83	18.33	100%	100%
	06/07	13.97	1.55	15.53	99%	100%
	07/08	18.34	2.04	20.38	100%	100%
	08/09	18.33	2.04	20.36	100%	100%
	09/10	14.41	1.60	16.01	100%	100%
	10/11	13.36	1.48	14.84	100%	100%
	11/12	7.05	0.78	7.83	100%	100%
	12/13	7.07	0.79	7.85	100%	100%
BSS	05/06	33.47	3.72	37.18	99%	100%
	06/07	32.91	3.66	36.57	99%	100%
	07/08	56.73	6.30	63.03	100%	100%
	08/09	52.70	5.86	58.55	100%	100%
	09/10	43.22	4.80	48.02	100%	100%
	10/11	48.85	5.43	54.28	100%	100%
	11/12	80.00	8.89	88.89	100%	100%
	12/13	59.72	6.64	66.35	100%	100%
BST	05/06	1.46	0.16	1.62	54%	100%
BTE	06/07	1.69	0.19	1.88	75%	72%
	07/08	3.10	0.34	3.45	46%	42%
	08/09	2.49	0.28	2.76	62%	100%
	09/10	1.22	0.14	1.35	98%	100%
BTW	06/07	0.98	0.11	1.09	64%	79%
	07/08	1.96	0.22	2.18	24%	26%
	08/09	1.38	0.15	1.54	8%	<1%
EAG	05/06	2.70	0.30	3.00	95%	--
	06/07	2.70	0.30	3.00	100%	--
	07/08	2.70	0.30	3.00	100%	100%
	08/09	2.84	0.32	3.15	100%	100%
	09/10	2.84	0.32	3.15	--	--
	10/11	2.84	0.32	3.15	--	--
	11/12	2.84	0.32	3.15	--	100%
	12/13	2.98	0.33	3.31	--	100%
WAG*	05/06	2.43	0.27	2.70	98%	--
	06/07	2.43	0.27	2.70	82%	--
	07/08	2.43	0.27	2.70	92%	--
	08/09	2.55	0.28	2.84	88%	--
	09/10	2.55	0.28	2.84	--	--
	10/11	2.55	0.28	2.84	--	--
	11/12	2.55	0.28	2.84	--	--
	12/13	2.68	0.30	2.98	--	--

Table continues on next page.

Table 3 - continued

Fishery	Year	IFQ / general allocation (million lbs)	CDQ/ACA allocation (million lbs)	TAC/GHL (million lbs)	% IFQ/general allocation landed	% CDQ allocation landed
SMB	09/10	1.05	0.12	1.17	44%	0%
	10/11	1.44	0.16	1.6	77%	98%
	11/12	2.12	0.24	2.36	80%	77%
	12/13	1.47	0.16	1.63	99%	100%
NSR (summer fishery)	2005	0.34	0.03	0.37	108%	100%
	2006	0.42	0.03	0.45	100%	96%
	2007	0.29	0.02	0.31	99%	100%
	2008	0.38	0.03	0.41	96%	100%
	2009	0.35	0.03	0.38	107%	100%
	2010	0.37	0.03	0.4	106%	98%
	2011	0.33	0.03	0.36	113%	100%
	2012	0.43	0.03	0.47	102%	100%
PIG	2007	0.15	n/a	0.15	0%	n/a
	2008	0.15	n/a	0.15	0%	n/a
	2009	0.15	n/a	0.15	0%	n/a
	2010	0.15	n/a	0.15	--	n/a
	2011	0.15	n/a	0.15	--	n/a
	2012	0.15	n/a	0.15	--	n/a

Source: ADF&G (TAC and allocation amounts for all fisheries, usage for Norton Sound red king crab, Pribilof Islands golden king crab and CDQ/ACA fisheries), and NMFS AKRO RAM division (IFQ usage).

Adak Community Allocation (ACA) applies to Western Aleutian Islands golden king crab fishery only. General allocations and GHL apply to non-rationalized stocks (NSR and PIG). Figures for PIK fishery (closed since 1999) and WAI fishery (closed since 2004/2005) are not shown. NSR winter commercial fishery is not shown, as this fishery is not managed with a GHL or TAC.

Table 4: BSAI Crab Fishery Participation by Calendar Year

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
BBR	CFEC permits fished	281	266	255	240	253	264	268	115	100	85	97	86	79	71	74
	Vessels	274	256	244	230	241	250	251	89	81	73	79	70	65	62	64
	Fish buyers/processors	28	24	22	23	24	26	25	16	15	18	17	16	17	18	17
BSS	CFEC permits fished	276	298	244	219	205	202	200	178	106	89	108	103	87	88	109
	Vessels	230	241	231	207	191	190	189	167	78	68	78	77	68	68	72
	Fish buyers/processors	44	37	28	23	26	21	23	20	13	18	17	17	13	16	16
BST	CFEC permits fished								5	56	40	38	24	5		
	Vessels								4	45	29	30	18	4		
	Fish buyers/processors								5	9	9	11	11	7		
EAG	CFEC permits fished	16	15	16	19	20	18	19	9	12	7	8	9	8	9	9
	Vessels	14	15	15	19	19	18	19	6	6	4	4	3	3	3	3
	Fish buyers/processors	7	7	4	4	4	4	4	4	6	5	6	6	7	10	11
NSR [a]	CFEC permits fished	16	13	29	36	54	53	41	44	41	42	34	29	37	38	64
	Vessels	8	10	15	29	32	25	26	30	26	28	22	23	23	25	30
	Fish buyers/processors	2	2	7	4	4	4	2	3	2	4	2	3	3	2	3
PIG	CFEC permits fished	4	4	8	6	9	3	5	4					1	2	1
	Vessels	3	3	6	6	8	3	5	4					1	2	1
	Fish buyers/processors	3	2	4	3	3	2	2	2					2	1	1
PIK	CFEC permits fished	58														
	Vessels	58														
	Fish buyers/processors	17														
SMB	CFEC permits fished	136											7	14	23	22
	Vessels	131											7	11	18	17
	Fish buyers/processors	16											6	9	11	11
WAG	CFEC permits fished	13	15	22	20	13	8	8	7	7	6	6	4	7	6	6
	Vessels	8	12	15	13	8	7	6	4	3	4	3	2	3	3	4
	Fish buyers/processors	6	5	7	7	6	5	4	5	3	4	5	6	5	9	8
WAI	CFEC permits fished	1	0			33	30	0								
	Vessels	1	0			33	30	0								
	Fish buyers/processors	1	0			9	10	0								
All BSAI crab fisheries	CFEC permits fished	791	607	562	529	576	570	538	355	272	232	261	242	232	235	284
	Vessels	294	293	277	280	280	278	281	212	128	114	116	112	102	103	114
	Fish buyers/processors	54	43	39	36	37	37	34	30	20	27	23	26	24	27	26

Source: CFEC fish tickets, eLandings.

Data shown by calendar year. Shaded cells indicate fishery closure years. *CFEC permits fished* counts unique permits reported on ADF&F fish ticket crab landing reports; includes permits held by distinct crab vessel operators and additional permits required to fish CDQ/ACA allocation.

[a] Data for Norton Sound red king crab are aggregated over the summer and winter commercial fisheries; as no vessels are used in the winter commercial fishery, the number of CFEC permits fished is a better measure of participation and effort for the combined fisheries. [b] Count of fish buyers/processors for Norton Sound red king crab excludes catcher seller operations. [c] Excludes participation in 2000/2001 and 2001/2002 Western Aleutian Islands red king crab Petrel Bank test fishery.

Table 5: Fleet Composition by Season, CR Program Fisheries

Fisheryr	Season	Total vessels	Catcher vessels	Catcher/processors
BBR	1998	274	263	11
	1999	256	248	8
	2000	244	238	8
	2001	230	224	8
	2002	241	234	9
	2003	250	242	8
	2004	251	243	8
	2005-2006	89	86	4
	2006-2007	81	79	3
	2007-2008	74	72	3
	2008-2009	78	76	3
	2009-2010	70	69	2
	2010-2011	65	64	2
	2011-2012	62	61	2
	2012-2013	64	63	2
BSS	1998	230	219	12
	1999	241	232	10
	2000	231	222	9
	2001	207	201	8
	2002	191	183	9
	2003	190	185	5
	2004	189	183	6
	2005	167	161	6
	2005-2006	78	74	4
	2006-2007	69	65	4
	2007-2008	78	74	4
	2008-2009	77	73	4
	2009-2010	68	66	2
	2010-2011	68	67	2
	2011-2012	72	70	2
	2012-2013	70	68	2
BST	2005-2006	33	31	2
	2006-2007	39	37	2
	2007-2008	27	26	1
	2008-2009	20	19	1
	2009-2010	13	12	1

Table continues on next page.

Table 5 - continued

Fishery	Season	Total vessels	Catcher vessels	Catcher/processors
EAG	1998	14	13	1
	1999	15	14	1
	2000	15	15	0
	2001	19	19	0
	2002	19	19	0
	2003	18	18	0
	2004	19	19	0
	2005-2006	7	6	1
	2006-2007	6	5	1
	2007-2008	4	3	1
	2008-2009	3	3	0
	2009-2010	3	3	0
	2010-2011	3	3	0
	2011-2012	3	3	0
	2012-2013	3	3	0
WAG	1998-1999	3	2	1
	1999-2000	15	14	1
	2000-2001	12	11	1
	2001-2002	9	8	1
	2002-2003	6	5	1
	2003-2004	6	5	1
	2004-2005	6	5	1
	2005-2006	3	2	1
	2006-2007	4	3	1
	2007-2008	3	2	1
	2008-2009	3	2	1
	2009-2010	3	2	1
	2010-2011	3	2	1
	2011-2012	3	2	1
	2012-2013	4	3	1
SMB	1998	131	129	2
	2009-2010	7	7	0
	2010-2011	11	11	0
	2011-2012	18	18	0
	2012-2013	17	17	0
PIK	1998	58	58	0
WAI [a]	1998-1999	1	0	1
	2002-2003	3	2	1
	2003-2004	30	28	2

Source: eLandings.

[a] Excludes participation in 2000/2001 and 2001/2002 Western Aleutian Islands red king crab Petrel Bank test fishery.

Table 6: Deadloss by Quota Type – Catcher Vessels, CR Program Fisheries

Fishery	Year	Quota type	Vessels with deadloss	Deadloss (1000 lbs)	% of fishery-year sold lbs	Mean deadloss (1000 lbs)
AIG	2006	CVOA	6	45.64	1.48%	7.61
		CVOB/CPO/CDQ/ADAK	4	19.26	0.94%	4.82
		CVC/CPC	3	0.91	0.74%	0.3
	2007	CVOA	4	30.64	1.04%	7.66
		CVOB/CPO/CDQ/ADAK	5	5.22	0.22%	1.04
		CVC/CPC	1	--	--	--
	2008	CVOA	4	45.37	1.46%	11.34
		CVOB/CPO/CDQ/ADAK	3	6.11	0.25%	2.04
		CVC/CPC	3	1.37	0.76%	0.46
	2009	CVOA	4	50.62	1.57%	12.66
		CVOB/CPO/CDQ/ADAK	4	7.95	0.37%	1.99
		CVC/CPC	2	--	--	--
	2010	CVOA	4	84.19	2.26%	21.05
		CVOB/CPO/CDQ/ADAK	4	13.76	0.62%	3.44
		CVC/CPC	4	20.23	16.33%	5.06
	2011	CVOA	4	53.74	1.54%	13.44
		CVOB/CPO/CDQ/ADAK	4	13.29	0.58%	3.32
		CVC/CPC	2	--	--	--
	2012	CVOA	4	42.26	1.21%	10.57
		CVOB/CPO/CDQ/ADAK	5	79.54	3.47%	15.91
		CVC/CPC	3	2.8	1.79%	0.93
BBR	2006	CVOA	75	90.23	0.78%	1.2
		CVOB/CPO/CDQ/ADAK	33	26.05	0.76%	0.79
		CVC/CPC	17	1.45	0.36%	0.09
	2007	CVOA	70	115.53	0.76%	1.65
		CVOB/CPO/CDQ/ADAK	39	20.35	0.45%	0.52
		CVC/CPC	19	4.51	0.84%	0.24
	2008	CVOA	74	150.26	0.99%	2.03
		CVOB/CPO/CDQ/ADAK	42	20.78	0.46%	0.49
		CVC/CPC	22	2.02	0.39%	0.09
	2009	CVOA	67	98.69	0.84%	1.47
		CVOB/CPO/CDQ/ADAK	34	21.74	0.61%	0.64
		CVC/CPC	16	1.31	0.30%	0.08
	2010	CVOA	64	94.13	0.85%	1.47
		CVOB/CPO/CDQ/ADAK	30	12.35	0.38%	0.41
		CVC/CPC	9	0.9	0.23%	0.1
	2011	CVOA	59	28.42	0.49%	0.48
		CVOB/CPO/CDQ/ADAK	20	3.51	0.20%	0.18
		CVC/CPC	6	0.14	0.07%	0.02
	2012	CVOA	59	27.02	0.46%	0.46
		CVOB/CPO/CDQ/ADAK	18	2.67	0.15%	0.15
		CVC/CPC	5	0.36	0.18%	0.07
BSS	2006	CVOA	73	292.59	1.11%	4.01
		CVOB/CPO/CDQ/ADAK	45	69.43	0.65%	1.54
		CVC/CPC	22	9.01	0.94%	0.41
	2007	CVOA	62	291.26	1.15%	4.7
		CVOB/CPO/CDQ/ADAK	42	101.1	1.19%	2.41
		CVC/CPC	18	7.25	0.78%	0.4
	2008	CVOA	74	447.35	1.00%	6.05
		CVOB/CPO/CDQ/ADAK	51	93.3	0.58%	1.83
		CVC/CPC	32	10.71	0.63%	0.33
	2009	CVOA	73	341.12	0.83%	4.67
		CVOB/CPO/CDQ/ADAK	52	82.89	0.56%	1.59
		CVC/CPC	29	11.21	0.71%	0.39

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Table 6- continued

Fishery	Year	Quota type	Vessels with deadloss	Deadloss (1000 lbs)	% of fishery-year sold lbs	Mean deadloss (1000 lbs)
	2010	CVOA	66	367.88	1.08%	5.57
		CVOB/CPO/CDQ/ADAK	41	163.49	1.30%	3.99
		CVC/CPC	17	5.32	0.41%	0.31
	2011	CVOA	64	275.35	0.72%	4.3
		CVOB/CPO/CDQ/ADAK	30	72.08	0.51%	2.4
		CVC/CPC	16	4.61	0.32%	0.29
	2012	CVOA	68	489.6	0.78%	7.2
		CVOB/CPO/CDQ/ADAK	55	132.23	0.58%	2.4
		CVC/CPC	15	15.08	0.63%	1.01
BST	2006	CVOA	35	4.16	0.64%	0.12
		CVOB/CPO/CDQ/ADAK	13	1.85	0.57%	0.14
		CVC/CPC	5	0.11	0.62%	0.02
	2007	CVOA	36	27.44	1.53%	0.76
		CVOB/CPO/CDQ/ADAK	15	1.89	0.44%	0.13
		CVC/CPC	8	0.21	0.60%	0.03
	2008	CVOA	31	17.56	1.02%	0.57
		CVOB/CPO/CDQ/ADAK	14	3.79	0.68%	0.27
		CVC/CPC	7	1.16	1.98%	0.17
	2009	CVOA	24	12.86	0.82%	0.54
		CVOB/CPO/CDQ/ADAK	17	4.13	0.77%	0.24
		CVC/CPC	7	0.44	0.97%	0.06
	2010	CVOA	12	2.62	0.89%	0.22
		CVOB/CPO/CDQ/ADAK	8	0.73	1.07%	0.09
		CVC/CPC	4	0.2	1.60%	0.05
	2011	CVOB/CPO/CDQ/ADAK	11	0.86	n/a	0.08
		CVC/CPC	1	--	n/a	--
	2012	CVOA	1	--	n/a	--
		CVOB/CPO/CDQ/ADAK	8	0.45	n/a	0.06
		CVC/CPC	11	0.42	n/a	0.04
SMB	2009	CVOA	7	10.17	2.37%	1.45
		CVOB/CPO/CDQ/ADAK	1	--	--	--
		CVC/CPC	1	--	--	--
	2010	CVOA	11	9.18	0.92%	0.83
		CVOB/CPO/CDQ/ADAK	3	1.02	0.43%	0.34
		CVC/CPC	1	--	--	--
	2011	CVOA	18	24.72	1.68%	1.37
		CVOB/CPO/CDQ/ADAK	9	1.86	0.52%	0.21
		CVC/CPC	3	0.02	0.06%	0.01
	2012	CVOA	16	19.57	1.59%	1.22
		CVOB/CPO/CDQ/ADAK	7	1.48	0.45%	0.21
		CVC/CPC	2	--	--	--

Source: eLandings.

Table 7: Ex-Vessel Volume, Gross Revenue Value, and Average Price – Harvesting Sector Total, BSAI Crab Fisheries

Fishery	Year	Sold weight (million lbs)	Ex-vessel value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
AIG	1998	5.44	$16.37	$3.01	$3.05 (0.21)
	1999	5.10	$23.83	$4.67	n/d
	2000	5.95	$29.32	$4.93	n/d
	2001	6.38	$31.96	$5.01	$5.07 (0.56)
	2002	5.54	$28.61	$5.17	n/d
	2003	5.82	$30.63	$5.26	n/d
	2004	6.02	$27.25	$4.53	$4.52 (0.11)
	2005	4.44	$14.98	$3.38	$3.34 (0.29)
	2006	5.24	$12.21	$2.33	$2.49 (0.40)
	2007	5.44	$14.14	$2.60	$2.63 (0.35)
	2008	5.73	$21.03	$3.67	--
	2009	5.51	$15.56	$2.82	--
	2010	6.09	$24.32	$3.99	--
	2011	6.00	$27.58	$4.60	--
	2012	5.84	$23.74	$4.06	$4.00 (--)
BBR [a]	1998	--	--	$4.17	$4.20 (0.77)
	1999	--	--	$9.44	n/d
	2000	--	--	$6.89	n/d
	2001	--	--	$7.23	$7.24 (0.60)
	2002	--	--	$9.31	n/d
	2003	--	--	$7.51	n/d
	2004	15.02	$97.84	$6.51	$6.54 (0.32)
	2005	18.14	$105.20	$5.80	$5.76 (0.17)
	2006	15.55	$72.03	$4.63	$4.66 (0.22)
	2007	20.17	$106.11	$5.26	$5.34 (0.63)
	2008	20.13	$117.54	$5.84	$5.78 (0.32)
	2009	15.78	$84.22	$5.34	$5.38 (0.19)
	2010	14.73	$114.68	$7.78	$7.84 (0.67)
	2011	7.79	$80.95	$10.40	$10.46 (1.39)
	2012	7.80	$62.36	$7.99	$8.06 (0.40)

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Table - continued

Fishery	Year	Sold weight (million lbs)	Ex-vessel value ($million)	Price ($/pound) Weighted average	Fishery
BSS [a]	1998	249.05	$220.98	$0.89	$0.89 (0.06)
	1999	192.41	$284.85	$1.48	n/d
	2000	--	--	$2.69	n/d
	2001	--	--	$2.32	$2.33 (0.14)
	2002	31.94	$66.22	$2.07	n/d
	2003	27.51	$74.33	$2.70	n/d
	2004	23.69	$66.97	$2.83	$2.84 (0.11)
	2005	24.86	$54.67	$2.20	$2.32 (0.23)
	2006	38.02	$51.32	$1.35	$1.36 (0.18)
	2007	34.76	$70.54	$2.03	$2.02 (0.24)
	2008	62.23	$119.81	$1.93	$2.02 (0.50)
	2009	57.69	$95.87	$1.66	$1.68 (0.25)
	2010	47.84	$64.88	$1.36	$1.36 (0.20)
	2011	54.05	$137.68	$2.55	$2.57 (0.32)
	2012	88.23	$191.64	$2.17	$2.22 (0.18)
BST	2005	0.26	--	--	--
	2006	0.99	$1.85	$1.86	$1.77 (0.42)
	2007	2.25	$4.81	$2.14	$2.12 (0.69)
	2008	2.33	$4.94	$2.12	$2.09 (0.26)
	2009	2.14	$4.75	$2.22	$2.20 (0.20)
	2010	0.37	--	--	--
NSR [c]	1998	0.03	$0.07	$2.53	n/d
	1999	0.03	$0.15	$4.89	n/d
	2000	0.32	$1.44	$4.52	n/d
	2001	0.28	$1.62	$5.82	n/d
	2002	0.26	$2.35	$9.06	n/d
	2003	0.28	$1.63	$5.78	n/d
	2004	0.33	$1.43	$4.28	n/d
	2005	0.40	$1.76	$4.42	n/d
	2006	0.44	$1.36	$3.07	n/d
	2007	0.32	$1.06	$3.36	n/d
	2008	0.40	$1.61	$4.04	n/d
	2009	0.40	$1.44	$3.64	n/d
	2010	0.42	$1.66	$3.93	n/d
	2011	0.40	$2.10	$5.19	n/d
	2012	0.50	$2.72	$5.48	n/d

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Table - continued

Fishery	Year	Sold weight (million lbs)	Ex-vessel value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
PIG	1998	--	--	--	n/d
	1999	--	--	--	n/d
	2000	0.12	$0.62	$5.06	n/d
	2001	--	--	--	n/d
	2002	--	--	--	n/d
	2003	--	--	--	n/d
	2004	--	--	--	n/d
	2005	--	--	--	n/d
	2010	--	--	--	n/d
	2011	--	--	--	n/d
	2012	--	--	--	n/d
PIK	1998	1.03	$3.82	$3.72	$3.79 (0.60)
SMB	1998	2.95	$8.72	$2.96	$2.99 (0.23)
	2009	0.45	$1.51	$3.35	$3.40 (0.29)
	2010	1.25	$6.41	$5.12	$5.20 (0.27)
	2011	1.85	$9.73	$5.26	$5.62 (0.60)
	2012	1.59	$6.80	$4.29	$4.28 (0.29)
WAI [b]	1998	--	--	--	n/d
	2002	0.50	$4.66	$9.28	n/d
	2003	0.48	$3.57	$7.51	n/d

Source: ADF&G fish tickets, eLandings, CFEC pricing, ADF&G Commercial Operator's Annual Report, NMFS AFSC BSAI Crab Economic Data Report (EDR) database.

Data shown for all BSAI crab fisheries by calendar year. Except where noted, data reflect total commercial volume and value across all management programs (LLP/open access, IFQ, CDQ, ACA) inclusive of all harvesting sector production (CV, CP, and catcher-sellers); approximation of ex-vessel sale value of CP and catcher-seller volume is incorporated in revenue total by using weighted average ex-vessel sale price.

Price results are sourced from CV sector EDR data were collected (1998, 2001, 2004, and 2005-2011 for CR program fisheries) and secondarily from CFEC gross earnings estimates (1999-2000, 2002-2003 for CR fisheries; all years for non-CR fisheries).

Weighted average price is calculated as the ratio of aggregate gross revenue value to sold volume as shown, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over vessel-level observations (for subset of fishery/year for which EDR data are available), with standard deviation (sd) reported to indicate relative variability over vessel-level observations.

[a] Landings and ex-vessel revenue suppressed in years where CDQ fishery landings are confidential.

[b] Excludes landings in Petrel Bank test fishery in 2001.

[c] Data for Norton Sound red king crab are aggregated over the summer and winter commercial fisheries.

Table 8: Ex-vessel Price and Share of Fishery-Year Landings by Owner or Leaseholder State of Residence, Catcher Vessels - CR Program Fisheries

						Price ($/pound)	
Fishery	Year	State	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Weighted average	Mean (sd)
AIG	98/01/04	AK	3 (2)	n/d	n/d	--	-- (--)
		WA	43 (18)	n/d	n/d	$4.25	$4.34 (0.94)
		Other	6 (2)	n/d	n/d	--	-- (--)
	2005	WA	8	--	--	$3.40	$3.30 (0.26)
		Other	2	--	--	--	-- (--)
	2006	WA	5	--	--	$2.32	$2.42 (0.20)
		Other	1	--	--	--	-- (--)
	2007	AK	1	--	--	--	-- (--)
		WA	4	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
	2008	AK	1	--	--	--	-- (--)
		WA	2	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
	2009	AK	1	--	--	--	-- (--)
		WA	2	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
	2010	AK	1	--	--	--	-- (--)
		WA	2	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
	2011	AK	1	--	--	--	-- (--)
		WA	2	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
	2012	AK	2	--	--	--	-- (--)
		WA	2	--	--	--	-- (--)
		Other	1	--	--	--	-- (--)
BBR	98/01/04	AK	122 (49)	n/d	n/d	$5.93	$5.97 (1.42)
		WA	429 (174)	n/d	n/d	$5.83	$5.99 (1.42)
		Other	82 (33)	n/d	n/d	$5.71	$6.06 (1.36)
	2005	AK	19	16%	16%	$5.76	$5.72 (0.21)
		WA	53	69%	70%	$5.81	$5.78 (0.15)
		Other	13	14%	14%	$5.80	$5.75 (0.21)
	2006	AK	24	24%	23%	$4.60	$4.63 (0.24)
		WA	48	66%	67%	$4.65	$4.68 (0.22)
		Other	8	10%	10%	$4.59	$4.58 (0.20)
	2007	AK	17	22%	23%	$5.28	$5.36 (1.16)
		WA	44	67%	68%	$5.26	$5.33 (0.40)
		Other	9	10%	10%	$5.09	$5.31 (0.24)
	2008	AK	17	20%	20%	$6.01	$5.88 (0.58)
		WA	51	71%	71%	$5.79	$5.75 (0.20)
		Other	8	9%	9%	$5.83	$5.77 (0.13)
	2009	AK	19	28%	28%	$5.29	$5.35 (0.15)
		WA	40	62%	62%	$5.36	$5.40 (0.16)
		Other	9	10%	10%	$5.29	$5.37 (0.35)
	2010	AK	12	25%	24%	$7.66	$7.70 (0.74)
		WA	38	62%	63%	$7.88	$7.97 (0.62)
		Other	13	14%	13%	$7.57	$7.59 (0.67)
	2011	AK	12	23%	22%	$9.88	$10.30 (1.14)
		WA	36	60%	61%	$10.66	$10.71 (1.18)
		Other	11	17%	17%	$10.16	$9.87 (2.02)

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Table 8 - continued

Fishery	Year	State	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
	2012	AK	17	28%	28%	$8.05	$8.08 (0.42)
		WA	40	63%	62%	$7.94	$8.03 (0.39)
		Other	6	9%	10%	$8.14	$8.20 (0.44)
BSS	98/01/04	AK	100 (41)	n/d	n/d	$1.18	$2.00 (0.86)
		WA	354 (143)	n/d	n/d	$1.19	$2.03 (0.83)
		Other	70 (30)	n/d	n/d	$1.19	$1.99 (0.83)
	2005	AK	29	16%	17%	$2.34	$2.34 (0.04)
		WA	103	73%	71%	$2.15	$2.31 (0.27)
		Other	18	11%	12%	$2.35	$2.36 (0.10)
	2006	AK	17	20%	20%	$1.32	$1.34 (0.08)
		WA	48	67%	67%	$1.35	$1.36 (0.20)
		Other	9	13%	13%	$1.38	$1.37 (0.16)
	2007	AK	14	23%	23%	$2.01	$2.02 (0.22)
		WA	43	66%	66%	$2.04	$2.03 (0.26)
		Other	7	11%	11%	$2.01	$1.95 (0.15)
	2008	AK	15	22%	21%	$1.87	$1.91 (0.30)
		WA	50	66%	69%	$1.99	$2.07 (0.54)
		Other	9	12%	11%	$1.68	$1.88 (0.46)
	2009	AK	19	32%	33%	$1.69	$1.73 (0.36)
		WA	45	59%	59%	$1.66	$1.66 (0.18)
		Other	9	9%	9%	$1.61	$1.64 (0.23)
	2010	AK	14	23%	23%	$1.36	$1.37 (0.08)
		WA	40	65%	65%	$1.36	$1.37 (0.25)
		Other	12	11%	11%	$1.33	$1.34 (0.11)
	2011	AK	15	24%	24%	$2.55	$2.60 (0.15)
		WA	40	62%	63%	$2.56	$2.54 (0.39)
		Other	11	14%	13%	$2.53	$2.61 (0.19)
	2012	AK	21	27%	27%	$2.14	$2.18 (0.16)
		WA	44	63%	63%	$2.18	$2.23 (0.19)
		Other	6	10%	10%	$2.22	$2.28 (0.10)
BST	2005	AK	1	--	--	--	-- (--)
		WA	3	--	--	--	-- (--)
	2006	AK	6	11%	12%	$1.91	$1.75 (0.31)
		WA	30	81%	81%	$1.86	$1.81 (0.45)
		Other	5	7%	7%	$1.79	$1.47 (0.24)
	2007	AK	7	--	--	$2.06	$2.05 (0.29)
		WA	17	55%	57%	$2.25	$2.15 (0.83)
		Other	3	--	--	--	-- (--)
	1998	AK	6	--	--	$1.87	$1.74 (0.49)
		WA	19	61%	61%	$2.11	$2.13 (0.17)
		Other	4	--	--	--	-- (--)
	1998	AK	5	--	--	$2.24	$2.22 (0.12)
		WA	10	43%	41%	$2.13	$2.17 (0.21)
		Other	2	--	--	--	-- (--)
	2010	AK	1	--	--	--	-- (--)
		WA	1	--	--	--	-- (--)
		Other	2	--	--	--	-- (--)
PIK	98/01/04	AK	12 (12)	n/d	n/d	$3.78	$3.98 (0.83)
		WA	28 (28)	n/d	n/d	$4.03	$3.87 (0.76)
		Other	5 (5)	n/d	n/d	$3.60	$3.62 (0.07)

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Table 8 - continued

Fishery	Year	State	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
SMB	98/01/04	AK	20 (20)	n/d	n/d	$2.92	$2.93 (0.09)
		WA	61 (61)	n/d	n/d	$2.97	$3.02 (0.27)
		Other	14 (14)	n/d	n/d	$2.93	$2.94 (0.11)
	2009	AK	1	--	--	--	-- (--)
		WA	5	--	--	$3.41	$3.45 (0.31)
		Other	1	--	--	--	-- (--)
	2010	AK	3	--	--	--	-- (--)
		WA	5	47%	49%	$5.31	$5.31 (0.07)
		Other	2	--	--	--	-- (--)
	2011	AK	6	--	--	$5.52	$5.75 (0.63)
		WA	9	50%	50%	$5.26	$5.62 (0.54)
		Other	3	--	--	--	-- (--)
	2012	AK	6	--	--	$4.25	$4.23 (0.23)
		WA	9	49%	49%	$4.29	$4.29 (0.35)
		Other	2	--	--	--	-- (--)
WAI [a]	98/01/04	WA	2 (2)	n/d	n/d	--	-- (--)
		Other	1 (1)	n/d	n/d	--	-- (--)

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year for EDR reporting years 2005-present, and as three-year average over pre-rationalization reporting years (1998, 2001, and 2004, shown as '98/01/04'). Except where noted, data reflect total catcher-vessel sector commercial volume and revenue value across all management programs (LLP/open access, IFQ, CDQ, ACA). Beginning in 2012,data include ex-vessel sales reported by catcher/processor sector.

Weighted average price is calculated as the ratio of aggregate gross revenue value to sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over observations by vessel and quota share-type, with standard deviation (sd) reported to indicate relative variability over vessel-level observations.

[a] Landings in 2001 Petrel Bank test fishery; 1998 fishery data unavailable.

[b] Vessels column shows total count of vessel-level observations for fishery-year; for 98/01/04, count of unique vessels represented over all observations in the 3-year data series is shown in parentheses). In a limited number of observations where there is missing data for either revenue or volume, average price for the fishery/year is used to impute the missing value.

Table 9: Ex-vessel Price and Share of Fishery-Year Landings by Vessel Length, CR Program Fisheries

Fishery	Year	Vessel length	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
AIG	98/01/04	85'-99'	12 (5)	n/d	n/d	$4.05	$4.16 (0.87)
		100'-124'	16 (7)	n/d	n/d	$4.51	$4.63 (1.03)
		125' and over	24 (10)	n/d	n/d	$4.26	$4.23 (0.82)
	2005	85'-99'	1	--	--	--	-- (--)
		100'-124'	3	--	--	--	-- (--)
		125' and over	6	--	--	$3.38	$3.40 (0.32)
	2006	100'-124'	2	--	--	--	-- (--)
		125' and over	4	--	--	--	-- (--)
	2007	100'-124'	4	--	--	--	-- (--)
		125' and over	2	--	--	--	-- (--)
	2008	100'-124'	3	--	--	--	-- (--)
		125' and over	1	--	--	--	-- (--)
	2009	100'-124'	3	--	--	--	-- (--)
		125' and over	1	--	--	--	-- (--)
	2010	100'-124'	3	--	--	--	-- (--)
		125' and over	1	--	--	--	-- (--)
	2011	100'-124'	3	--	--	--	-- (--)
		125' and over	1	--	--	--	-- (--)
	2012	100'-124'	3	--	--	--	-- (--)
		125' and over	2	--	--	--	-- (--)
BBR	98/01/04	Under 85'	44 (23)	n/d	n/d	$5.73	$5.94 (1.36)
		85'-99'	129 (59)	n/d	n/d	$5.92	$6.00 (1.43)
		100'-124'	298 (118)	n/d	n/d	$5.81	$6.03 (1.39)
		125' and over	162 (69)	n/d	n/d	$5.85	$5.96 (1.44)
	2005	Under 85'	3	--	--	--	-- (--)
		85'-99'	12	--	--	$5.78	$5.73 (0.18)
		100'-124'	46	44%	44%	$5.79	$5.76 (0.20)
		125' and over	24	42%	42%	$5.82	$5.79 (0.11)
	2006	Under 85'	3	--	--	--	-- (--)
		85'-99'	12	--	--	$4.63	$4.74 (0.19)
		100'-124'	44	46%	46%	$4.61	$4.63 (0.23)
		125' and over	21	41%	42%	$4.65	$4.67 (0.20)
	2007	Under 85'	1	--	--	--	-- (--)
		85'-99'	9	--	--	$5.19	$5.07 (1.14)
		100'-124'	40	49%	49%	$5.24	$5.36 (0.50)
		125' and over	20	39%	39%	$5.27	$5.40 (0.56)
	2008	Under 85'	2	--	--	--	-- (--)
		85'-99'	10	--	--	$6.20	$5.69 (0.29)
		100'-124'	43	50%	50%	$5.84	$5.82 (0.39)
		125' and over	21	37%	37%	$5.76	$5.75 (0.13)
	2009	Under 85'	3	--	--	--	-- (--)
		85'-99'	9	--	--	$5.31	$5.31 (0.21)
		100'-124'	35	46%	46%	$5.35	$5.41 (0.18)
		125' and over	21	39%	39%	$5.34	$5.37 (0.19)
	2010	Under 85'	1	--	--	--	-- (--)
		85'-99'	8	--	--	$7.56	$7.76 (0.58)
		100'-124'	33	45%	45%	$7.75	$7.78 (0.79)
		125' and over	21	44%	44%	$7.86	$7.96 (0.48)

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Fishery	Year	Vessel length	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
	2011	Under 85'	1	--	--	--	-- (--)
		85'-99'	8	--	--	$9.35	$9.98 (1.01)
		100'-124'	29	39%	39%	$10.53	$10.54 (1.31)
		125' and over	21	48%	48%	$10.52	$10.56 (1.65)
	2012	Under 85'	1	--	--	--	-- (--)
		85'-99'	9	--	--	$7.86	$7.89 (0.34)
		100'-124'	31	39%	40%	$8.00	$8.09 (0.46)
		125' and over	22	46%	47%	$8.01	$8.09 (0.33)
BSS	98/01/04	Under 85'	25 (14)	n/d	n/d	$1.15	$2.05 (0.86)
		85'-99'	103 (51)	n/d	n/d	$1.11	$1.92 (0.85)
		100'-124'	245 (98)	n/d	n/d	$1.20	$2.03 (0.82)
		125' and over	151 (63)	n/d	n/d	$1.21	$2.06 (0.85)
	2005	Under 85'	5	2%	2%	$2.32	$2.32 (0.00)
		85'-99'	25	20%	15%	$1.70	$2.25 (0.43)
		100'-124'	77	48%	51%	$2.32	$2.34 (0.20)
		125' and over	43	30%	32%	$2.32	$2.32 (0.06)
	2006	Under 85'	2	--	--	--	-- (--)
		85'-99'	8	--	--	$1.31	$1.34 (0.43)
		100'-124'	39	41%	41%	$1.36	$1.37 (0.11)
		125' and over	25	49%	49%	$1.34	$1.35 (0.15)
	2007	Under 85'	2	--	--	--	-- (--)
		85'-99'	7	--	--	$1.97	$1.91 (0.18)
		100'-124'	35	44%	43%	$2.01	$2.01 (0.24)
		125' and over	20	45%	46%	$2.06	$2.05 (0.26)
	2008	Under 85'	1	--	--	--	-- (--)
		85'-99'	9	--	--	$1.91	$2.28 (1.35)
		100'-124'	43	51%	51%	$1.95	$1.99 (0.19)
		125' and over	21	39%	38%	$1.90	$1.97 (0.28)
	2009	Under 85'	2	--	--	--	-- (--)
		85'-99'	8	--	--	$1.61	$1.66 (0.08)
		100'-124'	40	46%	45%	$1.64	$1.66 (0.20)
		125' and over	23	43%	44%	$1.70	$1.72 (0.35)
	2010	Under 85'	2	--	--	--	-- (--)
		85'-99'	9	--	--	$1.34	$1.38 (0.08)
		100'-124'	33	43%	44%	$1.36	$1.37 (0.27)
		125' and over	22	47%	47%	$1.35	$1.35 (0.12)
	2011	Under 85'	1	--	--	--	-- (--)
		85'-99'	9	--	--	$3.10	$2.64 (0.13)
		100'-124'	33	44%	43%	$2.49	$2.55 (0.39)
		125' and over	23	46%	45%	$2.51	$2.57 (0.28)
	2012	Under 85'	1	--	--	--	-- (--)
		85'-99'	10	--	--	$2.00	$2.08 (0.18)
		100'-124'	36	43%	43%	$2.19	$2.22 (0.19)
		125' and over	24	44%	44%	$2.20	$2.26 (0.12)
BST	2005	85'-99'	1	--	--	--	-- (--)
		100'-124'	1	--	--	--	-- (--)
		125' and over	2	--	--	--	-- (--)
	2006	Under 85'	2	--	--	--	-- (--)
		85'-99'	5	--	--	$1.82	$1.72 (0.27)
		100'-124'	22	70%	69%	$1.85	$1.73 (0.27)
		125' and over	12	16%	16%	$1.87	$1.71 (0.31)

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Fishery	Year	Vessel length	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
	2007	Under 85'	2	--	--	--	-- (--)
		85'-99'	2	--	--	--	-- (--)
		100'-124'	16	52%	49%	$2.01	$2.04 (0.33)
		125' and over	7	--	--	$2.19	$1.98 (0.52)
	2008	Under 85'	3	--	--	--	-- (--)
		85'-99'	4	--	--	--	-- (--)
		100'-124'	17	60%	60%	$2.12	$2.07 (0.24)
		125' and over	5	13%	13%	$2.07	$2.16 (0.20)
	2009	Under 85'	2	--	--	--	-- (--)
		85'-99'	1	--	--	--	-- (--)
		100'-124'	11	77%	80%	$2.28	$2.25 (0.20)
		125' and over	3	--	--	--	-- (--)
	2010	Under 85'	1	--	--	--	-- (--)
		100'-124'	3	--	--	--	-- (--)
PIK	98/01/04	Under 85'	9 (9)	n/d	n/d	$4.07	$4.23 (1.08)
		85'-99'	12 (12)	n/d	n/d	$3.80	$3.76 (0.34)
		100'-124'	17 (17)	n/d	n/d	$3.72	$3.71 (0.45)
		125' and over	7 (7)	n/d	n/d	$4.33	$4.01 (1.14)
SMB	98/01/04	Under 85'	2 (2)	n/d	n/d	--	-- (--)
		85'-99'	17 (17)	n/d	n/d	$2.98	$3.00 (0.30)
		100'-124'	48 (48)	n/d	n/d	$2.93	$2.97 (0.24)
		125' and over	28 (28)	n/d	n/d	$2.99	$3.01 (0.17)
	2009	100'-124'	5	--	--	$3.35	$3.44 (0.25)
		125' and over	2	--	--	--	-- (--)
	2010	100'-124'	8	--	--	$5.09	$5.17 (0.29)
		125' and over	2	--	--	--	-- (--)
	2011	Under 85'	1	--	--	--	-- (--)
		85'-99'	1	--	--	--	-- (--)
		100'-124'	9	71%	69%	$5.15	$5.48 (0.66)
		125' and over	7	--	--	$5.56	$5.84 (0.47)
	2012	85'-99'	1	--	--	--	-- (--)
		100'-124'	10	76%	77%	$4.32	$4.31 (0.33)
		125' and over	6	--	--	$4.21	$4.29 (0.22)
WAI [a]	98/01/04	100'-124'	1 (1)	n/d	n/d	--	-- (--)
		125' and over	2 (2)	n/d	n/d	--	-- (--)

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year for EDR reporting years 2005-present, and as three-year average over pre-rationalization reporting years (1998, 2001, and 2004, shown as '98/01/04'). Except where noted, data reflect total catcher-vessel sector commercial volume and revenue value across all management programs (LLP/open access, IFQ, CDQ, ACA). Beginning in 2012,data include ex-vessel sales reported by catcher/processor sector.

Weighted average price is calculated as the ratio of aggregate gross revenue value to sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over observations by vessel and quota share-type, with standard deviation (sd) reported to indicate relative variability over vessel-level observations.

[a] Landings in 2001 Petrel Bank test fishery; 1998 fishery data unavailable.

[b] Vessels column shows total count of vessel-level observations for fishery-year; for 98/01/04, count of unique vessels represented over all observations in the 3-year data series is shown in parentheses). In a limited number of observations where there is missing data for either revenue or volume, average price for the fishery/year is used to impute the missing value.

Table 10: Ex-vessel Price and Share of Fishery-Year Landings by Quota Type, Catcher Vessels, CR Program Fisheries

						Price ($/pound)	
Fishery	Year	Quota type	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Weighted average	Mean (sd)
AIG	1998	N/A	13			$3.01	$3.05 (0.21)
	2001	N/A	19			$5.01	$5.07 (0.56)
	2004	N/A	20			$4.53	$4.52 (0.11)
	2005	ALL	10			$3.38	$3.34 (0.29)
	2006	ALL	6			$2.33	$2.49 (0.40)
		CVOA	6	75%	72%	$2.22	$2.28 (0.16)
		CVOB/CPO/CDQ/ADAK	5	23%	27%	$2.69	$2.71 (0.58)
		CVC/CPC	3	--	--	--	--
	2007	ALL	6			$2.60	$2.63 (0.35)
		CVOA	5	81%	81%	$2.61	$2.64 (0.33)
		CVOB/CPO/CDQ/ADAK	6	17%	16%	$2.51	$2.55 (0.41)
		CVC/CPC	3	--	--	--	--
	2008	ALL	4			--	--
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	4	--	--	--	--
		CVC/CPC	4	--	--	--	--
	2009	ALL	4			--	--
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	4	--	--	--	--
		CVC/CPC	4	--	--	--	--
	2010	ALL	4			--	--
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	4	--	--	--	--
		CVC/CPC	4	--	--	--	--
	2011	ALL	4			--	--
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	4	--	--	--	--
		CVC/CPC	4	--	--	--	--
	2012	ALL	5			$4.06	$4.00 (--)
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	5	27%	27%	$3.96	$3.96 (0.34)
		CVC/CPC	5	3%	3%	$3.86	$3.90 (0.54)
BBR	1998	N/A	206			$4.17	$4.20 (0.77)
	2001	N/A	197			$7.23	$7.24 (0.60)
	2004	N/A	230			$6.51	$6.54 (0.32)
	2005	ALL	85			$5.80	$5.76 (0.17)
	2006	ALL	80			$4.63	$4.66 (0.22)
		CVOA	77	77%	77%	$4.62	$4.62 (0.20)
		CVOB/CPO/CDQ/ADAK	65	19%	19%	$4.69	$4.69 (0.21)
		CVC/CPC	49	4%	3%	$4.59	$4.68 (0.25)
	2007	ALL	70			$5.26	$5.34 (0.63)
		CVOA	69	78%	78%	$5.25	$5.27 (0.30)
		CVOB/CPO/CDQ/ADAK	53	19%	19%	$5.25	$5.31 (0.90)
		CVC/CPC	41	3%	3%	$5.14	$5.48 (0.62)
	2008	ALL	76			$5.84	$5.78 (0.32)
		CVOA	73	76%	76%	$5.85	$5.78 (0.44)
		CVOB/CPO/CDQ/ADAK	56	22%	22%	$5.79	$5.77 (0.20)
		CVC/CPC	38	2%	2%	$5.83	$5.82 (0.17)

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Table 10 - continued

Fishery	Year	Quota type	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
	2009	ALL	68			$5.34	$5.38 (0.19)
		CVOA	68	77%	77%	$5.32	$5.31 (0.11)
		CVOB/CPO/CDQ/ADAK	53	20%	20%	$5.38	$5.42 (0.22)
		CVC/CPC	39	3%	3%	$5.40	$5.44 (0.23)
	2010	ALL	63			$7.78	$7.84 (0.67)
		CVOA	63	76%	76%	$7.71	$7.69 (0.50)
		CVOB/CPO/CDQ/ADAK	52	20%	21%	$8.08	$7.92 (0.85)
		CVC/CPC	33	4%	4%	$7.68	$8.02 (0.61)
	2011	ALL	59			$10.40	$10.46 (1.39)
		CVOA	58	79%	78%	$10.30	$10.27 (0.93)
		CVOB/CPO/CDQ/ADAK	48	19%	20%	$10.82	$10.62 (1.55)
		CVC/CPC	34	2%	2%	$9.89	$10.58 (1.79)
	2012	ALL	63			$7.99	$8.06 (0.40)
		CVOA	61	77%	76%	$7.93	$7.92 (0.40)
		CVOB/CPO/CDQ/ADAK	47	21%	21%	$8.20	$8.15 (0.35)
		CVC/CPC	33	3%	3%	$8.22	$8.18 (0.41)
BSS	1998	N/A	176			$0.89	$0.89 (0.06)
	2001	N/A	173			$2.32	$2.33 (0.14)
	2004	N/A	175			$2.83	$2.84 (0.11)
	2005	N/A	150			$2.20	$2.32 (0.23)
	2006	ALL	74			$1.35	$1.36 (0.18)
		CVOA	73	80%	79%	$1.35	$1.35 (0.13)
		CVOB/CPO/CDQ/ADAK	63	18%	18%	$1.36	$1.36 (0.25)
		CVC/CPC	52	3%	3%	$1.39	$1.37 (0.10)
	2007	ALL	64			$2.03	$2.02 (0.24)
		CVOA	62	80%	80%	$2.02	$2.03 (0.16)
		CVOB/CPO/CDQ/ADAK	53	17%	18%	$2.06	$2.02 (0.28)
		CVC/CPC	41	3%	3%	$1.97	$2.00 (0.29)
	2008	ALL	74			$1.93	$2.02 (0.50)
		CVOA	73	75%	75%	$1.93	$1.91 (0.22)
		CVOB/CPO/CDQ/ADAK	62	22%	22%	$1.88	$2.11 (0.80)
		CVC/CPC	42	3%	3%	$2.09	$2.07 (0.05)
	2009	ALL	73			$1.66	$1.68 (0.25)
		CVOA	73	78%	78%	$1.66	$1.64 (0.17)
		CVOB/CPO/CDQ/ADAK	59	19%	19%	$1.66	$1.66 (0.22)
		CVC/CPC	40	2%	3%	$1.81	$1.77 (0.35)
	2010	ALL	66			$1.36	$1.36 (0.20)
		CVOA	66	73%	73%	$1.36	$1.37 (0.21)
		CVOB/CPO/CDQ/ADAK	53	24%	24%	$1.36	$1.35 (0.17)
		CVC/CPC	38	3%	3%	$1.26	$1.37 (0.23)
	2011	ALL	66			$2.55	$2.57 (0.32)
		CVOA	63	75%	74%	$2.53	$2.46 (0.25)
		CVOB/CPO/CDQ/ADAK	60	23%	23%	$2.62	$2.64 (0.36)
		CVC/CPC	37	2%	2%	$2.57	$2.63 (0.34)
	2012	ALL	71			$2.17	$2.22 (0.18)
		CVOA	68	76%	74%	$2.13	$2.13 (0.15)
		CVOB/CPO/CDQ/ADAK	63	21%	22%	$2.29	$2.26 (0.18)
		CVC/CPC	40	3%	3%	$2.33	$2.30 (0.13)

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Table 10 - continued

Fishery	Year	Quota type	Vessels [b]	Share of ex-vessel volume	Share of ex-vessel revenue	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
BST	2005	ALL	4			--	--
	2006	ALL	41			$1.86	$1.77 (0.42)
		CVOA	39	75%	74%	$1.84	$1.75 (0.51)
		CVOB/CPO/CDQ/ADAK	14	23%	24%	$1.95	$1.84 (0.17)
		CVC/CPC	12	2%	2%	$1.75	$1.78 (0.30)
	2007	ALL	27			$2.14	$2.12 (0.69)
		CVOA	28	87%	87%	$2.14	$2.21 (0.82)
		CVOB/CPO/CDQ/ADAK	14	12%	12%	$2.16	$2.12 (0.35)
		CVC/CPC	9	1%	1%	$2.01	$1.87 (0.63)
	2008	ALL	29			$2.12	$2.09 (0.26)
		CVOA	26	73%	72%	$2.09	$2.07 (0.27)
		CVOB/CPO/CDQ/ADAK	12	26%	27%	$2.19	$2.08 (0.30)
		CVC/CPC	5	2%	2%	$2.18	$2.18 (0.07)
	2009	ALL	17			$2.22	$2.20 (0.20)
		CVOA	17	75%	74%	$2.20	$2.17 (0.19)
		CVOB/CPO/CDQ/ADAK	9	22%	23%	$2.30	$2.28 (0.22)
		CVC/CPC	9	3%	3%	$2.12	$2.16 (0.17)
	2010	ALL	4			--	--
		CVOA	4	--	--	--	--
		CVOB/CPO/CDQ/ADAK	2	--	--	--	--
		CVC/CPC	2	--	--	--	--
PIK	1998	N/A	43			$3.72	$3.79 (0.60)
SMB	1998	N/A	95			$2.96	$2.99 (0.23)
	2009	ALL	7			$3.35	$3.40 (0.29)
		CVOA	7	95%	95%	$3.33	$3.29 (0.22)
		CVOB/CPO/CDQ/ADAK	1	--	--	--	--
		CVC/CPC	1	--	--	--	--
	2010	ALL	10			$5.12	$5.20 (0.27)
		CVOA	10	79%	78%	$5.08	$5.11 (0.35)
		CVOB/CPO/CDQ/ADAK	8	19%	20%	$5.28	$5.27 (0.17)
		CVC/CPC	5	2%	2%	$5.16	$5.25 (0.22)
	2011	ALL	18			$5.26	$5.62 (0.60)
		CVOA	18	79%	78%	$5.14	$5.25 (0.39)
		CVOB/CPO/CDQ/ADAK	15	17%	19%	$5.74	$5.78 (0.48)
		CVC/CPC	9	4%	4%	$5.51	$6.06 (0.72)
	2012	ALL	17			$4.29	$4.28 (0.29)
		CVOA	17	78%	78%	$4.29	$4.24 (0.34)
		CVOB/CPO/CDQ/ADAK	13	20%	20%	$4.31	$4.32 (0.25)
		CVC/CPC	12	2%	2%	$4.27	$4.31 (0.26)
WAI [a]	2001	N/A	3			--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Except where noted, data reflect total catcher-vessel sector commercial volume and revenue value across all management programs (LLP/open access, IFQ, CDQ, ACA). Beginning in 2012,data include ex-vessel sales reported by catcher/processor sector.

Weighted average price is calculated as the ratio of aggregate gross revenue value to sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over observations by vessel and quota share-type, with standard deviation (sd) reported to indicate relative variability over vessel-level observations.

[a] Landings in 2001 Petrel Bank test fishery; 1998 fishery data unavailable.

[b] Vessels column shows total count of vessel-level observations for fishery-year. In a limited number of observations where there is missing data for either revenue or volume, average price for the fishery/year is used to impute the missing value.

Table 11: Ex-vessel Price and Share of Fishery-Year Landings by Cooperative Membership Status, Catcher Vessels, CR Program Fisheries

		Cooperative members				Non-cooperative members			
			Share of aggregate ex-vessel revenue	Price ($/pound)			Share of aggregate ex-vessel revenue	Price ($/pound)	
Fishery	Year	Vessels		Weighted average	Mean (sd)	Vessels		Weighted average	Mean (sd)
AIG	2005	10	100%	$3.38	$3.34 (0.29)	0	0%	n/a	n/a
	2006	6	100%	$2.33	$2.49 (0.4)	0	0%	n/a	n/a
	2007	6	100%	$2.60	$2.63 (0.35)	0	0%	n/a	n/a
	2008	4	--	--	--	0	0%	n/a	n/a
	2009	3	--	--	--	1	--	--	--
BBR	2005	69	86%	$5.80	$5.76 (0.19)	16	14%	$5.80	$5.80 (5.78)
	2006	75	98%	$4.64	$4.67 (0.21)	5	2%	$4.25	$4.25 (4.32)
	2007	67	--	$5.25	$5.34 (0.64)	3	--	--	--
	2008	70	95%	$5.85	$5.79 (0.34)	6	5%	$5.71	$5.71 (5.69)
	2009	64	--	$5.34	$5.38 (0.19)	4	--	--	--
BSS	2005	119	82%	$2.18	$2.33 (0.25)	31	18%	$2.29	$2.29 (2.3)
	2006	71	--	$1.35	$1.36 (0.18)	3	--	--	--
	2007	63	--	$2.03	$2.02 (0.24)	1	--	--	--
	2008	70	--	$1.92	$2.02 (0.51)	4	--	--	--
	2009	68	95%	$1.66	$1.68 (0.26)	5	5%	$1.66	$1.66 (1.69)
BST	2005	4	--	--	--	0	0%	n/a	n/a
	2006	39	--	$1.86	$1.77 (0.43)	2	--	--	--
	2007	27	100%	$2.14	$2.12 (0.69)	0	0%	n/a	n/a
	2008	27	--	$2.10	$2.08 (0.27)	2	--	--	--
	2009	15	--	$2.23	$2.21 (0.2)	2	--	--	--
SMB	2009	7	100%	$3.35	$3.40 (0.29)	0	0%	n/a	n/a

Source: NMFS AFSC BSAI Crab Economic Data.

Data is not shown for 2010 and later given the limited number of vessels operating outside cooperatives at this time.

Except where noted, data reflect total catcher-vessel sector commercial volume and revenue value across all management programs (LLP/open access, IFQ, CDQ, ACA).

Vessels column shows total count of vessel-level observations for fishery-year. In a limited number of observations where there is missing data for either revenue or volume, average price for the fishery/year is used to impute the missing value.

Price results are sourced from CV sector EDR data. Weighted average price is calculated as the ratio of total aggregate gross revenue value to sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over observations by vessel and quota share-type, with standard deviation (sd) reported to indicate relative variability over vessel-level observations.

Table 12: Estimated Finished Production, First Wholesale Value, and Price, CR Program Fisheries

Fishery	Year	Processing operations	Finished weight (million lbs)	First wholesale value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
AIG	1998	7	3.65	$23.95	$6.56	$6.70 (0.54)
	1999	8	3.42	$34.41	$10.05	$9.77 (2.37)
	2000	6	3.99	$31.43	$7.87	$8.79 (3.01)
	2001	5	4.28	$45.64	$10.65	$10.59 (0.27)
	2002	5	3.72	$41.33	$11.11	$10.88 (1.12)
	2003	5	3.91	$44.39	$11.36	$11.47 (0.49)
	2004	5	4.04	$32.96	$8.16	$8.80 (1.53)
	2005	6	2.98	$22.44	$7.53	$7.43 (0.47)
	2006	6	3.13	$16.57	$5.29	$5.00 (0.45)
	2007	6	3.42	$21.46	$6.27	$6.22 (0.61)
	2008	7	3.41	$28.71	$8.41	$8.17 (0.70)
	2009	8	3.3	$21.39	$6.49	$6.96 (2.01)
	2010	8	3.17	$25.67	$8.10	$8.58 (1.45)
	2011	14	3.64	$35.00	$9.60	$9.88 (2.27)
	2012	13	3.71	$27.05	$7.30	$8.32 (2.57)
BBR	1998	22	9.97	$86.13	$8.64	$8.46 (1.36)
	1999	21	7.82	$132.35	$16.92	$16.86 (2.02)
	2000	20	5.48	$55.81	$10.19	$12.46 (2.31)
	2001	20	5.63	$74.25	$13.20	$13.85 (1.79)
	2002	20	6.43	$110.36	$17.16	$17.18 (2.27)
	2003	25	10.44	$149.55	$14.33	$14.09 (1.43)
	2004	23	10.19	$130.33	$12.79	$12.97 (0.72)
	2005	16	12.3	$134.16	$10.90	$11.08 (0.96)
	2006	15	9.17	$82.48	$9.00	$8.68 (1.08)
	2007	17	13.09	$128.37	$9.81	$9.72 (0.82)
	2008	16	13.31	$144.35	$10.85	$10.30 (2.79)
	2009	15	10.4	$108.27	$10.41	$10.02 (1.28)
	2010	16	10.03	$137.29	$13.69	$13.66 (1.76)
	2011	18	5.3	$100.18	$18.89	$17.55 (3.54)
	2012	16	5.27	$76.23	$14.47	$14.66 (4.25)
BSS	1998	33	177.43	$563.26	$3.17	$3.09 (0.44)
	1999	31	137.08	$596.78	$4.35	$4.18 (0.86)
	2000	24	23.37	$118.28	$5.06	$5.79 (1.39)
	2001	21	17.65	$98.83	$5.60	$5.53 (0.43)
	2002	21	22.75	$121.21	$5.33	$5.42 (0.66)
	2003	19	19.6	$126.59	$6.46	$6.45 (0.34)
	2004	21	16.88	$112.32	$6.66	$6.58 (0.41)
	2005	20	17.71	$87.84	$4.96	$4.71 (0.64)
	2006	13	24.92	$83.19	$3.34	$3.32 (0.23)
	2007	18	22.66	$105.79	$4.67	$4.80 (0.41)
	2008	16	41.02	$178.06	$4.34	$4.23 (1.20)
	2009	16	35.97	$142.04	$3.95	$3.95 (0.18)
	2010	12	31.41	$108.71	$3.46	$3.54 (0.31)
	2011	16	37.89	$208.48	$5.50	$5.67 (0.74)
	2012	15	57.79	$270.27	$4.68	$4.45 (1.53)

Table continues on next page.

Table 12 - continued

Fishery	Year	Processing operations	Finished weight (million lbs)	First wholesale value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
BST	2005	4	0.18	$0.91	$5.07	$4.60 (0.70)
	2006	9	0.72	$3.02	$4.20	$4.06 (0.34)
	2007	9	1.46	$7.52	$5.16	$5.13 (0.35)
	2008	10	1.34	$6.53	$4.89	$4.90 (0.25)
	2009	10	1.39	$5.99	$4.32	$4.30 (0.79)
	2010	7	--	--	--	--
PIK	1998	12	0.67	$5.80	$8.70	$8.55 (1.03)
SMB	1998	13	1.77	$13.29	$7.53	$7.62 (0.30)
	2009	6	--	--	--	--
	2010	8	0.91	$11.63	$12.71	$11.01 (3.08)
	2011	11	1.33	$18.83	$14.14	$13.73 (2.73)
	2012	10	1.17	$13.77	$11.78	$10.93 (4.26)
WAI [a]	1998	1	--	--	--	--
	2002	9	0.34	$5.89	$17.09	$16.68 (3.32)
	2003	9	0.33	$4.68	$14.34	$14.08 (0.57)

Source: ADF&G fish tickets, eLandings, ADF&G Commercial Operators Annual Report, NMFS AFSC BSAI Crab Economic Data.
Data shown by calendar year.

For 1998-2005 and 2012 wholesale production volume is estimated by multiplying the volume of ex-vessel commercial landings reported in fish tickets to the 1998-2005 or, for 2012, 2007-2011 mean product recovery rate calculated from COAR production and buying reports for processors reporting landings >=1000 lbs. in the relevant BSAI crab fishery. Production volume for 2006-2011 sourced from EDR data.

For 1998-2005 and 2012 wholesale value is estimated from COAR data by multiplying yearly estimate of wholesale production volume with the weighted first wholesale value per lb., by species, from COAR production reports for processors reporting processing in the given fishery and year. Wholesale value and prices for 2006-2011 are estimated by applying prices derived from EDR crab sales data to yearly estimates of wholesale production volume. Note that crab sales reported in the EDR may reflect sales from prior-year inventory.

Price results are sourced from crab processor EDR gross earnings reports where available (1998, 2001, 2004, and 2005-2011 for CR fisheries) and secondarily from COAR gross earnings estimates (all years for non-CR fisheries; 1999-2000, 2002-2003, 2012 for CR fisheries).

Weighted average price is calculated as the ratio of aggregate gross revenue value to sold volume as shown, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over processor-level observations (for subset of fishery/year for which EDR data are available), with standard deviation (sd) reported to indicate relative variability over individual observations.

[a] Excludes estimates of production from landings made in the 2000/2001 and 2001/2002 Western Aleutian Islands red king crab Petrel Bank test fishery.

Table 13: Statewide Crab Production, First Wholesale Value and Pricing for Selected Species

Species	Year	Processors	Finished weight (million lbs)	First wholesale value ($millions)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
crab, red king	1998	29	9.23	$79.74	$8.64	$8.46 (2.10)
	1999	31	7.05	$119.22	$16.91	$15.54 (4.22)
	2000	22	6.58	$67.05	$10.19	$12.17 (3.81)
	2001	30	6.35	$83.81	$13.20	$12.26 (4.25)
	2002	32	6.93	$117.34	$16.94	$15.24 (6.04)
	2003	38	10.5	$149.68	$14.25	$12.92 (4.60)
	2004	26	9.73	$124.85	$12.83	$11.88 (2.87)
	2005	23	12.5	$135.64	$10.85	$10.56 (4.28)
	2006	16	10.4	$93.62	$9.00	$8.09 (3.31)
	2007	19	13.32	$134.40	$10.09	$8.78 (2.71)
	2008	17	13.18	$143.98	$10.92	$9.59 (2.78)
	2009	18	10.96	$108.21	$9.87	$8.71 (3.01)
	2010	18	9.45	$132.90	$14.06	$12.27 (3.84)
	2011	25	6.03	$106.20	$17.62	$16.59 (6.16)
	2012	19	5.25	$78.13	$14.88	$13.32 (4.10)
crab, blue king	1998	19	2.08	$15.67	$7.53	$7.52 (0.99)
	1999	4	0.01	$0.08	$13.56	$10.94 (--)
	2000	2	--	--	--	--
	2001	1	--	--	--	--
	2002	1	--	--	--	--
	2003	1	--	--	--	--
	2005	1	--	--	--	--
	2009	4	0.19	$1.42	$7.44	$6.64 (--)
	2010	7	0.67	$8.24	$12.36	$10.92 (3.13)
	2011	12	1.25	$17.01	$13.66	$12.70 (4.89)
	2012	11	1.12	$13.88	$12.45	$10.69 (3.00)
crab, golden (brown) king	1998	13	2.92	$19.52	$6.69	$8.59 (2.19)
	1999	16	3.44	$34.20	$9.93	$9.32 (3.86)
	2000	16	4.92	$40.61	$8.26	$9.81 (3.41)
	2001	16	4.3	$44.52	$10.36	$9.68 (3.58)
	2002	16	3.82	$42.39	$11.11	$12.34 (4.80)
	2003	16	3.93	$45.00	$11.46	$12.27 (4.13)
	2004	13	4.65	$38.97	$8.38	$10.24 (3.65)
	2005	13	2.85	$21.96	$7.70	$8.76 (4.25)
	2006	14	3.65	$20.48	$5.61	$7.45 (3.96)
	2007	11	3.75	$25.06	$6.68	$7.89 (3.35)
	2008	13	3.89	$30.09	$7.73	$8.22 (2.84)
	2009	15	4.09	$25.55	$6.25	$7.45 (3.56)
	2010	17	5.13	$41.15	$8.02	$8.32 (2.85)
	2011	20	4.16	$45.67	$10.98	$11.16 (4.20)
	2012	21	3.95	$34.96	$8.86	$11.13 (4.92)

Table continues on next page.

Table 13 - continued

Species	Year	Processors	Finished weight (million lbs)	First wholesale value ($millions)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
crab, Tanner, bairdi	1998	16	1.65	$11.55	$6.99	$6.76 (3.49)
	1999	11	1.48	$8.78	$5.95	$6.49 (2.87)
	2000	10	1	$8.44	$8.41	$7.60 (1.85)
	2001	17	1.27	$9.58	$7.57	$6.95 (1.70)
	2002	12	0.74	$5.81	$7.85	$6.67 (2.20)
	2003	13	0.81	$7.27	$9.02	$7.88 (2.95)
	2004	12	0.94	$8.63	$9.18	$8.77 (1.76)
	2005	19	2.22	$12.30	$5.54	$6.42 (3.50)
	2006	21	2.94	$13.95	$4.74	$4.52 (1.45)
	2007	18	2.49	$13.02	$5.23	$5.93 (3.52)
	2008	22	2.44	$12.98	$5.33	$5.23 (1.88)
	2009	17	2.25	$9.91	$4.41	$4.87 (2.12)
	2010	17	1.9	$7.73	$4.06	$4.36 (1.07)
	2011	15	3.88	$25.53	$6.57	$6.76 (1.53)
	2012	15	3.08	$19.09	$6.20	$6.81 (2.62)
crab, Tanner, snow (opilio)	1998	34	157.2	$499.51	$3.18	$2.92 (0.90)
	1999	31	116.91	$509.13	$4.35	$3.61 (1.35)
	2000	23	22.78	$115.40	$5.07	$5.19 (2.00)
	2001	20	15.15	$84.72	$5.59	$5.01 (1.68)
	2002	25	20.84	$110.35	$5.30	$4.75 (1.41)
	2003	19	17.38	$112.27	$6.46	$6.53 (2.89)
	2004	22	15.3	$101.86	$6.66	$6.23 (1.44)
	2005	20	16.29	$80.77	$4.96	$4.57 (1.05)
	2006	13	27.89	$97.30	$3.49	$3.44 (0.91)
	2007	16	20.38	$94.61	$4.64	$4.72 (1.12)
	2008	16	31.35	$142.61	$4.55	$4.33 (1.01)
	2009	16	35.89	$140.59	$3.92	$3.79 (0.51)
	2010	12	29.91	$103.11	$3.45	$3.43 (1.07)
	2011	16	35.58	$190.17	$5.34	$5.08 (1.31)
	2012	15	59.05	$278.48	$4.72	$4.47 (1.10)

Source: ADF&G Commercial Operators Annual Report.

Data shown by calendar year. Includes processing of crab taken from stocks/fisheries other than those managed under the BSAI crab FMP.

Processor counts in Table 13 and Table 14 identify number of entities reporting crab production in the Commercial Operators Annual Report, including purchasers of crab that had all crab custom processed for them by other processors; this is distinct from processor counts in other tables, which show the number of processing plants engaging in crab processing activity.

Weighted average price is calculated as the ratio of total aggregate revenue to total aggregate volume, and thus does not include a measure of within-unit variation. Mean price per pound represents the arithmetic mean calculated over all observations reported at the level of plant-level observations of the ratio of annual gross revenue to finished production volume in a given fishery-year. Standard deviation is reported to indicate variation over vessel-level average prices, noting that large standard deviations are likely indicative of a non-symmetrical distribution.

Table 14: Statewide Crab Production by Product for Selected Species

Species	Year	Product	Processor	Finished weight (million lbs)	First wholesale value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
King, red	2007	Whole crab	10	$0.36	$3.07	$8.52	$8.70 (2.05)
		Sections	19	$12.86	$130.99	$10.18	$10.25 (0.95)
		Other	8	$0.10	$0.34	$3.52	$3.59 (1.28)
	2008	Whole crab	8	$0.44	$4.90	$11.05	$9.61 (2.46)
		Sections	17	$12.58	$138.35	$11.00	$10.87 (1.26)
		Other	7	$0.16	$0.73	$4.64	$4.43 (1.52)
	2009	Whole crab	11	$0.51	$1.60	$3.14	$8.43 (2.58)
		Sections	17	$10.34	$106.15	$10.27	$10.07 (2.15)
		Other	8	$0.12	$0.46	$4.00	$4.22 (1.79)
	2010	Whole crab	11	$0.22	$2.83	$12.89	$12.15 (3.24)
		Sections	17	$9.10	$129.47	$14.23	$14.39 (1.52)
		Other	8	$0.14	$0.60	$4.34	$5.91 (2.64)
	2011	Whole crab	15	$0.23	$3.80	$16.84	$15.25 (4.07)
		Sections	23	$5.72	$101.93	$17.81	$19.21 (3.16)
		Other	11	$0.08	$0.47	$5.91	$11.17 (10.28)
	2012	Whole crab	10	$0.29	$4.08	$13.83	$12.23 (3.28)
		Sections	18	$4.93	$73.85	$14.99	$15.51 (2.53)
		Other	6	$0.03	$0.20	$6.83	$6.54 (2.33)
King, blue	2009	Whole crab	1	--	--	--	-- (--)
		Sections	4	--	--	$7.56	$7.75 (--)
		Other	1	--	--	--	-- (--)
	2010	Whole crab	1	--	--	--	-- (--)
		Sections	7	--	--	$12.53	$11.96 (2.38)
		Other	1	--	--	--	-- (--)
	2011	Whole crab	2	--	--	--	-- (--)
		Sections	12	$1.22	$16.85	$13.78	$13.52 (5.11)
		Other	2	--	--	--	-- (--)
	2012	Whole crab	2	--	--	--	-- (--)
		Sections	10	$1.10	$13.71	$12.49	$11.14 (3.40)
		Other	2	--	--	--	-- (--)
King, golden	2007	Whole crab	6	$0.46	$3.46	$7.55	$7.58 (1.21)
		Sections	7	$2.96	$19.43	$6.57	$7.44 (2.46)
		Other	4	$0.34	$2.17	$6.41	$9.22 (--)
	2008	Whole crab	8	$0.51	$3.80	$7.41	$7.01 (1.23)
		Sections	8	$2.96	$23.14	$7.81	$8.84 (1.97)
		Other	4	$0.42	$3.14	$7.52	$9.02 (--)
	2009	Whole crab	8	--	--	$6.62	$6.33 (1.64)
		Sections	10	$3.31	$20.33	$6.15	$7.78 (3.03)
		Other	3	--	--	--	-- (--)
	2010	Whole crab	12	--	--	$6.13	$7.01 (1.44)
		Sections	11	$4.04	$34.42	$8.52	$9.52 (1.34)
		Other	3	--	--	--	-- (--)
	2011	Whole crab	10	--	--	$9.87	$9.71 (1.14)
		Sections	14	$3.40	$38.11	$11.22	$11.92 (4.26)
		Other	3	--	--	--	-- (--)
	2012	Whole crab	11	$0.62	$6.69	$10.74	$10.56 (2.71)
		Sections	15	$3.32	$28.21	$8.50	$11.17 (4.69)
		Other	4	$0.01	$0.05	$9.17	$12.46 (--)

Table continues on next page.

Table 14 – continued

Species	Year	Product	Processor	Finished weight (million lbs)	First wholesale value ($million)	Price ($/pound) Weighted average	Price ($/pound) Mean (sd)
Tanner, bairdi	2007	Whole crab	4	--	--	$3.80	$7.27 (--)
		Sections	18	$2.46	$12.89	$5.25	$5.68 (1.06)
		Other	1	--	--	--	-- (--)
	2008	Whole crab	4	$0.00	$0.01	$3.64	$3.05 (--)
		Sections	22	$2.39	$12.80	$5.36	$5.52 (1.25)
		Other	4	$0.04	$0.17	$3.91	$5.76 (--)
	2009	Whole crab	3	--	--	--	-- (--)
		Sections	16	$2.20	$9.81	$4.46	$4.92 (1.39)
		Other	4	--	--	$3.13	$6.09 (--)
	2010	Whole crab	6	--	--	$2.95	$3.48 (1.37)
		Sections	16	$1.45	$6.38	$4.40	$4.65 (0.85)
		Other	1	--	--	--	-- (--)
	2011	Whole crab	5	$0.30	$2.28	$7.57	$5.51 (2.00)
		Sections	14	$3.49	$22.69	$6.51	$6.88 (1.12)
		Other	4	$0.10	$0.56	$5.87	$7.69 (--)
	2012	Whole crab	6	--	--	$7.83	$6.10 (2.03)
		Sections	13	$2.73	$16.32	$5.99	$6.54 (1.34)
		Other	1	--	--	--	-- (--)
Tanner, opilio (snow)	2007	Whole crab	1	--	--	--	-- (--)
		Sections	16	--	--	$4.66	$4.75 (0.23)
		Other	2	--	--	--	-- (--)
	2008	Whole crab	1	--	--	--	-- (--)
		Sections	16	--	--	$4.56	$4.64 (0.30)
		Other	3	--	--	--	-- (--)
	2009	Sections	16	--	--	$3.93	$3.94 (0.20)
		Other	1	--	--	--	-- (--)
	2010	Whole crab	1	--	--	--	-- (--)
		Sections	12	--	--	$3.45	$3.52 (1.07)
		Other	1	--	--	--	-- (--)
	2011	Whole crab	1	--	--	--	-- (--)
		Sections	16	--	--	$5.35	$5.06 (1.36)
		Other	1	--	--	--	-- (--)
	2012	Whole crab	2	--	--	--	-- (--)
		Sections	15	--	--	$4.73	$4.58 (0.87)
		Other	1	--	--	--	-- (--)

Source: ADF&G Commercial Operators Annual Report.

Data shown by calendar year. Includes processing of crab taken from stocks/fisheries other than those managed under the BSAI crab FMP.

Processor counts in Table 13 and Table 14 identify number of entities reporting crab production in the Commercial Operators Annual Report, including purchasers of crab that had all crab custom processed for them by other processors; this is distinct from processor counts in other tables, which show the number of processing plants engaging in crab processing activity.

Weighted average price is calculated as the ratio of total aggregate revenue to total aggregate volume, and thus does not include a measure of within-unit variation. Mean price per pound represents the arithmetic mean calculated over all observations reported at the level of plant-level observations of the ratio of annual gross revenue to finished production volume in a given fishery-year. Standard deviation is reported to indicate variation over vessel-level average prices, noting that large standard deviations are likely indicative of a non-symmetrical distribution.

Table 15: Captain and Crew Share Payments, and Crab-Equivalent Crew Pay, CR Program Fisheries

			Captain share payment ($million)			Crew share payment ($million)		CV Crew payment, crab equivalent (1000 lbs)		
Fishery	Sector	Year	Vessel obs.	Total	Per vessel, median	Total	Per vessel, median	Vessel obs.	Total	Per vessel, median
AIG	CP	98/01/04	4 (2)	--	--	--	--	n/d	n/d	n/d
		2005	1	--	--	--	--	n/d	n/d	n/d
		2006	1	--	--	--	--	n/d	n/d	n/d
		2007	1	--	--	--	--	n/d	n/d	n/d
		2008	1	--	--	--	--	n/d	n/d	n/d
	CV	98/01/04	50 (21)	$2.04	$0.07	$4.22	$0.15	50 (21)	1002.58	40.24
		2005	10	$1.07	$0.07	$1.97	$0.17	10	583.75	46.18
		2006	6	$0.51	$0.07	$0.92	$0.12	6	386.17	58.24
		2007	6	$0.59	$0.09	$1.20	$0.19	6	466.01	66.47
		2008	4	--	--	--	--	4	--	--
	CVCP	2009	5	$1.20	$0.22	$2.03	$0.41	4	--	--
		2010	5	$1.81	$0.28	$3.18	$0.64	4	--	--
		2011	5	$2.09	$0.35	$3.85	$0.65	4	--	--
		2012	6	$1.76	$0.31	$3.42	$0.62	5	696.72	175.67
BBR	CP	98/01/04	20 (9)	$0.24	$0.03	$0.76	$0.10	n/d	n/d	n/d
		2005	3	--	--	--	--	n/d	n/d	n/d
		2006	3	--	--	--	--	n/d	n/d	n/d
		2007	3	--	--	--	--	n/d	n/d	n/d
		2008	3	--	--	--	--	n/d	n/d	n/d
	CV	98/01/04	626 (249)	$7.25	$0.03	$14.99	$0.06	618 (249)	2551.38	10.88
		2005	84	$6.87	$0.07	$13.08	$0.13	84	2261.70	22.81
		2006	79	$4.69	$0.06	$9.26	$0.11	79	2002.05	23.45
		2007	70	$6.27	$0.08	$12.58	$0.15	70	2391.78	27.60
		2008	76	$6.74	$0.08	$14.92	$0.17	76	2568.73	29.74
	CVCP	2009	70	$4.83	$0.07	$10.19	$0.13	68	1848.95	24.50
		2010	65	$6.24	$0.10	$13.10	$0.19	63	1630.31	24.96
		2011	62	$4.80	$0.08	$10.34	$0.15	59	942.64	14.07
		2012	66	$3.54	$0.05	$7.85	$0.10	62	958.50	13.55
BSS	CP	98/01/04	18 (8)	$0.60	$0.10	$1.86	$0.29	n/d	n/d	n/d
		2005	6	$0.21	$0.04	$0.61	$0.08	n/d	n/d	n/d
		2006	4	--	--	--	--	n/d	n/d	n/d
		2007	4	--	--	--	--	n/d	n/d	n/d
		2008	4	--	--	--	--	n/d	n/d	n/d

Table continues on next page.

Table 15- continued

Fishery	Sector	Year	Vessel obs.	Captain share payment ($million) Total	Captain share payment ($million) Per vessel, median	Crew share payment ($million) Total	Crew share payment ($million) Per vessel, median	CV Crew payment, crab equivalent (1000 lbs) Vessel obs.	CV Crew payment, crab equivalent (1000 lbs) Total	CV Crew payment, crab equivalent (1000 lbs) Per vessel, median
	CV	98/01/04	517 (210)	$10.44	$0.04	$21.64	$0.09	510 (210)	18059.94	33.92
		2005	150	$6.03	$0.04	$11.72	$0.07	150	5335.74	31.02
		2006	74	$3.21	$0.04	$6.41	$0.07	74	4787.81	56.65
		2007	65	$4.52	$0.07	$9.51	$0.13	64	4701.20	63.39
		2008	74	$8.06	$0.11	$16.94	$0.21	74	8833.86	108.04
	CVCP	2009	77	$6.15	$0.08	$13.89	$0.16	73	7687.66	97.27
		2010	68	$4.19	$0.06	$9.33	$0.12	66	6625.45	88.79
		2011	68	$8.63	$0.13	$19.28	$0.27	66	7350.30	104.28
		2012	72	$11.97	$0.17	$26.39	$0.37	70	11920.76	164.03
BST	CP	2006	1	--	--	--	--	n/d	n/d	n/d
		2007	1	--	--	--	--	n/d	n/d	n/d
		2008	1	--	--	--	--	n/d	n/d	n/d
	CV	2005	4	--	--	--	--	4	--	--
		2006	25	$0.13	$0.00	$0.25	$0.00	25	135.42	2.46
		2007	21	$0.34	$0.01	$0.66	$0.02	21	308.06	9.22
		2008	26	$0.32	$0.01	$0.55	$0.01	26	259.61	6.73
	CVCP	2009	14	$0.35	$0.02	$0.58	$0.03	13	256.98	13.71
		2010	4	--	--	--	--	4	--	--
PIK	CV	98/01/04	42 (42)	$0.31	$0.01	$0.61	$0.01	42 (42)	163.87	3.22
SMB [a]	CP	98/01/04	2 (2)	--	--	--	--	n/d	n/d	n/d
	CV	98/01/04	92 (92)	$0.74	$0.01	$1.35	$0.01	88 (88)	429.84	4.09
		2009	7	$0.07	$0.01	$0.17	$0.02	7	49.67	5.97
		2010	11	$0.48	$0.04	$0.91	$0.07	10	163.26	13.60
		2011	17	$0.58	$0.03	$1.23	$0.06	17	232.83	10.69
		2012	17	$0.38	$0.02	$0.83	$0.04	17	193.43	10.16
WAI [b]	CP	98/01/04	2 (1)	--	--	--	--	n/d	n/d	n/d
	CV	98/01/04	3 (3)	--	--	--	--	3 (3)	--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year; statistics shown for *98/01/04* are calculated over the 1998, 2001, and 2004 calendar years, with *vessel obs*. indicating total vessel-level observations, and unique vessels (in parentheses) over the 3-year period. Starting in 2009, data are summarized over all harvesting sectors (CVCP) to preserve confidentiality.

Crew and captain share payment statistics show total aggregate and vessel-level median payment by fishery/sector/year. Share payment reflects amount paid for harvesting labor and includes post-season adjustments, bonuses, and deductions for shared expenses such as fuel, bait, and food and provisions, where applicable; excludes any royalty or capital-rent payments for IFQ or vessel ownership share held by captain or crew members. Crab-equivalent crew pay represents crew share payment value in terms of pounds of landed crab, which normalizes over year-to-year changes in ex-vessel price; calculated for catcher vessels (excludes catcher/processor sector, which do not report ex-vessel landings or revenue) by dividing vessel crew share payment by the vessel-specific average ex-vessel price per pound (ex-vessel revenue/landed pounds).

[a] No catcher/processor operations reported fishing activity in the SMB fishery from 2009 to 2012. [b] 2001 WAI fishery was closed except for Petrel Bank test fishery.

Table 16: Harvesting Sector Employment, CR Program Fisheries

				Crew positions		Crew participants	
Fishery	Sector	Year	Vessels	Total	Mean (sd) per vessel	Total	Mean (sd) per vessel
AIG [c]	CP	98/01/04	4 (2)	n/d	n/d	--	--
		2005	1	--	--	--	--
		2006	1	--	--	--	--
		2007	1	--	--	--	--
		2008	1	--	--	--	--
	CV	98/01/04	52 (22)	115	6.7 (1.0)	131	7.6 (2.1)
		2005	10	58	5.8 (1.1)	72	7.2 (2.6)
		2006	6	38	6.3 (0.5)	48	7.9 (2.6)
		2007	6	38	6.3 (--)	40	6.7 (--)
		2008	4	--	--	--	--
	CVCP	2009	5	35	7.0 (--)	43	8.6 (--)
		2010	5	35	7.0 (--)	43	8.5 (--)
		2011	5	36	7.2 (--)	38	7.6 (--)
		2012	6	46	7.7 (1.2)	n/d	n/d
BBR	CP	98/01/04	20 (9)	n/d	n/d	70	10.5 (2.1)
		2005	3	--	--	--	--
		2006	3	--	--	--	--
		2007	3	--	--	--	--
		2008	3	--	--	--	--
	CV	98/01/04	633 (250)	1233	5.9 (0.9)	1304	6.2 (1.2)
		2005	84	472	5.6 (0.8)	493	5.9 (1.0)
		2006	79	445	5.6 (0.8)	465	5.9 (1.1)
		2007	70	407	5.8 (0.8)	419	6.0 (0.9)
		2008	76	452	6.0 (0.9)	473	6.2 (1.1)
	CVCP	2009	70	443	6.3 (2.4)	435	6.2 (1.0)
		2010	65	422	6.5 (2.9)	412	6.3 (1.2)
		2011	62	413	6.7 (3.2)	401	6.5 (1.2)
		2012	64	427	6.7 (2.7)	n/d	n/d
BSS	CP	98/01/04	18 (8)	n/d	n/d	78	12.9 (5.3)
		2005	6	69	11.5 (4.8)	59	9.8 (1.5)
		2006	4	--	--	--	--
		2007	4	--	--	--	--
		2008	4	--	--	--	--
	CV	98/01/04	524 (210)	1049	6.0 (0.9)	1139	6.5 (1.5)
		2005	150	856	5.7 (0.7)	857	5.7 (0.7)
		2006	74	418	5.7 (0.8)	448	6.1 (1.2)
		2007	65	377	5.8 (0.8)	400	6.2 (1.1)
		2008	74	447	6.0 (0.8)	489	6.6 (1.4)
	CVCP	2009	77	536	7.0 (4.1)	522	6.8 (1.8)
		2010	68	444	6.5 (2.6)	442	6.5 (1.3)
		2011	68	453	6.7 (2.9)	463	6.8 (1.7)
		2012	72	502	7.0 (3.6)	n/d	n/d

Table continues on next page.

Table 16 - continued

Fishery	Sector	Year	Vessels	Crew positions Total	Crew positions Mean (sd) per vessel	Crew participants Total	Crew participants Mean (sd) per vessel
BST	CP	2006	1	--	--	--	--
		2007	1	--	--	--	--
		2008	1	--	--	--	--
	CV	2005	4	--	--	--	--
		2006	25	140	5.6 (1.0)	143	5.7 (1.0)
		2007	22	118	5.4 (0.7)	131	6.0 (0.8)
		2008	26	146	5.6 (0.8)	162	6.2 (1.3)
	CVCP	2009	14	102	7.3 (5.2)	96	6.9 (2.5)
		2010	4	--	--	--	--
PIK	CV	98/01/04	43 (43)	207	4.8 (0.9)	219	5.1 (0.9)
SMB [a]	CP	98/01/04	2 (2)	n/d	n/d	--	--
	CV	98/01/04	94 (94)	489	5.2 (0.8)	516	5.5 (0.8)
		2009	7	39	5.6 (0.8)	40	5.7 (0.8)
		2010	11	63	5.7 (0.7)	66	6.0 (0.9)
		2011	17	112	6.6 (1.1)	118	6.9 (1.4)
		2012	17	106	6.2 (1.0)	n/d	n/d
WAI [b]	CP	98/01/04	2 (1)	n/d	n/d	--	--
	CV	98/01/04	3 (3)	--	--	--	--

Source: NMFS AFSC BSAI Crab Economic Data. 2005 and later crew positions information from eLandings.

Data shown by calendar year; statistics shown for 98/01/04 are calculated over the 1998, 2001, and 2004 calendar years, with vessel column indicating count of vessel-level observations, and unique vessels (in parentheses) over the 3-year period. Starting in 2009, data are summarized over all harvesting sectors (CVCP) to preserve confidentiality.

Total count and mean per vessel statistics by fishery/sector/year are shown for crew positions in the active fleet and unique crew members receiving payment for crab fishing; statistics include fishing crew and captain, excludes processing-only employees on CPs. Larger values for crew participant statistics relative to crew positions for a fishery/sector/year mainly reflect rotation in crew during the season.

Crew positions statistics are calculated using average fishing crew size reported in EDR data for 1998/04/05 (data not collected for CPs). As of 2005 calendar years (2006 for BSS fishery), crew positions are calculated using eLandings data on count of crew on-board reported by trip. CP crew positions statistics are inclusive of processing crew, as reported in the EDR and/or eLandings.

Crew participant statistics are calculated using EDR data on fishing crew pay settlements; statistics for 1998-2004 may slightly undercount number of crew participants due to discontinuity in EDR definition of fishing crew. Crew participants reporting was discontinued in the EDR beginning in 2012.

[a] No catcher/processor operations reported fishing activity in the SMB fishery from 2009 to 2012.

[b] 2001 WAI fishery was closed except for Petrel Bank test fishery.

[c] As elsewhere in this document, data for EAG and WAG fisheries are summarized in aggregate for Aleutian Islands golden king crab (AIG) fishery to preserve confidentiality; where vessel crew data are reported for both the EAG and WAG fisheries, mean figures over the two fisheries for crew participants and crew positions were used in place of cumulative figures under the assumption that the same individuals are employed in both fisheries.

Table 17: Participating Licensed Crew Members and Gear Operators by Alaska Residence, CR Program Fisheries

	Crew license holders				Gear operators			
Year	Alaska non-resident	Alaska resident	Unknown	Total crew license holders	Alaska non-resident	Alaska resident	Total gear operators	Total crew and gear operators
1998	n/d	n/d	n/d	n/d	243	106	349	n/d
1999	n/d	n/d	n/d	n/d	246	105	351	n/d
2000	n/d	n/d	n/d	n/d	208	90	298	n/d
2001	n/d	n/d	n/d	n/d	210	78	288	n/d
2002	n/d	n/d	n/d	n/d	204	77	281	n/d
2003	n/d	n/d	n/d	n/d	199	82	281	n/d
2004	n/d	n/d	n/d	n/d	197	81	278	n/d
2005[a]	n/d	n/d	n/d	n/d	137	56	193	n/d
2006[a]	332	192	10	534	94	38	132	666
2007	338	190	2	530	72	28	100	630
2008	416	212	3	631	88	31	119	750
2009	381	187	1	569	82	28	110	679
2010	345	166	4	515	69	30	99	614
2011	346	182	2	530	66	27	93	623
2012	391	196	7	594	80	32	112	706

Source: NMFS AFSC BSAI Crab Economic Data, ADF&G commercial crewmember license files, ADF&G fish tickets, eLandings.

Data shown by calendar year. Excludes crewmembers working solely on the processing line. A commercial crewmember license or CFEC Gear Operator permit is required of any individual participating directly or indirectly in taking of raw fishery products on a commercial vessel, including cooks, engineers, and individuals handling fishing gear or involved in maintenance or operation of the vessel.

[a] Note that crew license and gear operator permit number reporting in EDR data was likely incomplete for 2005 and 2006, but is largely accurate for 2007 and subsequent years due to improvements in EDR administration implemented by the NMFS EDR data collection agent (PSMFC), including providing lookup support to EDR submitters and online access to crew license and gear operator permit registries.

Table 18: Active CFEC Gear Operator Permit Holders: Count of Permit Holders Reported on Crab Fishery Landings and Share of CR Fishery Ex-vessel Value Landed on Associated Vessels, by State of Residence

		Non-Alaska residents		Alaska residents	
Fishery	Year	Permit holders[a]	Associated share of landed ex-vessel value[b]	Permit holders[a]	Associated share of landed ex-vessel value[b]
AIG	1998	24	--	2	--
	1999	21	--	5	--
	2000	23	--	3	--
	2001	24	97%	4	3%
	2002	25	--	3	--
	2003	19	--	3	--
	2004	21	--	3	--
	2005	10	100%	0	0%
	2006	9	--	1	--
	2007	5	--	1	--
	2008	6	--	1	--
	2009	7	100%	0	0%
	2010	8	--	1	--
	2011	5	--	2	--
	2012	7	--	1	--
BBR	1998	186	76%	87	24%
	1999	185	74%	72	26%
	2000	174	73%	70	27%
	2001	164	77%	66	23%
	2002	176	73%	67	27%
	2003	180	79%	73	21%
	2004	183	78%	73	22%
	2005	69	78%	33	22%
	2006	59	76%	28	24%
	2007	55	78%	19	22%
	2008	64	79%	21	21%
	2009	54	78%	21	22%
	2010	50	77%	20	23%
	2011	44	78%	18	22%
	2012	47	77%	18	23%
BSS	1998	183	77%	72	23%
	1999	194	75%	81	25%
	2000	156	72%	74	28%
	2001	154	81%	54	19%
	2002	138	77%	56	23%
	2003	136	76%	56	24%
	2004	137	78%	53	22%
	2005	126	78%	45	22%
	2006	74	84%	18	16%
	2007	58	76%	19	24%
	2008	72	82%	21	18%
	2009	69	83%	19	17%
	2010	55	78%	21	22%
	2011	55	79%	19	21%
	2012	69	79%	24	21%

Table continues on next page.

Table 18 - continued

		Non-Alaska residents		Alaska residents	
Fishery	Year	Permit holders[a]	Associated share of landed ex-vessel value[b]	Permit holders[a]	Associated share of landed ex-vessel value[b]
BST	2005	4	100%	0	0%
	2006	38	89%	10	11%
	2007	25	79%	9	21%
	2008	28	83%	6	17%
	2009	17	--	3	--
	2010	2	--	2	--
PIK	1998	23	43%	34	57%
SMB	1998	97	75%	34	25%
	2009	5	--	2	--
	2010	7	67%	4	33%
	2011	14	76%	4	24%
	2012	11	66%	7	34%
WAI [c]	1998	1	100%	0	0%
	2002	26	82%	7	18%
	2003	26	88%	4	12%

Source: ADF&G fish tickets, eLandings, CFEC pricing, CFEC gear operator permit data.

Data shown by calendar year.

[a] Count of unique holders of CFEC Gear Operator permits recorded on ADF&G fish tickets for BSAI crab landings

[b] Percentage share of total aggregate crab fishery ex-vessel value represented by summed value of crab landings associated with Gear Operator permits, by State of Residence

[c] 2001 Petrel Bank test fishery excluded.

Table 19: Processing Labor Payments, CR Program Fisheries

				Labor payments ($1000)		Processing wages, median ($)		
Fishery	Sector	Year	Processors	Total	Median per plant	Per position	Per hour	Per finished pound
AIG [a]	CP	98/01/04	4 (2)	--	--	--	n/d	--
		2005	2	--	--	--	n/d	--
		2006	1	--	--	--	n/d	--
		2007	1	--	--	--	n/d	--
		2008	1	--	--	--	n/d	--
	SF	98/01/04	13 (7)	$806	$168	$1581	$13.27	$0.26
		2005	4	--	--	--	--	--
		2006	6	$539	$20	$1186	$11.45	$0.14
		2007	5	$813	$65	$1433	$11.20	$0.19
		2008	6	$585	$101	--	$12.38	$0.24
	SFCP	2009	5	$939	$147	$1219	--	--
		2010	4	--	--	--	--	--
		2011	7	$1098	$74	$348	$9.89	$0.18
		2012	8	$1089	$58	n/d	$10.03	n/d
BBR	CP	98/01/04	18 (10)	$316	$49	$4276	n/d	$0.56
		2005	4	--	--	--	n/d	--
		2006	3	--	--	--	n/d	--
		2007	3	--	--	--	n/d	--
		2008	3	--	--	--	n/d	--
	SF	98/01/04	40 (20)	$1855	$119	$1383	$14.24	$0.26
		2005	11	$2518	$226	$2046	$12.30	$0.23
		2006	11	$2180	$175	$1557	$11.65	$0.24
		2007	11	$3028	$249	$2137	$12.24	$0.23
		2008	11	$2965	$301	$2891	$11.89	$0.26
	SFCP	2009	12	$2408	$139	$2529	$11.29	$0.24
		2010	13	$2403	$194	$2399	$9.95	$0.22
		2011	14	$1202	$73	$971	$10.06	$0.20
		2012	12	$1156	$66	n/d	$10.63	n/d
BSS	CP	98/01/04	17 (8)	$826	$130	$9724	n/d	$0.33
		2005	6	$308	$38	$4589	n/d	$0.28
		2006	4	--	--	--	n/d	--
		2007	4	--	--	--	n/d	--
		2008	4	--	--	--	n/d	--
	SF	98/01/04	50 (24)	$15350	$493	$3009	$13.63	$0.28
		2005	13	$3709	$304	$1703	$12.22	$0.25
		2006	10	$5012	$568	$3262	$11.50	$0.24
		2007	10	$5457	$501	$3799	$11.97	$0.28
		2008	12	$9432	$540	$4377	$11.56	$0.25
	SFCP	2009	14	$7403	$339	$8215	$11.38	$0.22
		2010	11	$5641	$373	$4801	$10.14	$0.22
		2011	14	$5952	$345	$3885	$10.21	$0.22
		2012	13	$11759	$600	n/d	$10.20	n/d

Table continues on next page.

Table 19 - continued

				Labor payments ($1000)		Processing wages, median ($)		
Fishery	Sector	Year	Processors	Total	Median per plant	Per position	Per hour	Per finished pound
BST	CP	2006	1	--	--	--	n/d	--
		2007	1	--	--	--	n/d	--
		2008	1	--	--	--	n/d	--
	SF	2005	7	$97	$5	$101	$11.92	$0.30
		2006	8	$157	$15	$212	$11.48	$0.22
		2007	7	$386	$49	$830	$11.21	$0.24
		2008	8	$464	$49	$599	$11.62	$0.30
	SFCP	2009	8	$314	$36	$270	$10.88	$0.22
		2010	5	$64	$7	$141	$10.16	--
PIK	SF	98/01/04	13 (13)	$281	$19	$531	$12.85	$0.28
SMB	CP	98/01/04	1 (1)	--	--	--	n/d	--
	SF	98/01/04	10 (10)	$688	$38	$608	$12.23	$0.26
		2009	2	--	--	--	--	--
		2010	5	$172	$4	$72	$9.90	$0.21
		2011	6	$145	$8	$121	$9.11	$0.19
		2012	6	$238	$7	n/d	$9.59	n/d
WAI	CP	98/01/04	2 (1)	--	--	--	n/d	--
	SF	98/01/04	1 (1)	--	--	--	--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year; statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Processors* column indicates count of processing operation-level observations (including catcher-processors) over the 3-year period, with count of distinct operations in the three-year series in parentheses. Starting in 2009, data are summarized over all processing sectors (SFCP) to preserve confidentiality.

Processing labor payments exclude benefits and indirect expenses paid on behalf of processing workers and payments to salaried workers employed by processors (see Table 24). Where applicable, these figures include bonuses and deductions to labor payments for shared expenses such as food and provisions.

Number of observations for pro-rata statistics (pay per plant, worker, and finished pounds) may differ from the number of observations for total labor payments due to missing observations for the denominator variable (i.e., mean number of processing positions, processing labor hours, and finished production pounds) in the fishery-year of interest. Outlier observations are excluded in the calculation of mean and standard deviation values for pro-rata statistics (pay per worker, pay per hour, and pay per pound).

Per position and per finished pound pro rata statistics discontinued beginning in 2012 due to discontinuation of processing positions and finished pounds reporting in the EDR.

Median pay per hour values are representative of the shoreside and floating processor sectors only.

[a] Data for EAG and WAG fisheries are summarized together as the 'AIG' fishery. Where a submitter reported separate labor payments and processing positions in the two fisheries, the maximum reported number of processing positions, rather than the sum of processing positions over the two fisheries, is used to calculate pay per worker statistics. All other variables used in pro-rata statistics for the AIG fisheries are treated cumulatively.

Table 20: Processing Employment, CR Program Fisheries

				Processing positions		Processing labor hours		
Fishery	Sector	Year	Processors	Total	Median per plant	Total (1000)	Median per plant (1000)	Median per position
AIG[a]	CP	98/01/04	4 (2)	--	--	n/d	n/d	n/d
		2005	2	--	--	n/d	n/d	n/d
		2006	1	--	--	n/d	n/d	n/d
		2007	1	--	--	n/d	n/d	n/d
		2008	1	--	--	n/d	n/d	n/d
	SF	98/01/04	13 (7)	376	97	54	13.99	188
		2005	4	--	--	--	--	--
		2006	6	289	35	47	0.97	45
		2007	5	404	60	72	4.28	145
		2008	6	296	45	38	2.76	156
	SFCP	2009	5	383	35	--	--	--
		2010	4	--	--	--	--	--
		2011	7	758	80	49	4.79	33
		2012	8	n/d	n/d	53	2.60	n/d
BBR	CP	98/01/04	18 (10)	69	10	n/d	n/d	n/d
		2005	4	--	--	n/d	n/d	n/d
		2006	3	--	--	n/d	n/d	n/d
		2007	3	--	--	n/d	n/d	n/d
		2008	3	--	--	n/d	n/d	n/d
	SF	98/01/04	40 (20)	1400	84	142	9.96	99
		2005	11	1024	82	202	12.12	148
		2006	11	1027	72	180	10.76	118
		2007	11	965	85	261	25.22	216
		2008	11	873	81	245	12.58	299
	SFCP	2009	12	1132	82	199	16.06	152
		2010	13	1106	75	212	20.09	237
		2011	14	1272	77	104	6.71	77
		2012	12	n/d	n/d	100	6.51	n/d
BSS	CP	98/01/04	17 (8)	82	15	n/d	n/d	n/d
		2005	6	62	10	n/d	n/d	n/d
		2006	4	--	--	n/d	n/d	n/d
		2007	4	--	--	n/d	n/d	n/d
		2008	4	--	--	n/d	n/d	n/d
	SF	98/01/04	50 (24)	2481	124	1134	36.21	248
		2005	13	1487	110	302	23.68	190
		2006	10	1061	72	445	49.45	269
		2007	10	1140	106	442	41.29	324
		2008	12	1170	85	712	30.52	539
	SFCP	2009	14	1302	83	600	58.41	413
		2010	11	1189	85	534	50.90	390
		2011	14	1601	97	555	45.69	337
		2012	13	n/d	n/d	1087	77.94	n/d
BST	CP	2006	1	--	--	n/d	n/d	n/d
		2007	1	--	--	n/d	n/d	n/d
		2008	1	--	--	n/d	n/d	n/d
	SF	2005	7	401	53	8	0.40	8
		2006	8	668	86	14	1.25	18
		2007	7	445	60	35	4.97	84
		2008	8	647	85	27	2.93	48
	SFCP	2009	8	807	98	29	4.27	24
		2010	5	477	80	6	0.70	14

Table continues on next page.

Table 20 - continued

				Processing positions		Processing labor hours		
Fishery	Sector	Year	Processors	Total	Median per plant	Total (1000)	Median per plant (1000)	Median per position
PIK	SF	98/01/04	13 (13)	669	28	25	1.03	62
SMB [b]	CP	98/01/04	1 (1)	--	--	n/d	n/d	n/d
	SF	98/01/04	10 (10)	820	79	55	3.08	53
		2009	2	--	--	--	--	--
		2010	5	487	65	19	0.40	8
		2011	6	613	64	17	0.84	12
		2012	6	n/d	n/d	21	0.76	n/d
WAI	CP	98/01/04	2 (1)	--	--	n/d	n/d	n/d
	SF	98/01/04	1 (1)	--	--	--	--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year. Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Processors* column indicates count of processing operation-level observations (including catcher-processors) over the 3-year period; numbers in parentheses show count of unique processing operations participating within the three years. Starting in 2009, data are summarized over all processing sectors (SFCP) to preserve confidentiality.

Processing positions reporting discontinued beginning in 2012.

Total processing positions statistics exclude salaried workers employed in the processing sectors (see Table 24).

Processing labor hours reflect shoreside and floating processor sectors only..

[a] Data for EAG and WAG fisheries are summarized together as the 'AIG' fishery. Where a submitter reported processing employment in both EAG and WAG fisheries, the maximum reported number of processing positions, rather than the sum of processing positions, is used to calculate total and mean processing positions.

[b] No catcher/processor operations reported processing activity in the SMB fishery from 2009 to 2012.

Table 21: Shoreside and Floating Processor Employee Residence, CR Program Fisheries

Year	Processors	Alaska	Other US states and territories	Non-US	Total
2005	17	604	2,231	37	2,872
2006	13	524	2,134	2	2,660
2007	14	738	2,447	7	3,192
2008	13	923	2,980	6	3,909
2009	12	800	2,289	23	3,112
2010	12	767	2,189	367	3,323
2011	13	800	2,008	8	2,816
2012	13	647	2,632	12	3,291

Source: NMFS AFSC BSAI Crab Economic Data.

Table 22: Harvest Revenue Net and Gross Share Distribution, CR Program Fisheries

				Net share distribution		Gross share distribution	
Sector	Fishery	Year	Share	Vessels*	Median share	Vessels*	Median share
CV	ALL	98/01/04	Owner	660 (257)	60%	n/d	n/d
			Captain/crew		40%	640 (250)	35%
	AIG	2005	Owner	10	65%	n/d	n/d
			Labor total		35%	10	21%
			Captain		14%		8%
			Crew		23%		14%
		2006	Owner	6	64%	n/d	n/d
			Labor total		36%	6	17%
			Captain		13%		6%
			Crew		25%		11%
		2007	Owner	6	60%	n/d	n/d
			Labor total		40%	6	18%
			Captain		13%		6%
			Crew		25%		12%
		2008	Owner	4	--	n/d	n/d
			Labor total		--	4	--
			Captain		--		--
			Crew		--		--
		2009	Owner	4	--	n/d	n/d
			Labor total		--	4	--
			Captain		--		--
			Crew		--		--
		2010	Owner	4	--	n/d	n/d
			Labor total		--	4	--
			Captain		--		--
			Crew		--		--
		2011	Owner	4	--	n/d	n/d
			Labor total		--	4	--
			Captain		--		--
			Crew		--		--
		2012	Labor total	n/d	n/d	5	18%
			Captain		n/d		5%
			Crew		n/d		13%
	BBR	2005	Owner	82	61%	n/d	n/d
			Labor total		39%	83	23%
			Captain		13%		8%
			Crew		25%		15%
		2006	Owner	78	61%	n/d	n/d
			Labor total		39%	77	23%
			Captain		13%		8%
			Crew		26%		15%
		2007	Owner	69	61%	n/d	n/d
			Labor total		40%	70	21%
			Captain		14%		7%
			Crew		26%		14%

Table continues on next page.

Table 22 - continued

Sector	Fishery	Year	Share	Net share distribution Vessels*	Net share distribution Median share	Gross share distribution Vessels*	Gross share distribution Median share
		2008	Owner	75	61%	n/d	n/d
			Labor total		39%	75	21%
			Captain		14%		7%
			Crew		26%		13%
		2009	Owner	67	61%	n/d	n/d
			Labor total		40%	67	20%
			Captain		13%		6%
			Crew		26%		12%
		2010	Owner	62	60%	n/d	n/d
			Labor total		40%	61	18%
			Captain		13%		6%
			Crew		27%		12%
		2011	Owner	59	60%	n/d	n/d
			Labor total		40%	58	19%
			Captain		13%		7%
			Crew		27%		13%
		2012	Labor total	n/d	n/d	60	20%
			Captain		n/d		6%
			Crew		n/d		14%
	BSS	2005	Owner	150	60%	n/d	n/d
			Labor total		40%	147	35%
			Captain		14%		12%
			Crew		26%		23%
		2006	Owner	73	61%	n/d	n/d
			Labor total		39%	73	22%
			Captain		13%		7%
			Crew		26%		15%
		2007	Owner	63	61%	n/d	n/d
			Labor total		39%	63	23%
			Captain		13%		8%
			Crew		26%		15%
		2008	Owner	73	61%	n/d	n/d
			Labor total		39%	73	23%
			Captain		13%		8%
			Crew		26%		15%
		2009	Owner	74	61%	n/d	n/d
			Labor total		39%	72	22%
			Captain		13%		7%
			Crew		26%		15%
		2010	Owner	65	60%	n/d	n/d
			Labor total		40%	65	22%
			Captain		13%		7%
			Crew		27%		15%
		2011	Owner	64	60%	n/d	n/d
			Labor total		40%	65	21%
			Captain		13%		7%
			Crew		27%		14%

Table continues on next page.

Table 22 - continued

Sector	Fishery	Year	Share	Net share distribution Vessels*	Net share distribution Median share	Gross share distribution Vessels*	Gross share distribution Median share
		2012	Labor total	n/d	n/d	69	21%
			Captain		n/d		7%
			Crew		n/d		14%
	BST	2005	Owner	4	--	n/d	n/d
			Labor total		--	3	--
			Captain		--		--
			Crew		--		--
		2006	Owner	31	60%	n/d	n/d
			Labor total		40%	24	27%
			Captain		14%		9%
			Crew		26%		17%
		2007	Owner	24	60%	n/d	n/d
			Labor total		40%	20	23%
			Captain		14%		8%
			Crew		26%		15%
		2008	Owner	25	60%	n/d	n/d
			Labor total		40%	24	22%
			Captain		14%		8%
			Crew		26%		15%
		2009	Owner	15	60%	n/d	n/d
			Labor total		40%	13	21%
			Captain		12%		7%
			Crew		26%		15%
		2010	Owner	4	--	n/d	n/d
			Labor total		--	4	--
			Captain		--		--
			Crew		--		--
	SMB	2009	Owner	7	60%	n/d	n/d
			Labor total		40%	7	17%
			Captain		14%		6%
			Crew		27%		13%
		2010	Owner	11	60%	n/d	n/d
			Labor total		40%	10	20%
			Captain		14%		6%
			Crew		27%		14%
		2011	Owner	18	60%	n/d	n/d
			Labor total		40%	17	22%
			Captain		12%		5%
			Crew		30%		14%
		2012	Labor total	n/d	n/d	17	18%
			Captain		n/d		6%
			Crew		n/d		13%

Table 22 - continued

Sector	Fishery	Year	Share	Net share distribution Vessels*	Net share distribution Median share	Gross share distribution Vessels*	Gross share distribution Median share
CP	ALL	98/01/04	Owner	25 (10)	66%	n/d	n/d
			Labor total		35%	n/d	n/d
			Captain/crew		30%	n/d	n/d
			Processing employee		1%	n/d	n/d
	AIG	2005	Owner	1	--	n/d	n/d
			Labor total		--	n/d	n/d
			Captain		--	n/d	n/d
			Crew		--	n/d	n/d
			Processing employee		--	n/d	n/d
	BBR	2005	Owner	3	--	n/d	n/d
			Labor total		--	n/d	n/d
			Captain		--	n/d	n/d
			Crew		--	n/d	n/d
			Processing employee		--	n/d	n/d
	BSS	2005	Owner	5	66%	n/d	n/d
			Labor total		32%	n/d	n/d
			Captain		7%	n/d	n/d
			Crew		17%	n/d	n/d
			Processing employee		7%	n/d	n/d

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year.

Net revenue share percentages are estimated as the average over vessel-level net share percentages in EDR data from 1998-2011, and represent owner, crew, and captain percentages of ex-vessel revenue after deductions for vessel operating expenses and crew-related costs. Gross revenue share percentages represent crew and captain labor payments as a percentage of gross ex-vessel value, before deductions for expenses. Gross revenue share cannot be calculated for vessel owners with available data, or for catcher/processors, which do not report ex-vessel value.

Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years. *Vessels* for 98/01/04 shows the count of vessels operating each year, summed over all years, with numbers in parentheses showing counts of unique vessels participating within the three years. For 1998-2004, net harvest revenue share data was reported over all fisheries, with crew share and captain share percentages reported in aggregate. Reporting of harvest revenue shares was discontinued with the 2006 EDR for the catcher/processor sector, and net revenue share reporting for all sectors was discontinued in the EDR beginning in 2012.

For net share statistics, *Labor total* calculated is by summing captain, crew, and, if applicable, processing employee shares for each vessel, then taking the median of the summed observations. Gross share statistics are calculated by dividing the crew and captain share payments by the reported ex-vessel revenue of catch, by fishery; *Labor total* for catcher vessels is calculated by dividing summed crew and captain share payments by ex-vessel revenue, where valid values are reported for both labor categories.

Table 23: Harvesting Sector Activity Days, CR Program Fisheries

				Days active - total (median)[b]		Days fishing - total (median)[c]	
Fishery	Sector	Year[a]	Vessels[a]	EDR	CIF	EDR	CIF
AIG	CP	98/01/04	4 (2)	--	n/d	n/d	n/d
		2005	2	--	n/d	--	n/d
		2006	1	--	n/d	--	n/d
		2007	1	--	--	--	--
	CV	98/01/04	52 (22)	1203 (41)	n/d	n/d	n/d
		2005	10	589 (54)	n/d	411 (39)	n/d
		2006	6	571 (102)	n/d	410 (67)	n/d
		2007	6	471 (75)	439 (75)	349 (55)	289 (45)
	CVCP	2008	5	695 (124)	702 (116)	494 (83)	474 (76)
		2009	6	666 (105)	645 (109)	460 (68)	439 (69)
		2010	5	719 (105)	725 (146)	486 (77)	466 (80)
		2011	5	617 (107)	582 (131)	398 (76)	400 (82)
		2012	6	n/d	641 (105)	n/d	427 (74)
BBR	CP	98/01/04	20 (9)	59 (7)	n/d	n/d	n/d
		2005	5	162 (23)	n/d	98 (19)	n/d
		2006	3	--	n/d	--	n/d
		2007	3	--	--	--	--
	CV	98/01/04	631 (250)	2611 (10)	n/d	n/d	n/d
		2005	85	2253 (25)	n/d	1374 (13)	n/d
		2006	79	1766 (21)	n/d	1062 (12)	n/d
		2007	71	2274 (30)	1930 (26)	1442 (19)	1230 (16)
	CVCP	2008	79	2556 (29)	2410 (28)	1780 (20)	1635 (19)
		2009	70	2126 (29)	1936 (27)	1408 (19)	1306 (18)
		2010	65	2321 (34)	2023 (30)	1604 (22)	1417 (22)
		2011	62	1151 (17)	910 (14)	701 (10)	538 (8)
		2012	64	n/d	843 (13)	n/d	499 (8)
BSS	CP	98/01/04	18 (8)	239 (39)	n/d	n/d	n/d
		2005	6	189 (28)	n/d	80 (9)	n/d
		2006	4	--	n/d	--	n/d
		2007	4	--	--	--	--
	CV	98/01/04	522 (210)	6331 (25)	n/d	n/d	n/d
		2005	150	2710 (16)	n/d	1275 (7)	n/d
		2006	74	2927 (34)	n/d	1930 (22)	n/d
		2007	63	2321 (36)	2009 (31)	1491 (21)	1057 (15)
	CVCP	2008	78	3879 (49)	3483 (41)	2619 (33)	1941 (23)
		2009	77	3869 (49)	3602 (44)	2600 (32)	2111 (26)
		2010	68	3032 (42)	2812 (41)	2110 (29)	1718 (24)
		2011	68	3303 (46)	2878 (40)	2217 (31)	1734 (24)
		2012	72	n/d	5665 (79)	n/d	3391 (48)
BST	CP	2005	1	--	n/d	--	n/d
		2006	1	--	n/d	--	n/d
		2007	1	--	--	--	--
	CV	2005	4	--	n/d	--	n/d
		2006	25	416 (13)	n/d	283 (10)	n/d
		2007	24	555 (22)	445 (17)	410 (16)	295 (11)
	CVCP	2008	27	592 (18)	568 (19)	423 (11)	405 (13)
		2009	17	467 (22)	350 (17)	321 (15)	238 (12)
		2010	4	--	--	--	--
PIK	CV	98/01/04	43 (43)	762 (15)	n/d	n/d	n/d

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Table 23- continued

Fishery	Sector	Year[a]	Vessels[a]	Days active - total (median)[b] EDR	Days active - total (median)[b] CIF	Days fishing - total (median)[c] EDR	Days fishing - total (median)[c] CIF
SMB	CP	98/01/04	2 (2)	--	n/d	n/d	n/d
	CV	98/01/04	93 (93)	1630 (17)	n/d	n/d	n/d
		2009	7	184 (19)	166 (16)	133 (10)	112 (11)
		2010	11	485 (36)	429 (36)	365 (23)	313 (27)
		2011	18	663 (33)	710 (37)	473 (26)	468 (24)
		2012	17	n/d	542 (33)	n/d	363 (19)
WAI [a]	CP	98/01/04	2 (1)	--	n/d	n/d	n/d
	CV	98/01/04	3 (3)	--	n/d	n/d	n/d

Source: NMFS AFSC BSAI Crab Economic Data. ADF&G Shellfish Observer Program, Confidential Interview Form Data. eLandings.

Data shown by calendar year.

Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Vessels*' for 98/01/04 shows count of vessels operating each year, summed over all years; numbers in parentheses show count of unique vessels participating within the three years. Total statistics for Days Active and Days Fishing columns for 98/01/04 shows total aggregate count of vessel activity days averaged across years for participating/reporting vessels. Starting in 2009, data are summarized over all harvesting sectors (CVCP) to preserve confidentiality.

Days active and days fishing are shown as calculated from EDR reporting (1998-2011 for days active, 2005-2011 for days fishing) and ADF&G Shellfish Observer Program confidential interview form data (CIF) supplemented with eLandings data (2009 and later). EDR days active by fishery is calculated using reported days at sea in the 1998-2004 data and, for 2005 and later, the sum of days fishing and days travelling and offloading (vessel activity was not reported by days fishing and traveling/offloading in the 1998-2004 EDR). Note that the 1998-2004 and 2005 and later figures for both total and median days active are not directly comparable, as the pre-2005 data do not include days spent queuing and offloading at processors.

[a] 2001 data reflect activity in Petrel Bank test fishery.

Table 24: Processor Non-Processing Salary and Wages, CR Program Fisheries

				Salary costs ($1000)			Salaried employees	
Sector	Year	Processors	Salary cost obs	Total	Per plant, median	Per employee, median	Total	Per plant, median
CP	98/01/04	17 (9)	17	$387.30	$45.80	$18.70	17	2
	2005	8	7	$1,120.30	$47.70	$11.90	44	3
	2006	4	4	--	--	--	--	--
	2007	4	4	--	--	--	--	--
	2008	4	4	--	--	--	--	--
	2009	5	3	--	--	--	--	--
	2010	3	2	--	--	--	--	--
	2011	3	3	--	--	--	--	--
	2012 [a]	n/d	n/d	n/d	n/d	n/d	n/d	n/d
SF	98/01/04	65 (32)	65	$9,245.60	$187.10	$10.00	1096	17
	2005	17	17	$11,070.00	$74.90	$5.10	1592	20
	2006	13	13	$13,468.40	$363.50	$4.50	2031	20
	2007	14	14	$5,849.90	$249.00	$8.50	691	15
	2008	13	13	$11,725.10	$295.80	$11.00	1056	16
	2009	17	11	$8,176.20	$550.00	$10.10	900	29
	2010	17	12	$6,131.50	$105.10	$5.80	786	22
	2011	17	13	$6,673.10	$373.10	$5.70	1148	25
	2012[a]	13	13	$51,777.59	$996.85	$39.87	1428	33

Source: NMFS AFSC BSAI Crab Economic Data.

Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Processors* column shows count processing operation-level observations, (catcher-processors and shoreside shown separately) operating each year, summed over all years; number in parentheses indicates count of unique operations active within the three years. Totals for 98/01/04 represent total annual salary costs or salaried employees averaged across years for processors reporting salary costs.

Salary cost obs column show number of active processing observations that reported salary data in EDR; difference from *Processors* reflects underreporting.

Where a submitter provided salary data applicable to more than just crab processing activity, reported salary costs are prorated using the ratio of crab-specific processing days to total processing days in all fisheries. Where this ratio is unavailable, the ratio of crab processing revenue to total processing revenue in all fisheries; or of finished crab pounds to total finished pounds in all fisheries may be used. Data for number of salaried employees are not pro-rated.

[a] Reporting of salary costs dropped for CP sector in 2012. Beginning in 2012, salary costs reported for the shoreside and floating processor sectors are no longer crab-fishery specific and may reflect costs from other fisheries in which the processor participates. As such, 2012 salary figures are not comparable with pre-2012 salary figures, which are reported in the EDR on a crab-specific basis or adjusted to reflect crab-specific activity using other pro-rata factors reported in the pre-2012 EDR.

Table 25: Selected Operating and Capital Costs by Sector, CR Program Fisheries

Expenditure Item	Sector	Year	Vessels/ plants	Total cost ($1000)	Cost per vessel/plant, median ($1000)
Capital investments	CV	98/01/04	348 (186)	$16,584	$32
		2005	93	$2,908	$11
		2006	54	$2,479	$21
		2007	38	$3,845	$32
		2008	57	$4,218	$36
		2009	56	$6,638	$35
		2010	42	$2,274	$18
		2011	39	$3,475	$53
	CP	98/01/04	16 (10)	$1,850	$21
		2005	5	$746	$133
		2006	2	--	--
		2007	4	--	--
		2008	2	--	--
		2009	3	--	--
		2010	1	--	--
		2011	1	--	--
	SFP	98/01/04	40 (21)	$6,708	$25
		2005	12	$8,547	$114
		2006	12	$11,632	$208
		2007	14	$19,169	$254
		2008	12	$8,549	$140
		2009	11	$7,557	$141
		2010	12	$6,764	$105
		2011	12	$7,416	$128
Repair/maintenance	CV	98/01/04	645 (252)	$17,418	$47
		2005	160	$5,774	$21
		2006	95	$5,212	$32
		2007	80	$5,290	$46
		2008	89	$7,490	$50
		2009	84	$7,424	$56
		2010	76	$5,353	$40
		2011	73	$6,188	$47
	CP	98/01/04	25 (10)	$1,791	$195
		2005	8	$2,527	$245
		2006	5	$1,718	$276
		2007	5	$1,596	$300
		2008	5	$1,995	$394
		2009	5	$841	$170
		2010	3	--	--
		2011	3	--	--
	SFP	98/01/04	62 (29)	$5,504	$90
		2005	17	$4,381	$50
		2006	13	$5,093	$199
		2007	14	$7,381	$337
		2008	13	$7,712	$176
		2009	11	$5,938	$275
		2010	12	$3,303	$304
		2011	13	$3,079	$131

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Table 25- continued

Expenditure Item	Sector	Year	Vessels/ plants	Total cost ($1000)	Cost per vessel/plant, median ($1000)
Fisheries tax	CV	98/01/04	628 (252)	$3,620	$13
		2005	162	$6,169	$15
		2006	90	$6,710	$55
		2007	81	$10,836	$103
		2008	91	$15,469	$134
		2009	83	$10,943	$122
		2010	76	$11,778	$140
		2011	71	$16,507	$202
	CP	98/01/04	22 (10)	$489	$45
		2005	6	$582	$102
		2006	5	$765	$148
		2007	5	$1,257	$244
		2008	5	$1,727	$273
		2009	5	$1,489	$252
		2010	3	--	--
		2011	3	--	--
	SFP	98/01/04	64 (31)	$8,322	$267
		2005	18	$8,339	$270
		2006	11	$6,973	$469
		2007	15	$8,047	$366
		2008	12	$9,556	$792
		2009	11	$6,779	$701
		2010	13	$8,098	$562
		2011	16	$10,168	$410
Crab freight[b]	CV	98/01/04	6 (4)	--	--
		2005	3	--	--
		2006	5	$33	$3
		2007	2	--	--
		2008	3	--	--
		2009	2	--	--
		2010	1	--	--
		2011	2	--	--
	CP	98/01/04	20 (10)	$675	$67
		2005	5	$270	$41
		2006	4	--	--
		2007	4	--	--
		2008	5	$1,543	$234
		2009	5	$844	$150
		2010	3	--	--
		2011	3	--	--
	SFP	98/01/04	48 (23)	$13,942	$333
		2005	14	$5,518	$365
		2006	10	$7,777	$342
		2007	11	$4,852	$81
		2008	9	$6,229	$708
		2009	8	$6,811	$427
		2010	12	$7,045	$53
		2011	16	$7,192	$106

Table continues on next page.

Table 25- continued

Expenditure Item	Sector	Year	Vessels/ plants	Total cost ($1000)	Cost per vessel/plant, median ($1000)
Fishing gear	CV	98/01/04	482 (211)	$2,910	$9
		2005	80	$1,076	$6
		2006	61	$1,035	$11
		2007	52	$861	$12
		2008	56	$1,465	$18
	CP	98/01/04	23 (10)	$242	$26
		2005	6	$180	$4
		2006	4	--	--
		2007	3	--	--
		2008	3	--	--
	CVCP	2009	56	$1,330	$14
		2010	44	$944	$14
		2011	50	$1,355	$15
Gear storage	CV	98/01/04	539 (223)	$1,745	$6
		2005	119	$1,129	$6
		2006	68	$615	$7
		2007	61	$668	$9
		2008	68	$1,060	$10
	CP	98/01/04	22 (10)	$144	$11
		2005	5	$280	$14
		2006	5	$284	$37
		2007	4	--	--
		2008	3	--	--
	CVCP	2009	64	$866	$12
		2010	51	$655	$12
		2011	51	$628	$9
Cooperative fees	CV	2005	82	$329	$3
		2006	67	$532	$4
		2007	51	$936	$9
		2008	46	$649	$7
	CP	2005	3	--	--
		2006	2	--	--
		2007	1	--	--
		2008	2	--	--
	CVCP	2009	49	$627	$5
		2010	44	$486	$6
		2011	40	$499	$9

Table continues on next page.

Table 25- continued

Expenditure Item	Sector	Year	Vessels/ plants	Total cost ($1000)	Cost per vessel/plant, median ($1000)
Supply freight	CV	98/01/04	265 (140)	$236	$1
	CP	98/01/04	20 (9)	$61	$4
	SFP	98/01/04	40 (21)	$1,319	$36
		2005	11	$616	$24
		2006	9	$909	$69
		2007	11	$1,109	$52
		2008	11	$806	$39
		2009	8	$617	$31
		2010	9	$680	$42
		2011	10	$933	$31
Processing and packaging	CP	98/01/04	25 (10)	$422	$40
		2005	7	$301	$33
		2006	5	$545	$63
		2007	5	$442	$52
		2008	5	$697	$128
	SFP	98/01/04	64 (32)	$6,228	$134
		2005	16	$2,140	$129
		2006	11	$2,116	$202
		2007	14	$3,219	$259
		2008	13	$3,233	$313
	SFCP	2009	15	$2,785	$63
		2010	17	$2,383	$52
		2011	15	$2,191	$117
Repackaging	CP	98/01/04	2 (2)	--	--
		2005	1	--	--
		2006	2	--	--
		2007	2	--	--
		2008	2	--	--
	SFP	98/01/04	11 (6)	$1,009	$172
		2005	2	--	--
		2006	2	--	--
		2007	2	--	--
		2008	2	--	--
	SFCP	2009	5	$231	$47
		2010	4	--	--
		2011	3	--	--
Product storage	CP	98/01/04	13 (6)	$75	$5
		2005	5	$73	$13
		2006	3	--	--
		2007	4	--	--
		2008	3	--	--
	SFP	98/01/04	29 (13)	$1,936	$58
		2005	9	$1,231	$98
		2006	7	$1,321	$207
		2007	6	$618	$80
		2008	7	$985	$99
	SFCP	2009	10	$1,612	$95
		2010	13	$1,012	$38
		2011	13	$865	$36

Table 26: Food and Provisions Costs, CR Program Fisheries

Sector	Fishery	Year[a]	Vessels/Plants	Total costs ($1000s)	Median costs ($1000s)
CV	ALL	98/01/04	622 (249)	$2,648	$9
		2005	149	$1,425	$5
		2006	66	$687	$8
		2007	57	$664	$10
		2008	65	$1,348	$14
		2009	56	$812	$11
		2010	47	$1,011	$13
		2011	50	$744	$11
	AIG	2012	5	$125	$19
	BBR	2012	60	$302	$4
	BSS	2012	68	$1,048	$13
	SMB	2012	16	$116	$6
CP	ALL	98/01/04	25 (10)	$364	$40
		2005	7	$198	$21
		2006	4	--	--
		2007	4	--	--
		2008	4	--	--
		2009	4	--	--
		2010	2	--	--
		2011	2	--	--
	BBR	2012	2	--	--
	BSS	2012	2	--	--
SFP	ALL	98/01/04	49 (24)	$2,919	$139
		2005	13	$1,009	$86
		2006	10	$1,071	$111
		2007	12	$1,199	$103
		2008	9	$1,365	$86
		2009	7	$847	$118
		2010	11	$1,631	$108
		2011	11	$1,496	$104
		2012	n/d	n/d	n/d

Source: NMFS AFSC BSAI Crab Economic Data.

[a] Beginning in 2012, food and provisions expenses are reported on a by-fishery basis. Reporting of this cost was dropped from shoreside and floating processor reporting in 2012.

Table 27: Fishery Expenditures - Bait Usage and Costs, CR Program Fisheries

				Bait usage (1000 lbs)		Bait costs ($1000)		Price ($/lb)
Fishery	Sector	Year	Vessels*	Total	Per vessel, median	Total	Per vessel, median	weighted average
AIG	CP	98/01/04	4 (2)	--	--	--	--	--
		2005	1	--	--	--	--	--
		2006	1	--	--	--	--	--
		2007	1	--	--	--	--	--
		2008	1	--	--	--	--	--
	CV	98/01/04	50 (21)	1825	60	$1140	$38	$0.62
		2005	9	863	79	$490	$47	$0.57
		2006	6	778	142	$412	$79	$0.53
		2007	6	741	84	$308	$42	$0.42
		2008	4	--	--	--	--	--
	CVCP	2009	7	1137	169	$659	$75	$0.58
		2010	6	1259	215	$679	$104	$0.54
		2011	5	1172	291	$1425	$184	$1.22
		2012	6	n/d	n/d	$538	$76	n/d
BBR	CP	98/01/04	15 (8)	90	15	$50	$8	$0.55
		2005	4	--	--	--	--	--
		2006	3	--	--	--	--	--
		2007	2	--	--	--	--	--
		2008	3	--	--	--	--	--
	CV	98/01/04	546 (227)	1742	8	$1193	$6	$0.68
		2005	82	1380	13	$903	$7	$0.65
		2006	73	1162	13	$657	$8	$0.57
		2007	70	1488	19	$881	$11	$0.59
		2008	76	1683	19	$1102	$12	$0.65
	CVCP	2009	68	1666	20	$1053	$14	$0.63
		2010	61	1625	23	$990	$13	$0.61
		2011	61	961	10	$624	$8	$0.65
		2012	64	n/d	n/d	$451	$6	n/d
BSS	CP	98/01/04	13 (7)	147	28	$88	$16	$0.60
		2005	5	102	23	$55	$12	$0.54
		2006	4	--	--	--	--	--
		2007	3	--	--	--	--	--
		2008	4	--	--	--	--	--
	CV	98/01/04	448 (190)	3270	14	$2320	$10	$0.71
		2005	148	1758	10	$1107	$7	$0.63
		2006	74	1041	13	$615	$8	$0.59
		2007	64	869	12	$495	$7	$0.57
		2008	72	1288	16	$755	$9	$0.59
	CVCP	2009	75	1616	18	$1007	$11	$0.62
		2010	67	1374	18	$832	$11	$0.61
		2011	67	1504	19	$876	$12	$0.58
		2012	72	n/d	n/d	$1645	$21	n/d

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Table 27 - continued

Fishery	Sector	Year	Vessels*	Bait usage (1000 lbs) Total	Bait usage (1000 lbs) Per vessel, median	Bait costs ($1000) Total	Bait costs ($1000) Per vessel, median	Price ($/lb) weighted average
BST	CP	2006	1	--	--	--	--	--
		2007	1	--	--	--	--	--
		2008	1	--	--	--	--	--
	CV	2005	4	--	--	--	--	--
		2006	15	41	2	$26	$1	$0.63
		2007	16	191	8	$90	$5	$0.47
		2008	21	230	8	$134	$5	$0.58
	CVCP	2009	12	204	10	$137	$6	$0.67
		2010	4	--	--	--	--	--
PIK	CV	98/01/04	35 (35)	249	7	$186	$5	$0.75
SMB [a]	CV	98/01/04	72 (72)	668	9	$481	$7	$0.72
		2009	7	96	8	$66	$5	$0.68
		2010	13	329	22	$198	$11	$0.60
		2011	18	448	17	$289	$12	$0.64
		2012	17	n/d	n/d	$237	$12	n/d
WAI	CP	98/01/04	2 (1)	--	--	--	--	--
	CV	98/01/04	3 (3)	--	--	--	--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year. Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Vessels* column for 98/01/04 shows count of vessels operating each year, summed over all years; numbers in parentheses show count of unique vessels participating within the three years. Starting in 2009, data are reported over all harvesting sectors (CVCP) to preserve confidentiality. Totals for 98/01/04 represent total annual bait pounds purchased or bait costs averaged across years with participating/reporting vessels.

Changes in the reporting of bait quantity and costs in the EDR limit the comparability of bait statistics over the available time series. Beginning in 2006, EDR submitters were directed to report only pounds and costs of bait purchased during the reporting year; treatment of bait caught by the vessel or purchased in the prior year was not specified in EDR reporting instructions for 2005 and earlier years. Additionally, bait quantity reporting is differentiated by species and fishery in all years of EDR data collection, whereas bait costs are reported only by fishery for the years 1998-2004 and by fishery and species together for 2005 and later years. Methods for generating price per pound statistics differs across reporting years. For 1998-2004 statistics, reported bait quantities are aggregated by submitter and fishery to match reported bait costs; 2005 and later bait price statistics reflect the exclusion of quantity-cost observations that indicate zero or no reported costs, as well as of observations where the quantity of bait is less than 100 pounds. Bait quantity reporting was dropped from the EDR beginning in 2012.

[a] No catcher/processor operations reported fishing activity in the SMB fishery from 2009 to 2012.

Table 28: Fishery Expenditures - Observer Costs, CR Program Fisheries

Fishery	Sector	Year	Vessels*	Total cost ($1000)	Cost per vessel, median ($1000)
AIG	CP	98/01/04	4 (2)	--	--
		2005	1	--	--
		2006	1	--	--
		2007	1	--	--
		2008	1	--	--
	CV	98/01/04	49 (20)	$623.70	$20.80
		2005	10	$189.10	$16.80
		2006	6	$180.60	$16.10
		2007	6	$118.90	$17.30
		2008	4	--	--
	CVCP	2009	5	$196.20	$27.70
		2010	5	$179.90	$23.70
		2011	5	$168.80	$23.20
		2012	n/d	n/d	n/d
BBR	CP	98/01/04	17 (9)	$56.50	$9.00
		2005	5	$109.50	$18.90
		2006	3	--	--
		2007	3	--	--
		2008	3	--	--
	CV	98/01/04	37 (23)	$37.20	$1.90
		2005	1	--	--
		2008	2	--	--
	CVCP	2009	2	--	--
		2010	2	--	--
		2011	5	$31.90	$6.00
		2012	n/d	n/d	n/d
BSS	CP	98/01/04	15 (8)	$107.40	$22.50
		2005	6	$63.30	$9.00
		2006	4	--	--
		2007	4	--	--
		2008	4	--	--
	CV	98/01/04	24 (17)	$113.20	$13.70
		2005	6	$47.80	$7.90
	CVCP	2009	4	--	--
		2010	2	--	--
		2011	6	$70.30	$6.50
		2012	n/d	n/d	n/d

Table continues on next page.

Table 28 - continued

Fishery	Sector	Year	Vessels*	Total cost ($1000)	Cost per vessel, median ($1000)
BST	CP	2006	1	--	--
		2007	1	--	--
		2008	1	--	--
	CV	2005	1	--	--
		2007	1	--	--
	CVCP	2009	1	--	--
SMB	CP	98/01/04	2 (2)	--	--
	CV	98/01/04	3 (3)	--	--
		2009	4	--	--
		2010	6	$123.90	$20.60
		2011	13	$204.60	$13.40
		2012	n/d	n/d	n/d
WAI	CP	98/01/04	2 (1)	--	--
	CV	98/01/04	2 (2)	--	--

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year. Observer cost reporting was discontinued in the EDR beginning in 2012. Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Vessels* column shows count of vessels operating with on-board observers; for 98/01/04, count is summed over the three years, and numbers in parentheses show count of unique vessels represented in the three-year series. Starting in 2009, data are reported over all harvesting sectors (CVCP) to preserve confidentiality. Total cost statistics for 98/01/04 represent the three-year average of aggregated annual costs to vessel operators for on-board observers. Total cost and median cost per vessel statistics represent costs incurred by observed vessels.

Table 29: Fishery Expenditures - Vessel Fuel Costs, CR Program Fisheries

			Gallons purchased		Fuel expenses		
Fishery	Year	Vessels	Total (1000s)	Median (1000s)	Total ($1000s)	Median ($1000s)	Average fuel price
AIG	2012	6	355	70	$1,228	$230	$3.46
BBR	2012	64	731	8	$2,939	$33	$4.02
BSS	2012	72	4,211	38	$16,643	$159	$3.95
SMB	2012	17	296	19	$1,235	$81	$4.17

Source: NMFS AFSC BSAI Crab Economic Data.

Table 30: Fishery Expenditures - Broker Costs, CR Program Fisheries

Sector	Year	Processors*	Total cost ($1000)	Cost per processor, median ($1000)	Cost per pound sold ($/lb)
CP	98/01/04	14 (7)	$238	$31	$0.12
	2005	3	--	--	--
	2006	4	--	--	--
	2007	2	--	--	--
	2008	4	--	--	--
SFP	98/01/04	31 (14)	$2,903	$146	$0.07
	2005	9	$855	$40	$0.05
	2006	8	$1,823	$210	$0.05
	2007	5	--	--	--
	2008	4	--	--	--
SFCP	2009	8	$1,236	$81	$0.05
	2010	7	$1,084	$64	$0.05
	2011	10	$1,399	$63	$0.06
	2012	n/d	n/d	n/d	n/d

Source: NMFS AFSC BSAI Crab Economic Data.

Data shown by calendar year. Broker cost reporting was discontinued in the EDR beginning in 2012. Statistics shown for *98/01/04* are calculated as the annual average over the 1998, 2001, and 2004 calendar years; *Processors* column for 98/01/04 shows count of crab processors reporting crab product brokerage costs each year, summed over all years; numbers in parentheses show count of unique processors represented in the three-year series.

Starting in 2009, data are reported over all processing sectors (SFCP) to preserve confidentiality.

Total cost statistics show aggregated annual brokerage costs paid by reporting processors; cost per pound sold represents total brokerage costs averaged over total crab product sales aggregated over processors reporting brokerage costs (noting that brokerage costs are incurred for an indeterminate fraction of product sales).

Table 31: Average Monthly Fuel Prices For Selected Ports

Year	Port	J	F	M	A	M	J	J	A	S	O	N	D
1999	Dutch Harbor	n/d	$1.31	$1.25	$1.46	$1.42	$1.43	$1.58	$1.64	$1.66	$1.63	$1.61	$1.61
	Kodiak	n/d	$1.17	$1.17	$1.40	$1.49	$1.49	$1.60	$1.61	$1.63	$1.63	$1.66	$1.66
	Seattle	$0.80	$0.87	$0.80	$1.27	$0.96	$1.16	$1.34	$1.17	$1.36	$1.30	$1.23	$1.28
2000	Dutch Harbor	$1.58	$1.73	$2.09	$2.09	$1.87	n/d	$1.90	$1.93	$2.03	$2.23	$2.31	$2.31
	Kodiak	$1.60	$1.74	$2.03	$2.03	$1.97	$1.92	$1.97	$1.97	$2.08	$2.19	$2.32	$2.32
	Seattle	$1.38	$1.42	$1.57	$1.57	$1.38	$1.38	$1.58	$1.44	$2.00	$2.02	$1.92	$2.06
2001	Adak	n/d	n/d	$2.32	$2.17	$2.17	$2.09	$2.17	$1.99	$1.99	$2.09	n/d	$1.91
	Dutch Harbor	$2.40	$2.26	$2.26	$2.12	$2.09	$2.09	$2.09	$1.97	$2.06	$2.08	$1.97	$1.85
	Kodiak	$2.41	$2.32	$2.20	$2.06	$2.05	$2.06	$2.06	$2.02	$2.06	$1.96	$1.90	$1.70
	Seattle	$1.97	$1.66	$1.57	$1.63	$1.64	$1.58	$1.46	$1.40	$1.70	$1.30	$1.28	$1.01
2002	Adak	$1.91	$1.91	$1.91	$1.91	$2.04	n/d	n/d	$1.91	$2.03	$2.18	n/d	n/d
	Dutch Harbor	$1.74	$1.49	$1.47	$1.64	$1.71	$1.71	$1.71	$1.71	$1.79	$1.86	$1.91	$1.94
	Kodiak	$1.67	$1.56	$1.56	$1.59	$1.65	$1.65	$1.91	$1.64	$1.73	$1.77	$1.77	$1.77
	Seattle	$1.14	$1.04	$1.28	$1.41	$1.49	$1.49	$1.50	$1.47	$1.70	$1.52	$1.67	$1.49
2003	Adak	$2.13	$2.13	n/d	$2.46	$2.36	$2.36	$2.28	$2.28	$2.28	$2.28	$2.28	$2.28
	Dutch Harbor	$1.90	$1.99	$2.15	$2.28	$2.16	$2.13	$2.13	$2.13	$2.21	$2.21	$2.21	$2.21
	Kodiak	$1.75	$1.81	$2.03	$2.22	$2.08	$2.02	$2.02	$2.02	$1.99	$2.19	$1.99	$1.99
	Seattle	$1.68	$1.71	$2.47	$2.03	$1.74	$1.69	$1.84	$1.83	$1.81	$1.72	$1.75	$1.78
2004	Adak	$2.23	$2.23	$2.23	n/d	$2.44	$2.72	$2.72	$2.72	n/d	$2.86	$2.93	$2.93
	Dutch Harbor	$2.09	$2.09	$2.29	$2.23	$2.30	$2.48	$2.48	$2.56	$2.58	$2.70	$2.79	$2.79
	Kodiak	$1.88	$1.92	$2.06	$2.09	$2.27	$2.45	$2.49	$2.48	$2.49	$2.56	$2.75	$2.76
	Seattle	$1.78	$1.96	$2.06	$2.12	$2.45	$2.37	$2.31	$2.34	$2.36	$2.76	$2.79	$2.34
2005	Adak	$2.71	$2.71	$2.78	$2.85	n/d	$3.42	$2.97	$3.04	$3.24	$3.42	$3.42	$3.42
	Dutch Harbor	$2.58	$2.58	$2.69	$2.78	$2.84	$2.84	$2.84	$2.97	$3.24	$3.27	$3.35	$3.32
	Kodiak	$2.48	$2.48	$2.54	$2.73	$2.88	$2.88	$2.88	$2.88	$3.20	$3.46	$3.41	$3.36
	Seattle	$2.14	$2.36	$2.88	$2.94	$2.89	$2.69	$2.87	$3.06	$3.71	$3.64	$3.27	$2.87
2006	Adak	n/d	$3.10	$3.10	n/d	$4.12	$3.42	$3.42	$3.42	$3.62	$3.62	$3.56	$3.56
	Dutch Harbor	$2.99	$2.98	$2.98	$2.98	$3.20	$3.28	$3.27	$3.35	$3.45	$3.28	$3.12	$3.10
	Kodiak	$3.02	$3.03	$3.02	$3.05	$3.26	$3.26	$3.26	$3.33	$3.50	$3.33	$3.08	$3.15
	Seattle	$2.81	$2.65	$3.05	$2.94	$3.42	$3.51	$3.37	$3.58	$3.66	$2.97	$2.99	$3.27
2007	Adak	$3.54	$3.54	$3.27	$3.15	$3.39	$3.39	$3.39	$3.39	$3.39	$3.47	$3.54	$3.79
	Dutch Harbor	$3.03	$2.98	$2.94	$2.96	$3.11	$3.22	$3.22	$3.23	$3.33	$3.34	$3.54	$3.77
	Kodiak	$3.01	$2.98	$2.95	$2.95	$3.07	$3.19	$3.19	$3.19	$3.36	$3.32	$3.48	$3.56
	Seattle	$3.15	$3.08	$2.94	$3.21	$3.29	$3.29	$3.36	$3.42	$3.28	$3.53	$4.04	$3.82

Table 31 - continued

Year	Port	J	F	M	A	M	J	J	A	S	O	N	D
2008	Adak	$3.60	$3.60	$3.68	$4.05	$4.47	$4.67	$5.07	$5.23	$5.23	$5.23	$5.23	$5.23
	Dutch Harbor	$3.37	$3.38	$3.61	$4.20	$4.46	$4.87	$5.03	$5.19	$5.02	$4.84	$4.44	$4.33
	Kodiak	$3.40	$3.44	$3.57	$4.27	$4.36	$4.78	$4.94	$5.22	$5.05	$4.77	$4.48	$3.70
	Seattle	$3.75	$3.58	$3.97	$4.23	$4.64	$5.00	$4.98	$4.85	$4.58	$3.53	$3.31	$2.74
2009	Adak	$5.33	$3.83	$3.71	$3.60	$3.60	$3.31	$3.31	$3.31	n/d	$3.43	$3.43	$3.43
	Dutch Harbor	$3.51	$3.11	$2.93	$2.93	$2.93	$2.93	$3.19	$3.15	$3.19	$3.32	$3.32	$3.38
	Kodiak	$3.31	$3.14	$2.97	$2.85	$2.85	$2.97	$3.08	$3.08	$3.13	$3.31	$3.17	$3.20
	Seattle	$2.62	$2.48	$2.30	$2.39	$2.60	$2.75	$2.75	$2.80	$3.11	$2.97	$3.09	$3.09
2010	Adak	$3.16	$3.16	n/d	$3.16	$3.29	$3.29	$3.29	$3.29	$3.37	$3.37	$3.53	$3.53
	Dutch Harbor	$3.06	$3.11	$3.06	$3.13	$3.22	$3.20	$3.29	$3.22	$3.22	$3.22	$3.38	$3.38
	Kodiak	$2.94	$3.11	$3.05	$3.16	$3.31	$3.26	$3.17	$3.16	$3.16	$3.19	$3.32	$3.31
	Seattle	$2.98	$2.83	$2.90	$3.11	$3.32	$3.07	$2.92	$3.05	$3.16	$3.06	$3.29	$3.24
2011	Adak	$3.34	$3.51	$3.69	$3.99	$4.29	$4.14	n/d	$4.19	$4.09	$4.09	$4.21	$4.39
	Dutch Harbor	$3.20	$3.30	$3.40	$3.75	$3.83	$3.85	$3.85	$3.85	$3.85	$3.85	$3.85	$3.85
	Kodiak	$3.14	$3.24	$3.28	$3.75	$3.83	$3.91	$3.87	$3.88	$3.82	$3.88	$3.86	$3.88
	Seattle	$3.16	$3.33	$3.75	$3.95	$4.04	$3.94	$3.65	$3.75	$3.96	$3.66	$3.75	$3.68
2012	Adak	$4.39	n/d	n/d	n/d	$4.35	$4.35	$4.35	$4.35	$4.35	$4.35	$4.35	$4.35
	Dutch Harbor	$3.85	$3.85	$4.05	$4.05	$4.14	$4.12	$3.95	$3.85	$3.95	$4.00	$4.00	$4.00
	Kodiak	$3.76	$3.80	$3.88	$4.06	$4.14	$4.09	$3.93	$3.78	$3.90	$4.05	$3.99	$3.99
	Seattle	$3.54	$3.65	$3.98	$4.13	$4.09	$3.58	$3.29	$3.76	$4.10	$3.81	$3.79	$3.69
2013	Adak	n/d	$4.21	$4.21	n/d	$4.25	$4.25	n/d	$4.25	$4.25	n/d	n/d	n/d
	Dutch Harbor	$3.87	$3.82	$3.88	$3.86	$3.86	$3.86	$3.86	$3.88	$3.89	n/d	n/d	n/d
	Kodiak	$3.81	$3.81	$3.86	$3.85	$3.86	$3.87	$3.84	$3.87	$3.90	n/d	n/d	n/d
	Seattle	$3.46	$3.58	$3.60	$3.59	$3.43	$3.46	$3.42	$3.58	$3.62	n/d	n/d	n/d
2008	Adak	$3.60	$3.60	$3.68	$4.05	$4.47	$4.67	$5.07	$5.23	$5.23	$5.23	$5.23	$5.23
	Dutch Harbor	$3.37	$3.38	$3.61	$4.20	$4.46	$4.87	$5.03	$5.19	$5.02	$4.84	$4.44	$4.33
	Kodiak	$3.40	$3.44	$3.57	$4.27	$4.36	$4.78	$4.94	$5.22	$5.05	$4.77	$4.48	$3.70
	Seattle	$3.75	$3.58	$3.97	$4.23	$4.64	$5.00	$4.98	$4.85	$4.58	$3.53	$3.31	$2.74

Source: Pacific States Marine Fisheries Commission. EFIN monthly marine fuel price data. Data available at http://www.psmfc.org/efin/data/fuel.html#FUEL_AK.

Table 32: Counts Of QS/PQS Sale Transfers and IFQ/IPQ Lease Transfers, All CR Program Fisheries

Sector	Transfer type	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Harvest	Cooperative lease	144	269	302	301	226	268	180	198
	Noncooperative lease	113	39	16	0	0	0	4	0
	QS sale	199	329	292	209	221	192	126	211
Processing	PQS lease	40	39	32	45	31	25	28	35
	PQS sale	7	7	12	42	4	0	0	3

Source: NMFS AKRO RAM division. Quota share transfer data.

Table 33: Crab Harvest Quota Lease Activity, 2012 Calendar Year BBR, BSS, and SMB Fisheries - Volume, Cost, and Lease Prices and Rates

			Pounds Leased (1000 pounds)			Cost ($1000)			Average Lease Price ($/pound)[c]		Average Lease Rate (% of ex-vessel value)[d]	
				Average per vessel			Average per vessel					
Fishery	Quota type[a]	Vessels[b]	Total	Median	Mean	Total ($1000)	Median	Mean	Median	Mean	Median	Mean
BBR	CVO A	49	3,529	65	72	17,586	328	359	5.14	5.18	64%	65%
	CVO B+CPO	41	536	8	12	2,971	48	68	5.33	5.18	65%	67%
	CVC + CPC	33	159	4	5	855	22	24	5.18	5.34	62%	66%
	CDQ	5	369	71	74	2,180	433	436	5.40	5.93	64%	72%
BSS	CVO A	52	40,758	654	784	40,769	679	784	1.00	1.02	46%	49%
	CVO B +CPO	45	6,569	84	131	7,353	101	147	1.09	1.17	46%	51%
	CVC + CPC	37	1,728	48	45	1,859	49	49	1.09	1.11	46%	48%
	CDQ	11	6,464	563	588	7,286	662	662	1.12	1.13	49%	49%
SMB	CVO A	16	994	47	62	1,430	63	89	1.37	1.63	32%	39%
	CVO B +CPO	9	125	10	10	185	14	15	1.43	1.50	32%	35%
	CVC + CPC	8	26	3	3	42	6	5	1.46	1.79	36%	43%
	CDQ	3	--	--	--	--	--	--	--	--	--	--

Source: NMFS AFSC BSAI Crab Economic Data (preliminary findings subject to revision following completion of data validation).

Other fishery data is not shown due to insufficient observations. Lease data shown represent arm's length lease transactions reported quota purchasers in the EDR.

[a] Harvest quota types are categorized in this report as the following: CVO A – catcher vessel owner Class A IFQ; CVO B + CPO - catcher vessel owner Class B IFQ and catcher/processor owner IFQ; CVC + CPC – catcher vessel crew IFQ and catcher/processor crew IFQ. Statistics reported represent results pooled over all quota types and/or regional designations within each category.

[b] Vessels column shows total count of vessel-level observations for fishery-year where both pounds and cost of quota leased were reported as non-zero values; in a small number of observations where leased pounds was reported for a given fishery/quota type but lease cost was missing, the mean price over all complete observations was used to impute the missing data in computing the total aggregate lease cost over all vessels.

[c] Average lease price statistics by fishery and quota type are calculated as the median and arithmetic mean, respectively, over all observations where both pounds and cost for one or more quota type within the respective category were reported as non-zero values.

[d] Average lease rate statistics by fishery and quota type are calculated as the median and mean, respectively, of the ratio of lease price to ex-vessel price, over all observations where both ex-vessel and lease pounds, and ex-vessel revenue and lease cost, were reported as non-zero values.

Table 34: IFQ Fisheries Estimated Weighted Mean Price Per Crab Quota Unit for QS and PQS Sale Transfers

		CVC QS				CVO QS				Processor QS			
Fishery	Year	Transfers (transferors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit	Transfers (transferrors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit	Transfers (transferrors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit
BBR	05/06	21 (19, 14)	1,221.05	56.18	$0.92	14 (6, 10)	7,139.91	115.40	$0.72	0 (0, 0)	n/d	n/d	n/d
	06/07	24 (20, 17)	1,130.33	40.08	$0.83	27 (17, 11)	24,420.20	404.43	$1.45	0 (0, 0)	n/d	n/d	n/d
	07/08	10 (8, 5)	525.49	56.28	$0.77	21 (11, 13)	7,144.78	288.73	$1.39	0 (0, 0)	n/d	n/d	n/d
	08/09	9 (7, 7)	482.47	53.64	$0.91	25 (16, 19)	13,988.27	274.01	$1.31	4 (4, 3)	31,159.18	4,680.19	$0.14
	09/10	9 (6, 7)	427.85	38.27	$0.86	12 (10, 11)	4,525.84	374.91	$1.03	1 (1, 1)	--	--	--
	10/11	5 (5, 5)	292.57	45.87	$0.66	33 (15, 22)	14,596.18	194.71	$0.66	0 (0, 0)	n/d	n/d	n/d
	11/12	3 (3, 2)	--	--	--	3 (3, 3)	2,229.68	987.57	$0.82	0 (0, 0)	n/d	n/d	n/d
	12/13	4 (3, 3)	127.72	34.93	$0.71	21 (9, 16)	7,044.13	141.43	$0.62	0 (0, 0)	n/d	n/d	n/d
BSS	05/06	25 (14, 12)	2,793.09	109.80	$0.32	22 (9, 12)	24,619.41	442.13	$0.51	0 (0, 0)	n/d	n/d	n/d
	06/07	35 (17, 15)	2,864.46	64.53	$0.23	36 (17, 8)	48,984.24	603.67	$0.31	0 (0, 0)	n/d	n/d	n/d
	07/08	12 (5, 5)	821.97	50.65	$0.31	26 (10, 13)	24,751.78	1,000.26	$0.55	0 (0, 0)	n/d	n/d	n/d
	08/09	10 (5, 6)	757.82	48.14	$0.47	15 (9, 11)	12,649.18	382.28	$0.60	2 (2, 2)	--	--	--
	09/10	15 (6, 8)	1,121.20	49.19	$0.32	14 (8, 10)	6,452.42	365.95	$0.39	2 (1, 1)	--	--	--
	10/11	11 (6, 6)	851.94	80.89	$0.37	56 (17, 24)	34,571.82	248.49	$0.46	0 (0, 0)	n/d	n/d	n/d
	11/12	2 (1, 1)	--	--	--	21 (10, 12)	12,597.57	289.40	$0.64	0 (0, 0)	n/d	n/d	n/d
	12/13	9 (4, 5)	920.85	84.74	$0.92	40 (9, 18)	16,222.63	178.61	$0.85	0 (0, 0)	n/d	n/d	n/d
BST	05/06	14 (13, 11)	400.79	29.96	$0.25	10 (8, 9)	5,203.13	406.87	$0.38	0 (0, 0)	n/d	n/d	n/d
	06/07	3 (3, 3)	138.40	48.31	$0.14	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
EAG	05/06	2 (2, 1)	--	--	--	2 (1, 1)	--	--	--	1 (1, 1)	--	--	--
	07/08	2 (2, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
	08/09	4 (4, 3)	59.91	12.80	$2.95	1 (1, 1)	--	--	--	3 (2, 2)	--	--	--
	09/10	1 (1, 1)	--	--	--	5 (2, 5)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	10/11	3 (2, 3)	--	--	--	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
EBT	06/07	17 (14, 14)	394.01	21.63	$0.06	17 (13, 8)	6,577.53	416.69	$0.08	0 (0, 0)	n/d	n/d	n/d
	07/08	5 (4, 3)	178.14	35.14	$0.09	9 (7, 8)	3,030.92	388.26	$0.30	0 (0, 0)	n/d	n/d	n/d
	08/09	4 (4, 4)	165.75	42.94	$0.12	14 (8, 9)	6,246.18	373.38	$0.16	5 (5, 4)	12,152.78	1,645.50	$0.01
	09/10	3 (2, 3)	--	--	--	5 (4, 5)	832.23	171.59	$0.07	0 (0, 0)	n/d	n/d	n/d
	10/11	3 (3, 3)	83.85	33.89	$0.02	6 (6, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	11/12	0 (0, 0)	n/d	n/d	n/d	2 (2, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	12/13	2 (2, 2)	--	--	--	12 (5, 10)	2,824.76	44.15	$0.05	0 (0, 0)	n/d	n/d	n/d
PIK	07/08	0 (0, 0)	n/d	n/d	n/d	8 (2, 3)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	08/09	4 (2, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
	10/11	1 (1, 1)	--	--	--	6 (3, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	12/13	2 (1, 1)	--	--	--	4 (1, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d

Table continues on next page.

Table 34 - cont.

Fishery	Year	Transfers (transferrors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit	Transfers (transferrors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit	Transfers (transferrors, transferees)	Total units transferred (1000s)	Median units per transfer (1000s)	Weighted average price per QS unit
SMB	05/06	1 (1, 1)	--	--	--	2 (1, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	06/07	4 (3, 3)	40.32	10.23	$0.21	6 (1, 3)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	07/08	4 (2, 1)	--	--	--	10 (3, 4)	876.90	91.10	$0.41	0 (0, 0)	n/d	n/d	n/d
	08/09	2 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
	09/10	2 (1, 1)	--	--	--	4 (2, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	10/11	3 (2, 2)	--	--	--	1 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	11/12	2 (2, 1)	--	--	--	2 (2, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	12/13	2 (1, 1)	--	--	--	23 (8, 12)	1,002.73	20.65	$1.03	3 (2, 1)	--	--	--
WAG	05/06	2 (1, 1)	--	--	--	1 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	07/08	2 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d	0 (0, 0)	n/d	n/d	n/d
	08/09	1 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d	8 (4, 3)	18,921.69	979.27	$0.08
	10/11	0 (0, 0)	n/d	n/d	n/d	2 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	11/12	0 (0, 0)	n/d	n/d	n/d	2 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	12/13	0 (0, 0)	n/d	n/d	n/d	2 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
WBT	06/07	16 (13, 13)	372.39	21.89	$0.04	22 (18, 9)	8,511.78	358.84	$0.10	0 (0, 0)	n/d	n/d	n/d
	07/08	5 (4, 3)	178.14	35.14	$0.05	8 (6, 7)	2,948.05	388.26	$0.10	0 (0, 0)	n/d	n/d	n/d
	08/09	4 (4, 4)	165.75	42.94	$0.08	14 (8, 9)	6,246.18	373.38	$0.11	5 (5, 4)	12,152.78	1,645.50	$0.01
	09/10	2 (2, 2)	--	--	--	5 (4, 5)	832.23	171.59	$0.04	0 (0, 0)	n/d	n/d	n/d
	10/11	3 (3, 3)	83.85	33.89	$0.02	5 (5, 2)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	11/12	0 (0, 0)	n/d	n/d	n/d	1 (1, 1)	--	--	--	0 (0, 0)	n/d	n/d	n/d
	12/13	2 (2, 2)	--	--	--	11 (5, 9)	884.76	36.26	$0.02	0 (0, 0)	n/d	n/d	n/d

Source: NMFS AKRO RAM division. Quota share transfer data.

Table 35: CR Program Computation Quota Share (QS) and IFQ Ratio, 2011/12 and 2012/13

Season	Crab QS Fishery	QS Pool for LLP Holders (CVO and CPO)	QS Pool for Captains/Crew (QS units)	QS Pool for all Harvester QS Units (Holders + Crew)	Final Ratio QS units/IFQ pound
2012/2013	BBR	387828995	12000335	399829330	56.5713
	BSS	970675714	30207732	1000883446	16.761
	SMB	29119073	910327	30029400	20.4699
	EAG	9700156	299989	10000145	3.3569
	WAG	38800000	1200058	40000058	14.9143
2011/2012	BBR	387828995	12000335	399829330	56.7086
	BSS	970675714	30207732	1000883446	12.5103
	SMB	29119073	902043	30021116	14.1402
	EAG	9700156	299583	9999739	3.5272
	WAG	38800000	1200058	40000058	15.6771

Source: NMFS AKRO RAM division, Quota Share and Processor Quota Share Pools and Ratios.

Table 36: Comparison Of QS Sale Price To IFQ Lease Price, 2012 Calendar Year

Year	Fishery	QS Pool	Average Price/QS unit	Ratio QS units/IFQ pound	QS Price/IFQ Pound	Average IFQ Lease Price	IFQ/QS Price ratio
11/12	BSS	CVO	0.64	12.51	8.01	1.02	0.13
12/13	BBR	CVC	0.71	56.57	40.17	5.34	0.13
12/13	BBR	CVO	0.62	56.57	35.07	5.18	0.15
12/13	SMB	CVO	1.03	20.47	21.08	1.63	0.08

Table 37: QS Use Caps As % Of Initial Quota Share Pool, by Holder Category and QS Type

Fishery	CDQ Group: CVO/CPO	Non-individual PQS holder: CVO/CPO QS	All other transferees: CVO/CPO	CVC/CPC
BBR	5%	5%	1%	2%
BSS	5%	5%	1%	2%
EBT	5%	5%	1%	2%
WBT	5%	5%	1%	2%
PIK	10%	5%	2%	4%
SMB	10%	5%	2%	4%
EAG	20%	5%	10%	20%
WAG	20%	5%	10%	20%
WAI	20%	5%	10%	20%

Table 38: IFQ Fisheries Owner- and Crew- Type Quota Share Holdings

		Owner QS			Crew QS		
Fishery	Season	QS holders	Median holding	Max holding	QS holders	Median holding	Max holding
BBR	Initial allocation	252	0.36%	2.24%	181	0.52%	1.23%
	2011/2012	257	0.29%	4.96%	140	0.55%	2.00%
	2012/2013	258	0.29%	4.96%	137	0.56%	2.00%
BSS	Initial allocation	241	0.39%	2.35%	155	0.64%	1.59%
	2011/2012	257	0.30%	4.94%	125	0.69%	1.99%
	2012/2013	261	0.27%	4.94%	124	0.69%	1.99%
EAG	Initial allocation	15	5.90%	20.11%	13	8.20%	12.79%
	2011/2012	17	4.45%	20.00%	10	8.55%	20.14%
	2012/2013	16	4.92%	20.00%	10	8.55%	20.14%
WAG	Initial allocation	15	1.78%	45.73%	9	6.17%	41.74%
	2011/2012	14	1.69%	45.73%	8	7.45%	41.74%
	2012/2013	14	1.69%	45.73%	8	7.45%	41.74%
EBT	Initial allocation	256	0.30%	3.87%	166	0.56%	1.99%
	2011/2012	245	0.28%	4.93%	149	0.58%	1.99%
	2012/2013	246	0.27%	4.93%	148	0.58%	1.99%
WBT	Initial allocation	256	0.30%	3.87%	166	0.56%	1.99%
	2011/2012	246	0.27%	4.94%	149	0.58%	1.99%
	2012/2013	247	0.27%	4.94%	148	0.58%	1.99%
SMB	Initial allocation	137	0.62%	4.43%	73	1.35%	3.10%
	2011/2012	145	0.55%	4.85%	67	1.42%	3.29%
	2012/2013	143	0.53%	4.85%	66	1.45%	3.29%
PIK	Initial allocation	112	0.53%	3.41%	40	2.47%	4.81%
	2011/2012	119	0.50%	6.96%	39	2.60%	4.81%
	2012/2013	119	0.50%	6.96%	39	2.60%	4.81%
WAI	Initial allocation	30	0.65%	45.16%	4	20.84%	49.46%
	2011/2012	36	0.62%	45.16%	4	20.84%	49.46%
	2012/2013	40	0.50%	45.16%	4	20.84%	49.46%

Source: NMFS AKRO RAM division, Quota shareholder files
2011/2012 and 2012/2013 holdings as of fishery season end.

Table 39: IFQ Fisheries Owner and Crew Quota Share Holdings by Fishery and Sector

			Owner QS				Crew QS			
Fishery	Quota type	Year	QS holders	Mean holding in fishery-owner-QS type pool (sd)	Median holding	Max holding	QS holders	Mean holding in fishery-crew-QS type pool (sd)	Median holding	Max holding
BBR	CV	Initial allocation	242	0.41% (0.30)	0.37%	2.17%	178	0.56% (0.22)	0.52%	1.17%
		2011/2012	250	0.40% (0.44)	0.31%	4.86%	137	0.73% (0.48)	0.56%	2.07%
		2012/2013	251	0.40% (0.44)	0.31%	4.86%	134	0.75% (0.50)	0.57%	2.07%
	CP	Initial allocation	13	7.69% (5.52)	8.40%	21.62%	8	12.50% (12.15)	11.16%	35.13%
		2011/2012	11	9.09% (6.67)	7.03%	21.62%	9	11.11% (11.89)	10.01%	35.13%
		2012/2013	11	9.09% (6.67)	7.03%	21.62%	9	11.11% (11.89)	10.01%	35.13%
BSS	CV	Initial allocation	231	0.43% (0.32)	0.41%	2.58%	152	0.66% (0.24)	0.66%	1.39%
		2011/2012	243	0.41% (0.44)	0.33%	4.37%	123	0.81% (0.48)	0.72%	2.11%
		2012/2013	247	0.40% (0.44)	0.31%	4.37%	122	0.82% (0.48)	0.72%	2.11%
	CP	Initial allocation	14	7.14% (3.66)	7.78%	13.53%	8	12.50% (7.31)	11.79%	27.11%
		2011/2012	22	4.55% (5.65)	2.31%	24.29%	7	14.29% (9.52)	11.33%	33.82%
		2012/2013	22	4.55% (5.65)	2.31%	24.29%	7	14.29% (9.52)	11.33%	33.82%
EAG	CV	Initial allocation	13	7.69% (5.49)	6.90%	21.12%	13	7.69% (3.28)	8.20%	12.79%
		2011/2012	15	6.67% (5.55)	5.25%	21.02%	10	10.00% (6.88)	8.55%	20.14%
		2012/2013	15	6.67% (5.49)	5.25%	21.02%	10	10.00% (6.88)	8.55%	20.14%
	CP	Initial allocation	2	50.00% (48.92)	50.00%	84.59%	0	n/a	n/a	n/a
		2011/2012	2	50.00% (48.92)	50.00%	84.59%	0	n/a	n/a	n/a
		2012/2013	1	100.00% (0.00)	100.00%	100.00%	0	n/a	n/a	n/a
WAG	CV	Initial allocation	13	7.69% (11.98)	3.31%	45.51%	8	12.50% (10.75)	9.67%	37.75%
		2011/2012	11	9.09% (13.72)	3.31%	45.51%	7	14.29% (11.66)	10.96%	37.75%
		2012/2013	11	9.09% (13.72)	3.31%	45.51%	7	14.29% (11.66)	10.96%	37.75%
	CP	Initial allocation	2	50.00% (69.21)	50.00%	98.94%	2	50.00% (68.14)	50.00%	98.19%
		2011/2012	3	33.33% (56.81)	1.06%	98.93%	2	50.00% (68.14)	50.00%	98.19%
		2012/2013	3	33.33% (56.81)	1.06%	98.93%	2	50.00% (68.14)	50.00%	98.19%
EBT	CV	Initial allocation	246	0.41% (0.38)	0.32%	2.94%	160	0.63% (0.38)	0.58%	2.08%
		2011/2012	237	0.42% (0.47)	0.29%	4.51%	143	0.70% (0.48)	0.61%	2.17%
		2012/2013	238	0.42% (0.46)	0.29%	4.51%	142	0.70% (0.48)	0.62%	2.17%
	CP	Initial allocation	13	7.69% (5.11)	6.97%	16.79%	15	6.67% (4.74)	5.37%	18.32%
		2011/2012	13	7.69% (5.21)	6.39%	16.79%	15	6.67% (4.74)	5.37%	18.32%
		2012/2013	13	7.69% (5.21)	6.39%	16.79%	15	6.67% (4.74)	5.37%	18.32%

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Table 39- continued

			Owner QS				Crew QS			
Fishery	Quota type	Year	QS holders	Mean holding in fishery-owner-QS type pool (sd)	Median holding	Max holding	QS holders	Mean holding in fishery-crew-QS type pool (sd)	Median holding	Max holding
WBT	CV	Initial allocation	246	0.41% (0.38)	0.32%	2.94%	160	0.63% (0.38)	0.58%	2.08%
		2011/2012	238	0.42% (0.47)	0.29%	4.53%	143	0.70% (0.48)	0.61%	2.17%
		2012/2013	239	0.42% (0.46)	0.29%	4.53%	142	0.70% (0.48)	0.62%	2.17%
	CP	Initial allocation	13	7.69% (5.11)	6.97%	16.79%	15	6.67% (4.74)	5.37%	18.32%
		2011/2012	13	7.69% (5.21)	6.39%	16.79%	15	6.67% (4.74)	5.37%	18.32%
		2012/2013	13	7.69% (5.21)	6.39%	16.79%	15	6.67% (4.74)	5.37%	18.32%
SMB	CV	Initial allocation	133	0.75% (0.62)	0.65%	4.52%	73	1.37% (0.44)	1.35%	3.10%
		2011/2012	141	0.71% (0.66)	0.56%	4.95%	67	1.49% (0.57)	1.42%	3.29%
		2012/2013	139	0.72% (0.68)	0.56%	4.95%	66	1.52% (0.58)	1.45%	3.29%
	CP	Initial allocation	5	20.00% (13.24)	15.46%	43.40%	0	n/a	n/a	n/a
		2011/2012	5	20.00% (13.24)	15.46%	43.40%	0	n/a	n/a	n/a
		2012/2013	5	20.00% (13.24)	15.46%	43.40%	0	n/a	n/a	n/a
PIK	CV	Initial allocation	111	0.90% (0.86)	0.55%	3.42%	40	2.50% (1.05)	2.47%	4.81%
		2011/2012	118	0.85% (0.94)	0.50%	6.99%	39	2.56% (1.17)	2.60%	4.81%
		2012/2013	118	0.85% (0.94)	0.50%	6.99%	39	2.56% (1.17)	2.60%	4.81%
	CP	Initial allocation	1	100.00% (0.00)	100.00%	100.00%	0	n/a	n/a	n/a
		2011/2012	1	100.00% (0.00)	100.00%	100.00%	0	n/a	n/a	n/a
		2012/2013	1	100.00% (0.00)	100.00%	100.00%	0	n/a	n/a	n/a
WAI	CV	Initial allocation	29	3.45% (5.32)	1.01%	22.09%	4	25.00% (22.34)	16.53%	57.26%
		2011/2012	35	2.86% (4.61)	1.01%	18.78%	4	25.00% (22.34)	16.53%	57.26%
		2012/2013	39	2.56% (4.44)	0.63%	18.78%	4	25.00% (22.34)	16.53%	57.26%
	CP	Initial allocation	2	50.00% (66.26)	50.00%	96.86%	1	100.00% (0.00)	100.00%	100.00%
		2011/2012	2	50.00% (66.26)	50.00%	96.86%	1	100.00% (0.00)	100.00%	100.00%
		2012/2013	2	50.00% (66.26)	50.00%	96.86%	1	100.00% (0.00)	100.00%	100.00%

Source: NMFS AKRO RAM division, Quota shareholder files
2011/2012 and 2012/2013 holdings as of fishery season end.

Table 40: Crew–Type Crab Quota Share Allocation Held by Active CFEC-Licensed Gear Operators, IFQ Fisheries

Quota type		Season 2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013
CVC	Total QS holders at season end	218	208	205	200	201	198	197	196
	QS holders active as gear operators during season	94	81	83	80	72	70	71	64
	% QS holders active as gear operators during season	43%	39%	40%	40%	36%	35%	36%	33%
	% season-end quota pool held by active gear operators	53%	51%	51%	49%	49%	47%	45%	43%
CPC	Total QS holders at season end	24	24	24	24	25	27	28	28
	QS holders active as gear operators during season	13	10	12	13	9	12	12	11
	% QS holders active as gear operators during season	54%	42%	50%	54%	36%	44%	43%	39%
	% season-end quota pool held by active gear operators	69%	69%	60%	60%	43%	51%	51%	49%
CVC+CPC	Total QS holders at season end	224	214	211	206	207	204	203	202
	QS holders active as gear operators during season	95	82	84	82	72	71	72	65
	% QS holders active as gear operators during season	42%	38%	40%	40%	35%	35%	35%	32%
	% season-end quota pool held by active gear operators	54%	52%	51%	50%	49%	48%	46%	43%

Source: NMFS AKRO RAM division, Quota share holders files and IFQ accounting data; ADF&G fish tickets via eLandings; CFEC Gear Operator Permit data

Active gear operators are those who made landings of any CR-program crab (including landings on IFQ, CDQ, and ACA permits), irrespective of fishery, during the given season. Data show gear operators active during the season and holding crew-type quota share (CVC, CPC) at season end.

Table 41: Crab Processor Quota Share Allocation Holdings, by IFQ Fishery

	Year	PQS holders	Mean holding of fishery PQS pool (sd)	Median holding	Max holding
BBR	Initial allocation	17	5.88% (7.07)	1.64%	22.98%
	2012/2013	16	6.25% (6.50)	4.39%	22.98%
	2011/2012	16	6.25% (6.50)	4.39%	22.98%
BSS	Initial allocation	20	5.00% (6.73)	2.08%	25.18%
	2011/2012	19	5.26% (6.81)	3.42%	25.18%
	2012/2013	19	5.26% (6.81)	3.42%	25.18%
EAG	Initial allocation	9	11.11% (15.37)	3.55%	45.36%
	2012/2013	10	10.00% (13.84)	5.24%	45.36%
	2011/2012	10	10.00% (13.84)	5.24%	45.36%
WAG	Initial allocation	9	11.11% (21.23)	1.03%	62.98%
	2012/2013	10	10.00% (12.04)	3.41%	29.98%
	2011/2012	10	10.00% (12.04)	3.41%	29.98%
EBT	Initial allocation	23	4.35% (6.51)	0.83%	24.26%
	2011/2012	21	4.76% (6.51)	1.85%	24.26%
	2012/2013	21	4.76% (6.51)	1.85%	24.26%
WBT	Initial allocation	23	4.35% (6.51)	0.83%	24.26%
	2012/2013	21	4.76% (6.51)	1.85%	24.26%
	2011/2012	21	4.76% (6.51)	1.85%	24.26%
SMB	Initial allocation	12	8.33% (10.56)	5.06%	32.67%
	2011/2012	10	10.00% (10.87)	6.87%	32.67%
	2012/2013	11	9.09% (10.30)	4.34%	32.67%
PIK	Initial allocation	14	7.14% (8.09)	3.17%	24.49%
	2012/2013	13	7.69% (8.19)	3.87%	24.49%
	2011/2012	13	7.69% (8.19)	3.87%	24.49%
WAI	Initial allocation	9	11.11% (21.23)	1.03%	62.98%
	2012/2013	8	12.50% (14.67)	4.03%	32.99%
	2011/2012	8	12.50% (14.67)	4.03%	32.99%

Source: NMFS AKRO RAM division, **Processor quota shareholder files**

2011/2012 and 2012/2013 holdings as of fishery season end.

Table 42: CDQ/ACA Group Direct Holdings Of CR Program/IFQ Quota Share Allocation, by Share Type and IFQ Fishery

		CP QS		CV QS		All QS		PQS	
Fishery	Year	CDQ groups	Share of fishery CP QS held	CDQ groups	Share of fishery CV QS held	CDQ groups	Share of fishery QS held	CDQ groups	Share of fishery PQS held
BBR	Initial allocation	1	4.29%	3	1.99%	4	2.09%	0	0.00%
	2011/2012	3	21.55%	5	11.12%	5	11.59%	2	3.92%
	2012/2013	3	21.55%	5	11.12%	5	11.59%	2	3.92%
BSS	Initial allocation	1	3.86%	4	2.22%	4	2.37%	0	0.00%
	2011/2012	3	27.38%	6	11.61%	6	13.03%	3	11.51%
	2012/2013	3	27.38%	6	11.61%	6	13.04%	3	11.51%
EAG	Initial allocation	1	15.41%	1	6.00%	2	6.44%	0	0.00%
	2011/2012	1	15.41%	3	29.17%	3	28.53%	2	8.16%
	2012/2013	0	0.00%	3	29.17%	3	27.80%	2	8.16%
WAG	Initial allocation	1	96.20%	1	2.35%	2	45.63%	0	0.00%
	2011/2012	1	96.19%	3	27.83%	3	59.35%	1	29.98%
	2012/2013	1	96.19%	3	27.83%	4	59.35%	1	29.98%
EBT	Initial allocation	1	3.39%	3	2.04%	4	2.13%	0	0.00%
	2011/2012	3	26.52%	6	9.93%	6	11.06%	0	0.00%
	2012/2013	3	26.52%	6	9.93%	6	11.06%	0	0.00%
WBT	Initial allocation	1	3.39%	3	2.04%	4	2.13%	0	0.00%
	2011/2012	3	26.52%	6	9.95%	6	11.07%	0	0.00%
	2012/2013	3	26.52%	6	9.95%	6	11.07%	0	0.00%
SMB	Initial allocation	1	43.40%	3	2.46%	4	3.24%	0	0.00%
	2011/2012	1	43.40%	4	8.58%	5	9.25%	0	0.00%
	2012/2013	1	43.40%	4	8.58%	5	9.25%	0	0.00%
PIK	Initial allocation	0	0.00%	2	2.52%	2	2.51%	0	0.00%
	2011/2012	0	0.00%	5	12.18%	5	12.12%	0	0.00%
	2012/2013	0	0.00%	5	12.18%	5	12.12%	0	0.00%
WAI	Initial allocation	1	95.82%	2	11.72%	2	43.90%	0	0.00%
	2011/2012	1	95.82%	5	15.38%	5	46.16%	0	0.00%
	2012/2013	1	95.82%	5	15.38%	5	46.16%	0	0.00%

Source: NMFS AKRO RAM division, **Processor quota shareholder files** ***and*** **Quota share holder files**

2011/2012 and 2012/2013 holdings as of fishery season end. Includes QS and PQS held by wholly owned direct subsidiaries of CDQ groups.

Table 43: Initial Crab QS/PQS Issuees With Holdings At Season End, by Share Type and IFQ Fishery

Fishery	Sector	Initial issuance	11/12	12/13	*Net change from initial issuance*	*Net change from 11/12-12/13*
BBR	CPC	8	6	6	-2	0
	CPO	13	8	8	-5	0
	CVC	178	116	113	-65	-3
	CVO	242	184	182	-60	-2
	ALLQS	426	308	302	-124	-6
	PRO	17	10	10	-7	0
BSS	CPC	8	6	6	-2	0
	CPO	14	9	9	-5	0
	CVC	152	104	100	-52	-4
	CVO	231	176	173	-58	-3
	ALLQS	389	284	278	-111	-6
	PRO	20	13	13	-7	0
BST	CPC	15	n/a	n/a	n/a	n/a
	CPO	14	n/a	n/a	n/a	n/a
	CVC	170	n/a	n/a	n/a	n/a
	CVO	248	n/a	n/a	n/a	n/a
	ALLQS	426	n/a	n/a	n/a	n/a
	PRO	23	n/a	n/a	n/a	n/a
EBT	CPC	15	15	15	0	0
	CPO	13	9	9	-4	0
	CVC	160	132	130	-30	-2
	CVO	246	193	189	-57	-4
	ALLQS	413	333	328	-85	-5
	PRO	23	16	16	-7	0
WBT	CPC	15	15	15	0	0
	CPO	13	9	9	-4	0
	CVC	160	132	130	-30	-2
	CVO	246	194	190	-56	-4
	ALLQS	413	334	329	-84	-5
	PRO	23	16	16	-7	0
EAG	CPO	2	1	0	-2	-1
	CVC	13	6	6	-7	0
	CVO	13	9	9	-4	0
	ALLQS	28	16	15	-13	-1
	PRO	9	6	6	-3	0
PIK	CPO	1	1	1	0	0
	CVC	40	36	35	-5	-1
	CVO	111	90	87	-24	-3
	ALLQS	148	123	119	-29	-4
	PRO	14	11	11	-3	0

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Table 43 - continued

Fishery	Sector	Initial issuance	11/12	12/13	*Net change from initial issuance*	*Net change from 11/12-12/13*
SMB	CPO	5	5	5	0	0
	CVC	73	55	55	-18	0
	CVO	133	101	95	-38	-6
	ALLQS	210	160	154	-56	-6
	PRO	12	6	6	-6	0
WAG	CPC	2	1	1	-1	0
	CPO	2	1	1	-1	0
	CVC	8	5	5	-3	0
	CVO	13	9	9	-4	0
	ALLQS	24	16	16	-8	0
	PRO	9	6	6	-3	0
WAI	CPC	1	1	1	0	0
	CPO	2	2	2	0	0
	CVC	4	4	4	0	0
	CVO	29	23	22	-7	-1
	ALLQS	34	28	27	-7	-1
	PRO	9	5	5	-4	0
Unique QS/PQS holders across all fisheries		532	427	421	-111	-6

Source: NMFS AKRO RAM division, **Processor quota shareholder files** ***and*** **Quota share holder files**

Initial issuees were issued BST quota; eastern and western BST quota (EBT, WBT) was issued in subsequent seasons. For EBT and WBT, net change from initial issuance shows the difference between initial quota holders in EBT or WBT in 2009/2010 and initial quota holders in BST at initial issuance.

Table 44: IFQ Fisheries New Holders Of QS and PQS In 2012/2013 Relative To Initial Allocation and 2011/2012 Season End

		Owner QS				Crew QS				PQS			
		New holder of owner QS in fishery		New holder of owner QS, all fisheries		New holder of crew QS in fishery		New holder of crew QS, all fisheries		New holder of PQS in fishery		New holder of PQS in all fisheries	
Fishery	Relative to	Entrants	Share of fishery owner QS pool acquired	Entrants	Share of fishery owner QS pool acquired	Entrants	Share of fishery crew QS pool acquired	Entrants	Share of fishery crew QS pool acquired	Entrants	Share of fishery PQS pool acquired	Entrants	Share of fishery PQS pool acquired
BBR	Initial allocation	68	24%	58	21%	21	19%	13	13%	6	23%	5	22%
	11/12 season end	9	4%	7	3%	0	0%	0	0%	0	0%	0	0%
BSS	Initial allocation	80	23%	70	20%	22	17%	15	13%	6	20%	5	20%
	11/12 season end	12	3%	10	3%	3	2%	2	2%	0	0%	0	0%
EAG	Initial allocation	7	42%	4	40%	4	23%	1	13%	4	20%	3	20%
	11/12 season end	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
WAG	Initial allocation	4	15%	3	3%	2	18%	1	12%	4	53%	3	53%
	11/12 season end	2	12%	0	0%	0	0%	0	0%	0	0%	0	0%
EBT	Initial allocation	48	19%	48	19%	12	7%	10	7%	5	11%	4	11%
	11/12 season end	9	4%	6	3%	1	1%	0	0%	0	0%	0	0%
WBT	Initial allocation	48	19%	48	19%	12	7%	10	7%	5	11%	4	11%
	11/12 season end	9	4%	6	3%	1	1%	0	0%	0	0%	0	0%
SMB	Initial allocation	44	25%	34	19%	11	19%	5	10%	5	17%	4	9%
	11/12 season end	10	5%	7	4%	0	0%	0	0%	1	4%	1	4%
PIK	Initial allocation	31	28%	21	21%	4	12%	1	3%	2	16%	1	2%
	11/12 season end	4	3%	3	2%	1	3%	0	0%	0	0%	0	0%
WAI	Initial allocation	17	19%	8	5%	0	0%	0	0%	3	62%	2	35%
	11/12 season end	5	1%	1	0%	0	0%	0	0%	0	0%	0	0%

Source: NMFS AKRO RAM division, Processor quota share holder files and Quota share holder files

Quota holdings as of 2012/2013 season end.

Table 45: IFQ Fisheries Landings by Season

Fishery	Season	IFQ permit holders	RCR permit holders	Landings	IFQ lbs (million)	Sold lbs (million)	Personal use lbs (thousand)	Deadloss lbs (thousand)
BBR	2005/2006	83	13	255	16.5	16.4	18.4	77.5
	2006/2007	36	13	183	13.9	13.8	10.3	98.7
	2007/2008	27	17	246	18.3	18.2	33.8	132
	2008/2009	25	16	252	18.3	18.1	21	160.8
	2009/2010	13	14	212	14.4	14.2	20.8	111.5
	2010/2011	10	14	223	13.3	13.2	25.9	99.5
	2011/2012	10	15	254	7.1	7	15.1	30.2
	2012/2013	9	15	219	7.1	7	15.2	28.8
BSS	2005/2006	70	13	301	33.3	32.9	0.7	322.6
	2006/2007	30	16	272	32.7	32.3	0.3	378.8
	2007/2008	25	17	459	56.7	56.2	6.5	500.1
	2008/2009	24	15	428	52.7	52.3	0.6	403.3
	2009/2010	12	11	321	43.2	42.7	1.8	500
	2010/2011	10	14	466	48.8	48.5	3.3	314
	2011/2012	11	14	798	79.9	79.4	5.4	582.4
	2012/2013	9	14	585	59.6	59.2	2.1	427.3
BST	2005/2006	34	9	73	0.8	0.8	2.9	14.6
EBT	2006/2007	21	10	57	1.3	1.3	0.7	8.4
	2007/2008	10	8	58	1.4	1.4	0.1	15.6
	2008/2009	10	10	60	1.6	1.5	0.8	11.9
	2009/2010	8	12	45	1.2	1.2	3.5	7.1
WBT	2006/2007	14	10	60	0.6	0.6	0	18.5
	2007/2008	8	8	44	0.5	0.5	1.1	4.1
	2008/2009	10	7	50	0.1	0.1	0.1	2.6
	2009/2010	4	1	22	--	--	--	--
EAG	2005/2006	6	5	32	2.6	2.5	0.1	23.8
	2006/2007	4	6	32	2.7	2.7	0	31.3
	2007/2008	4	4	36	2.7	2.7	0	21
	2008/2009	3	5	29	2.8	2.8	0	24.1
	2009/2010	2	6	32	--	--	--	--
	2010/2011	2	7	30	--	--	--	--
	2011/2012	2	9	45	--	--	--	--
	2012/2013	2	10	46	--	--	--	--
WAG	2005/2006	3	5	42	2.4	2.4	3.5	26.3
	2006/2007	3	5	31	2	2	0	19.8
	2007/2008	3	4	34	2.2	2.2	0	23.2
	2008/2009	3	7	37	2.3	2.2	0.2	22.8
	2009/2010	2	5	38	--	--	--	--
	2010/2011	2	7	37	--	--	--	--
	2011/2012	2	7	43	--	--	--	--
	2012/2013	2	8	46	--	--	--	--
SMB	2009/2010	1	6	30	--	--	--	--
	2010/2011	2	8	63	--	--	--	--
	2011/2012	6	10	107	1.7	1.7	2.9	25.6
	2012/2013	3	10	125	1.5	1.4	0.9	19.8

Source: NMFS AKRO RAM division IFQ accounting database.

Excludes harvest from CDQ programs. A landing is an offload by a vessel to a registered crab receiver, and includes at sea landings on catcher/processors and stationary floating processors. A fishing cooperative and its members are counted as a single IFQ permit holder.

Table 46: Fleet Harvest Statistics by Calendar Year

			All vessels	Median vessel harvest		
Fishery	Year	Vessels	Sold weight (million lbs)	Sold weight, (1000 lbs)	as percent of fishery-year commercial lbs	Gini ratio
AIG	1998	16	5.44	302.09	5.55%	0.42
	1999	16	5.1	249.34	4.89%	0.42
	2000	17	5.95	228.92	3.85%	0.45
	2001	21	6.38	209.56	3.28%	0.47
	2002	22	5.54	167.04	3.02%	0.46
	2003	21	5.82	189.45	3.26%	0.45
	2004	22	6.02	168.79	2.80%	0.49
	2005	9	4.44	595.27	13.42%	0.31
	2006	7	5.24	623.29	11.89%	0.34
	2007	6	5.44	755.96	13.90%	0.34
	2008	5	5.73	1246.72	21.77%	0.18
	2009	5	5.51	1109.87	20.13%	0.19
	2010	5	6.09	1410.32	23.15%	0.2
	2011	5	6	1324.31	22.09%	0.21
	2012	6	5.84	1007.69	17.25%	0.36
BBR	1998	274	14.7	49.34	0.34%	0.3
	1999	256	11.53	37.92	0.33%	0.29
	2000	244	8.07	28.46	0.35%	0.31
	2001	230	8.3	29.26	0.35%	0.34
	2002	241	9.48	36.09	0.38%	0.24
	2003	250	15.39	48.19	0.31%	0.35
	2004	251	15.02	53.79	0.36%	0.28
	2005	89	18.14	177.99	0.98%	0.37
	2006	81	15.55	169.27	1.09%	0.35
	2007	73	20.17	259.63	1.29%	0.32
	2008	79	20.13	240.73	1.20%	0.31
	2009	70	15.78	209.29	1.33%	0.26
	2010	65	14.73	214.69	1.46%	0.28
	2011	62	7.79	109.07	1.40%	0.3
	2012	64	7.8	108.53	1.39%	0.3
BSS	1998	230	249.05	1050.76	0.42%	0.23
	1999	241	192.41	813.75	0.42%	0.25
	2000	231	32.81	132.61	0.40%	0.28
	2001	207	24.78	88.71	0.36%	0.4
	2002	191	31.94	149.81	0.47%	0.31
	2003	190	27.51	127.15	0.46%	0.27
	2004	189	23.69	113.04	0.48%	0.26
	2005	167	24.86	131.14	0.53%	0.24
	2006	78	38.02	402.31	1.06%	0.37
	2007	68	34.76	447.33	1.29%	0.34
	2008	78	62.23	702.73	1.13%	0.31
	2009	77	57.69	599.96	1.04%	0.32
	2010	68	47.84	642.93	1.34%	0.32
	2011	68	54.05	693.58	1.28%	0.3
	2012	72	88.23	1126.73	1.28%	0.3
BST	2005	4	0.26	--	--	0.37
	2006	45	0.99	5.94	0.60%	0.72
	2007	29	2.25	56.02	2.49%	0.52
	2008	30	2.33	45.52	1.95%	0.65
	2009	18	2.14	91.97	4.30%	0.63
	2010	4	0.37	--	--	0.25

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Table 46 - continued

Fishery	Year	Vessels	All vessels Sold weight (million lbs)	Median vessel harvest Sold weight, (1000 lbs)	Median vessel harvest as percent of fishery-year commercial lbs	Gini ratio
PIK	1998	58	1.03	15.61	1.52%	0.34
SMB	1998	131	2.95	20.54	0.70%	0.22
	2009	7	0.45	33.85	7.52%	0.42
	2010	11	1.25	117.3	9.36%	0.34
	2011	18	1.85	80.15	4.33%	0.32
	2012	17	1.59	83.71	5.28%	0.32
WAI	1998	1	--	--	--	--
	2002	33	0.5	14.29	2.85%	0.3
	2003	30	0.48	13.18	2.77%	0.31

Source: ADF&G fish tickets, eLandings

Data shown by calendar year. Includes harvest from CDQ and IFQ fisheries and pre-rationalization general access fisheries, as well as landings and harvest made on catcher/processors.

Table 47: Purchasing statistics

Fishery	Year	Buyers	Median purchase per buyer: Purchased lbs (million)	Median purchase per buyer: as percent of fishery year commercial lbs	Purchased lbs (million)	Gini ratio
AIG	1998	9	0.24	4.4%	5.44	0.65
	1999	8	0.29	5.7%	5.1	0.60
	2000	7	0.66	11.1%	5.95	0.41
	2001	7	0.36	5.7%	6.38	0.59
	2002	6	0.83	15.1%	5.54	0.50
	2003	6	1.08	18.6%	5.82	0.45
	2004	5	1.35	22.5%	6.02	0.40
	2005	6	0.48	10.8%	4.44	0.49
	2006	6	0.71	13.5%	5.24	0.56
	2007	6	0.79	14.5%	5.44	0.49
	2008	7	1.04	18.1%	5.73	0.34
	2009	9	0.30	5.4%	5.51	0.58
	2010	9	0.49	8.0%	6.09	0.42
	2011	14	0.28	4.7%	6	0.52
	2012	14	0.20	3.4%	5.84	0.53
BBR	1998	28	0.26	1.8%	14.7	0.61
	1999	24	0.21	1.9%	11.53	0.61
	2000	24	0.11	1.4%	8.07	0.65
	2001	25	0.10	1.2%	8.3	0.66
	2002	26	0.13	1.4%	9.48	0.64
	2003	26	0.29	1.9%	15.39	0.58
	2004	25	0.23	1.5%	15.02	0.61
	2005	16	0.50	2.8%	18.14	0.61
	2006	15	0.54	3.5%	15.55	0.61
	2007	18	0.52	2.6%	20.17	0.60
	2008	17	0.61	3.0%	20.13	0.54
	2009	16	0.48	3.1%	15.78	0.55
	2010	17	0.39	2.7%	14.73	0.58
	2011	18	0.20	2.5%	7.79	0.58
	2012	17	0.33	4.2%	7.8	0.54
BSS	1998	44	1.73	0.7%	249.05	0.59
	1999	37	3.79	2.0%	192.41	0.55
	2000	28	0.86	2.6%	32.81	0.52
	2001	24	0.63	2.5%	24.78	0.51
	2002	27	0.35	1.1%	31.94	0.63
	2003	21	0.97	3.5%	27.51	0.48
	2004	23	0.61	2.6%	23.69	0.53
	2005	20	0.86	3.5%	24.86	0.53
	2006	13	2.27	6.0%	38.02	0.47
	2007	18	1.74	5.0%	34.76	0.49
	2008	17	2.96	4.8%	62.23	0.49
	2009	17	2.64	4.6%	57.69	0.49
	2010	13	3.30	6.9%	47.84	0.42
	2011	16	2.21	4.1%	54.05	0.49
	2012	16	3.73	4.2%	88.23	0.50

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Table 47 - continued

Fishery	Year	Buyers	Median purchase per buyer: Purchased lbs (million)	Median purchase per buyer: as percent of fishery year commercial lbs	Purchased lbs (million)	Gini ratio
BST	2005	5	0.02	6.0%	0.26	0.78
	2006	9	0.07	7.4%	0.99	0.61
	2007	9	0.21	9.4%	2.25	0.41
	2008	11	0.16	6.9%	2.33	0.51
	2009	11	0.16	7.5%	2.14	0.45
	2010	7	0.04	9.6%	0.37	0.43
PIK	1998	17	0.03	2.8%	1.03	0.57
SMB	1998	16	0.09	3.1%	2.95	0.66
	2009	6	0.06	12.2%	0.45	0.45
	2010	9	0.07	5.7%	1.25	0.59
	2011	11	0.08	4.1%	1.85	0.61
	2012	11	0.07	4.4%	1.59	0.59
WAI	1998	1	--	--	--	--
	2002	9	0.04	8.2%	0.5	0.42
	2003	10	0.04	8.2%	0.48	0.53

Source: ADF&G fish tickets and eLandings.

Data shown by calendar year. Includes harvest from CDQ and IFQ fisheries and pre-rationalization general access fisheries. Landings/harvest made by and self-processed by catcher/processors are treated as purchases, with catcher/processors treated

Buyers include catcher/processors landing and processing their own crab.

Table 48: Delivery and Trip Statistics by Season, CR Program Fisheries

			Deliveries			Trips		
	Season	Vessels	Total	Deliveries per vessel mean(sd)	Landings per delivery, mean(sd) (thousand lbs)	Total	Trips per vessel means(sd)	Landings per trip, mean(sd) (thousand lbs)
BBR	1998	274	293	1.1 (0.3)	50.2 (27.3)	n/d	n/d	n/d
	1999	256	273	1.1 (0.3)	42.2 (22.8)	n/d	n/d	n/d
	2000	244	263	1.1 (0.4)	30.7 (16.2)	n/d	n/d	n/d
	2001	230	249	1.1 (0.4)	33.3 (20.1)	n/d	n/d	n/d
	2002	241	258	1.1 (0.4)	36.7 (14.6)	n/d	n/d	n/d
	2003	250	274	1.1 (0.4)	56.2 (35.5)	n/d	n/d	n/d
	2004	251	278	1.1 (0.4)	54 (25.1)	n/d	n/d	n/d
	2005-2006	89	261	2.9 (1.7)	69.8 (47.8)	n/d	n/d	n/d
	2006-2007	81	187	2.3 (1.1)	82.8 (61.6)	156	1.9 (0.9)	100.1 (72.8)
	2007-2008	74	247	3.3 (1.6)	81.7 (53.7)	207	2.8 (1.4)	98.4 (55.7)
	2008-2009	78	263	3.4 (1.8)	76.5 (48.1)	237	3 (1.5)	85.8 (51.3)
	2009-2010	70	211	3 (1.2)	74.8 (48.4)	197	2.8 (1.1)	80.9 (50.1)
	2010-2011	65	213	3.3 (1.3)	69 (42.7)	198	3 (1.1)	74.9 (50.1)
	2011-2012	62	124	2 (0.9)	62.8 (49.8)	114	1.8 (0.9)	68.1 (51.9)
BSS	1999	241	1720	7.1 (2.7)	111.9 (71.8)	n/d	n/d	n/d
	2000	231	313	1.4 (0.7)	104.8 (53.8)	n/d	n/d	n/d
	2001	207	316	1.5 (1)	78.4 (56.3)	n/d	n/d	n/d
	2002	191	430	2.3 (1.1)	74.3 (57.5)	n/d	n/d	n/d
	2003	190	261	1.4 (1)	105.4 (55.9)	n/d	n/d	n/d
	2004	189	243	1.3 (0.8)	97.5 (53.9)	n/d	n/d	n/d
	2005	167	211	1.3 (0.7)	116.1 (52.3)	n/d	n/d	n/d
	2005-2006	78	316	4.1 (2.9)	115.9 (75.7)	n/d	n/d	n/d
	2006-2007	69	273	4 (2.5)	131.5 (83.1)	215	3.1 (2)	169.1 (104.1)
	2007-2008	78	466	6 (2.9)	134.1 (81.2)	413	5.3 (2.5)	151.9 (85.9)
	2008-2009	77	437	5.7 (2.7)	132.9 (77.9)	373	4.8 (2.2)	157 (90.5)
	2009-2010	68	308	4.5 (1.9)	154.1 (85.4)	283	4.2 (1.6)	168.5 (91.5)
	2010-2011	68	343	5 (2.2)	157.2 (83.9)	311	4.6 (2.1)	174.5 (91.8)
	2011-2012	72	658	9.1 (3.7)	134 (85.4)	626	8.7 (3.4)	141.9 (90.9)
BST	2005-2006	33	64	1.9 (1.1)	14.6 (22.9)	n/d	n/d	n/d
	2006-2007	39	88	2.3 (1.3)	23.8 (28.2)	81	2.1 (1.2)	18.5 (28.3)
	2007-2008	27	95	3.5 (2.4)	21.9 (25.3)	93	3.4 (2.4)	17.9 (25.3)
	2008-2009	20	67	3.4 (3)	28.7 (35.8)	59	3 (2.3)	15.4 (34.4)
	2009-2010	13	32	2.5 (1.6)	41 (43)	28	2.2 (1.2)	15.1 (35.9)
EAG	1998	14	53	3.8 (1.4)	59.7 (36)	n/d	n/d	n/d
	1999	15	59	3.9 (1.2)	50.8 (32.5)	n/d	n/d	n/d
	2000	15	50	3.3 (0.8)	61.5 (33)	n/d	n/d	n/d
	2001	19	45	2.4 (0.6)	69.5 (44.3)	n/d	n/d	n/d
	2002	19	43	2.3 (0.5)	64.3 (38.1)	n/d	n/d	n/d
	2003	18	37	2.1 (0.2)	78.4 (38)	n/d	n/d	n/d
	2004	19	32	1.7 (0.5)	88.8 (54.7)	n/d	n/d	n/d
	2005-2006	7	34	4.9 (2.1)	83.5 (47.3)	n/d	n/d	n/d
	2006-2007	6	28	4.7 (4.2)	105.6 (59.5)	22	3.7 (2)	136 (82.5)
	2007-2008	4	35	8.8 (--)	84.8 (57.7)	28	7 (--)	106.8 (62.3)
	2008-2009	3	--	--	--	--	--	--
	2009-2010	3	--	--	--	--	--	--
	2010-2011	3	--	--	--	--	--	--
	2011-2012	3	--	--	--	--	--	--
PIK	1998	58	91	1.6 (0.7)	11.3 (8.7)	n/d	n/d	n/d

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Table 48 - continued

			Deliveries			Trips		
	Season	Vessels	Total	Deliveries per vessel mean(sd)	Landings per delivery, mean(sd) (thousand lbs)	Total	Trips per vessel means(sd)	Landings per trip, mean(sd) (thousand lbs)
PIK	1998	58	91	1.6 (0.7)	11.3 (8.7)	n/d	n/d	n/d
SMB	1998	131	259	2 (0.5)	11.4 (7.1)	n/d	n/d	n/d
	2009-2010	7	16	2.3 (1.5)	28.1 (16.5)	15	2.1 (1.5)	30.7 (22.3)
	2010-2011	11	40	3.6 (1.5)	31.3 (17.8)	38	3.5 (1.4)	33.3 (17.7)
	2011-2012	18	58	3.2 (1.4)	31.9 (17)	57	3.2 (1.4)	33 (21)
WAG	1998-1999	3	--	--	--	n/d	n/d	n/d
	1999-2000	15	113	7.5 (10.4)	24.1 (15.3)	n/d	n/d	n/d
	2000-2001	12	97	8.1 (9.4)	28.6 (17.4)	n/d	n/d	n/d
	2001-2002	9	90	10 (8.2)	29.9 (16.2)	n/d	n/d	n/d
	2002-2003	6	72	12 (9.2)	36.2 (20.7)	n/d	n/d	n/d
	2003-2004	6	60	10 (6.8)	44 (29.5)	n/d	n/d	n/d
	2004-2005	6	51	8.5 (5.9)	51.8 (36.2)	n/d	n/d	n/d
	2005-2006	3	--	--	--	n/d	n/d	n/d
	2006-2007	4	33	8.3 (--)	67.6 (29.6)	29	7.3 (--)	77.7 (32)
	2007-2008	3	--	--	--	--	--	--
	2008-2009	3	--	--	--	--	--	--
	2009-2010	3	--	--	--	--	--	--
	2010-2011	3	--	--	--	--	--	--
	2011-2012	3	--	--	--	--	--	--
WAI	1998-1999	1	--	--	--	n/d	n/d	n/d
	2002-2003	3	--	--	--	n/d	n/d	n/d
	2003-2004	30	30	1 (0)	15.8 (9.7)	n/d	n/d	n/d

Source: NMFS AKRO RAM division IFQ accounting database and ADF&G fish tickets via eLandings.

A delivery is counted as each unique day that a vessel landed fish and may include landings to multiple processors. A single fishing trip may result in multiple deliveries if fish was landed on multiple days. Includes landings on catcher/processors. Trip accounting data unavailable prior to 2006/2007 season.

Table 49: Opening and Closing Dates, Season Length, and Days Fished by Season, CR Program Fisheries

Fishery	Season	Season dates	Season length, days	Earliest landing	Latest landing	Days fished	Percent of season fished
BBR	1998	Nov 1 - Nov 6	6				
	1999	Oct 15 - Oct 20	6				
	2000	Oct 16 - Oct 20	5				
	2001	Oct 15 - Oct 18	4				
	2002	Oct 15 - Oct 18	4				
	2003	Oct 15 - Oct 20	6				
	2004	Oct 15 - Oct 18	4				
	2005/2006	Oct 15 - Jan 15	93	20-Oct	16-Jan	89	96%
	2006/2007	Oct 15 - Jan 15	93	19-Oct	28-Nov	41	44%
	2007/2008	Oct 15 - Jan 15	93	18-Oct	15-Jan	90	97%
	2008/2009	Oct 15 - Jan 15	93	18-Oct	17-Jan	92	99%
	2009/2010	Oct 15 - Jan 15	93	17-Oct	16-Jan	92	99%
	2010/2011	Oct 15 - Jan 15	93	16-Oct	11-Dec	57	61%
	2011/2012	Oct 15 - Jan 15	93	17-Oct	18-Nov	33	35%
	2012/2013	Oct 15 - Jan 15	93	18-Oct	16-Dec	60	65%
BSS	1998	Jan 15 - Mar 20	65				
	1999	Jan 15 - Mar 22	67				
	2000	Apr 1 - Apr 8	8				
	2001	Jan 15 - Feb 14	31				
	2002	Jan 15 - Feb 8	25				
	2003	Jan 15 - Jan 25	11				
	2004	Jan 15 - Jan 23	9				
	2005	Jan 15 - Jan 20	6				
	2005/2006	Oct 15 - May 31	229	27-Oct	27-May	213	93%
	2006/2007	Oct 15 - May 31	229	7-Nov	5-May	180	79%
	2007/2008	Oct 15 - May 31	230	18-Nov	10-May	175	76%
	2008/2009	Oct 15 - May 31	229	30-Nov	16-May	168	73%
	2009/2010	Oct 15 - May 31	229	11-Jan	6-May	116	51%
	2010/2011	Oct 15 - May 31	229	18-Nov	9-Apr	143	62%
	2011/2012	Oct 15 - Jun 15[a]	245	2-Nov	19-Jun	231	94%
	2012/2013	Oct 15 - May 31	229	24-Nov	5-Jun	194	85%
BST	2005/2006	Oct 15 - Mar 31	168	27-Oct	2-Apr	158	94%
	2006/2007	Oct 15 - Mar 31	168	23-Oct	6-Apr	166	99%
	2007/2008	Oct 15 - Mar 31	169	20-Oct	2-Apr	166	98%
	2008/2009	Oct 15 - Mar 31	168	19-Oct	25-Mar	158	94%
	2009/2010	Oct 15 - Mar 31	168	17-Oct	1-Mar	136	81%
EAG	1998	Sep 1 - Nov 7	68				
	1999	Sep 1 - Oct 25	55				
	2000	Aug 15 - Sep 24	41				
	2001	Aug 15 - Sep 10	27				
	2002	Aug 15 - Sep 7	24				
	2003	Aug 15 - Sep 8	25				
	2004	Aug 15 - Aug 29	15				
	2005/2006	Aug 15 - May 15	274	30-Aug	28-Mar	211	77%
	2006/2007	Aug 15 - May 15	274	31-Aug	13-Jan	136	50%
	2007/2008	Aug 15 - May 15	275	30-Aug	9-Feb	164	60%
	2008/2009	Aug 15 - May 15	274	7-Sep	22-Dec	107	39%
	2009/2010	Aug 15 - May 15	274	31-Aug	10-Jan	133	49%
	2010/2011	Aug 15 - May 15	274	22-Aug	16-Dec	117	43%
	2011/2012	Aug 15 - May 15	275	26-Aug	24-Nov	91	33%
	2012/2013	Aug 15 - May 15	274	25-Aug	3-Dec	101	37%

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Table 49 - continued

Fishery	Season	Season dates	Season length, days	Earliest landing	Latest landing	Days fished	Percent of season fished
WAG	1998/1999	Sep 1 - Aug 31	365				
	1999/2000	Sep 1 - Aug 14	349				
	2000/2001	Aug 15 - May 28	287				
	2001/2002	Aug 15 - Mar 30	228				
	2002/2003	Aug 15 - Mar 8	206				
	2003/2004	Aug 15 - Feb 6	176				
	2004/2005	Aug 15 - Jan 3	142				
	2005/2006	Aug 15 - May 15	274	6-Sep	25-Mar	201	73%
	2006/2007	Aug 15 - May 15	274	10-Sep	12-May	245	89%
	2007/2008	Aug 15 - May 15	275	14-Sep	21-May	251	91%
	2008/2009	Aug 15 - May 15	274	13-Sep	12-May	242	88%
	2009/2010	Aug 15 - May 15	274	5-Sep	18-May	256	93%
	2010/2011	Aug 15 - May 15	274	11-Sep	18-Mar	189	69%
	2011/2012	Aug 15 - May 15	275	6-Sep	10-Apr	218	79%
	2012/2013	Aug 15 - May 15	274	10-Sep	5-May	238	87%
SMB	1998	Sep 15 - Sep 26	12				
	2009/2010	Oct 15 - Feb 1	110	23-Oct	7-Dec	46	42%
	2010/2011	Oct 15 - Feb 1	110	23-Oct	11-Dec	50	45%
	2011/2012	Oct 15 - Feb 1	110	21-Oct	15-Dec	56	51%
	2012/2013	Oct 15 - Feb 1	110	23-Oct	8-Dec	47	43%
PIK	1998	Sep 15 - Sep 28	14				
WAI	1998/1999	Nov 1 - Jul 31	273				
	2002/2003	Oct 25 - Oct 27	3				
	2003/2004	Oct 25 - Oct 29	5				

Source: Season dates and season length from ADF&G. Earliest and latest landing dates in 2005/206 and later seasons from NMFS AKRO RAM division IFQ accounting database and ADF&G fish tickets via eLandings. Data for 2004/2005 and earlier seasons from ADF&G Annual Management Report for the Commercial and Subsistence Shellfish Fisheries of the Aleutian Islands, Bering Sea and the Westward Region's Shellfish Observer Program, 2010/11.

Some 2007/2008 and 2011/2012 fisheries extended by a day due to the leap year. Days fished is calculated as the difference between latest and earliest landing dates, inclusive. Percent of season fished is calculated as days fished divided by season length. In some fisheries, deliveries made were after the season closing date. Includes landings made on catcher/processors.

[a] 2011/2012 Bering Sea Snow crab fishery season extended past regular season closing date (May 31) due to sea ice coverage.

Table 50: Days Between First and Last Delivery by Season, CR Program Fisheries

			Vessels with multiple deliveries				
Fishery	Season	Vessels with one delivery	Vessels	Mean days between first and last delivery (sd)	Median days	Minimum days	Maximum days
BBR	2005-2006	21	69	19 (15)	17	1	70
	2006-2007	23	59	10 (6)	9	1	26
	2007-2008	7	68	18 (12)	15	1	51
	2008-2009	10	69	22 (14)	16	4	57
	2009-2010	8	63	18 (12)	18	2	67
	2010-2011	5	61	21 (10)	19	5	51
	2011-2012	23	40	7 (5)	6	1	21
	2012-2013	29	35	6 (4)	5	1	21
BSS	2005-2006	3	75	32 (30)	20	1	148
	2006-2007	9	60	33 (26)	26	5	156
	2007-2008	0	78	41 (25)	36	7	116
	2008-2009	0	77	38 (22)	38	5	117
	2009-2010	2	67	31 (20)	27	9	107
	2010-2011	2	67	34 (19)	29	7	102
	2011-2012	0	72	105 (45)	116	12	201
	2012-2013	0	70	56 (34)	47	7	151
BST	2005-2006	15	18	30 (34)	19	1	148
	2006-2007	14	25	49 (48)	30	1	145
	2007-2008	4	23	73 (56)	86	4	161
	2008-2009	6	14	56 (50)	40	3	146
	2009-2010	5	8	24 (34)	15	2	105
EAG	2005-2006	0	7	72 (66)	47	23	182
	2006-2007	0	6	41 (25)	37	17	86
	2007-2008	1	4	77 (27)	77	47	105
	2008-2009	0	3	70 (37)	75	31	105
	2009-2010	0	3	85 (50)	91	33	132
	2010-2011	0	3	77 (39)	76	38	116
	2011-2012	0	3	63 (30)	69	31	90
	2012-2013	0	3	70 (35)	89	30	92
SMB	2009-2010	3	4	24 (16)	24	5	45
	2010-2011	0	11	25 (17)	24	6	47
	2011-2012	1	17	27 (15)	23	6	50
	2012-2013	5	12	23 (13)	20	6	44
WAG	2005-2006	0	3	177 (3)	176	175	181
	2006-2007	1	4	122 (94)	113	22	241
	2007-2008	0	3	143 (112)	153	26	250
	2008-2009	2	2	196 (60)	196	153	238
	2009-2010	0	3	129 (107)	136	18	232
	2010-2011	0	3	121 (72)	134	44	186
	2011-2012	0	3	118 (61)	140	49	164
	2012-2013	0	4	87 (57)	67	46	168

Source: NMFS AKRO RAM division IFQ accounting database and eLandings.

A delivery is counted as each unique day that a vessel landed fish and may include landings to multiple processors. A single fishing trip may result in multiple deliveries if fish was landed on multiple days. Includes landings on catcher/processors.

Table 51: BBR Fishery Harvest by Week Of Season

	2008/2009		2009/2010		2010/2011		2011/2012		2012/2013	
Week	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)
1: 15-Oct	6	0.01 (0.02, 0.01)	5	0.01 (0.01, 0.00)	7	0.02 (0.02, 0.00)	16	0.07 (0.09, 0.02)	11	0.09 (0.08, 0.01)
2: 22-Oct	51	0.29 (0.32, 0.14)	57	0.42 (0.42, 0.21)	49	0.34 (0.36, 0.09)	52	0.71 (0.74, 0.51)	43	0.69 (0.76, 0.30)
3: 29-Oct	48	0.53 (0.61, 0.26)	48	0.68 (0.69, 0.46)	36	0.54 (0.58, 0.30)	27	0.97 (0.97, 0.95)	28	0.95 (0.96, 0.86)
4: 05-Nov	31	0.69 (0.77, 0.39)	28	0.81 (0.83, 0.64)	45	0.78 (0.81, 0.63)	6	0.98 (0.97, 1.00)	10	1.00 (1.00, 0.98)
5: 12-Nov	36	0.85 (0.93, 0.58)	27	0.93 (0.95, 0.83)	24	0.87 (0.89, 0.82)	2	1.00 (1.00, 1.00)	0	1.00 (1.00, 0.98)
6: 19-Nov	18	0.91 (0.96, 0.77)	12	0.98 (0.98, 0.95)	18	0.95 (0.97, 0.95)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 0.98)
7: 26-Nov	13	0.94 (0.97, 0.85)	6	1.00 (1.00, 1.00)	8	0.99 (0.99, 0.99)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 0.98)
8: 03-Dec	15	0.99 (0.99, 0.95)	1	1.00 (1.00, 1.00)	3	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	1	1.00 (1.00, 0.98)
9: 10-Dec	6	1.00 (1.00, 0.97)	0	1.00 (1.00, 1.00)	1	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	1	1.00 (1.00, 1.00)
10: 17-Dec	1	1.00 (1.00, 0.98)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)
11: 24-Dec	1	1.00 (1.00, 0.99)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)
12: 31-Dec	0	1.00 (1.00, 0.99)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)
13: 07-Jan	0	1.00 (1.00, 0.99)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)
14: 14-Jan	0	1.00 (1.00, 0.99)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)
Postseason: 16-Jan	1	1.00 (1.00, 1.00)	1	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)

Source: ADF&G fish tickets and NMFS RAM IFQ accounting database via eLandings.

BBR fishery season open by regulation from October 15 to January 15. Running share of sold lbs landed shows running share of a) combined IFQ and CDQ sold pounds, including catcher/processor landings ("All"); b) sold pounds landed on catcher vessel owner A-type IFQ permits (CVOA); and c) sold pounds landed on catcher vessel owner B-type IFQ permits or catcher vessel crew type IFQ permits (CVOB + CVC). CVOA IFQ permits are subject to matching to processing quota, whereas CVC and CVOB may be landed at any processor.

Table 52: BSS Fishery Harvest by Week Of Season

	2008/2009		2009/2010		2010/2011		2011/2012		2012/2013	
Week	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)	Vessels	Running share of sold lbs landed: All (CVOA, CVOB+CVC)
1: 15-Oct	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
2: 22-Oct	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
3: 29-Oct	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
4: 05-Nov	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
5: 12-Nov	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)
6: 19-Nov	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)
7: 26-Nov	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.01 (0.00, 0.00)	0	0.00 (0.00, 0.00)
8: 03-Dec	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.01 (0.00, 0.00)	1	0.01 (0.00, 0.00)
9: 10-Dec	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.00 (0.00, 0.00)	0	0.01 (0.00, 0.00)	0	0.01 (0.00, 0.00)
10: 17-Dec	1	0.00 (0.00, 0.00)	0	0.00 (0.00, 0.00)	1	0.01 (0.00, 0.00)	0	0.01 (0.00, 0.00)	1	0.01 (0.00, 0.00)
11: 24-Dec	1	0.01 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.01 (0.00, 0.00)	0	0.01 (0.00, 0.00)	0	0.01 (0.00, 0.00)
12: 31-Dec	1	0.01 (0.00, 0.00)	0	0.00 (0.00, 0.00)	0	0.01 (0.00, 0.00)	0	0.01 (0.00, 0.00)	8	0.03 (0.04, 0.00)
13: 07-Jan	3	0.01 (0.00, 0.00)	6	0.03 (0.04, 0.00)	7	0.03 (0.02, 0.00)	20	0.05 (0.07, 0.01)	30	0.12 (0.14, 0.01)
14: 14-Jan	18	0.06 (0.07, 0.01)	19	0.10 (0.14, 0.00)	24	0.11 (0.14, 0.01)	26	0.12 (0.14, 0.01)	29	0.20 (0.24, 0.03)
15: 21-Jan	31	0.17 (0.19, 0.04)	28	0.22 (0.29, 0.02)	26	0.20 (0.23, 0.01)	31	0.20 (0.23, 0.03)	33	0.29 (0.34, 0.07)
16: 28-Jan	35	0.28 (0.34, 0.07)	27	0.33 (0.43, 0.07)	35	0.32 (0.36, 0.07)	33	0.24 (0.29, 0.05)	29	0.36 (0.42, 0.12)
17: 04-Feb	30	0.36 (0.43, 0.17)	36	0.48 (0.57, 0.19)	48	0.48 (0.53, 0.15)	16	0.29 (0.33, 0.11)	38	0.45 (0.51, 0.14)
18: 11-Feb	28	0.44 (0.51, 0.21)	34	0.59 (0.69, 0.32)	41	0.62 (0.69, 0.22)	25	0.33 (0.38, 0.14)	44	0.54 (0.60, 0.21)
19: 18-Feb	33	0.54 (0.60, 0.31)	33	0.73 (0.81, 0.50)	37	0.74 (0.78, 0.36)	31	0.40 (0.45, 0.16)	26	0.60 (0.67, 0.26)
20: 25-Feb	38	0.64 (0.68, 0.38)	27	0.81 (0.88, 0.67)	32	0.84 (0.88, 0.55)	40	0.47 (0.52, 0.19)	29	0.68 (0.73, 0.34)
21: 04-Mar	40	0.75 (0.78, 0.53)	16	0.86 (0.93, 0.72)	23	0.91 (0.93, 0.84)	24	0.51 (0.57, 0.21)	31	0.75 (0.81, 0.41)
22: 11-Mar	30	0.83 (0.86, 0.63)	9	0.89 (0.93, 0.79)	15	0.96 (0.97, 0.94)	35	0.57 (0.63, 0.26)	23	0.81 (0.85, 0.55)
23: 18-Mar	27	0.90 (0.93, 0.70)	14	0.93 (0.95, 0.88)	7	0.98 (0.98, 0.97)	34	0.60 (0.67, 0.31)	27	0.90 (0.91, 0.69)
24: 25-Mar	18	0.94 (0.97, 0.76)	8	0.96 (0.96, 0.93)	4	0.99 (1.00, 1.00)	15	0.63 (0.69, 0.31)	11	0.92 (0.93, 0.73)
25: 01-Apr	14	0.95 (0.97, 0.86)	3	0.97 (0.97, 0.99)	0	0.99 (1.00, 1.00)	22	0.66 (0.73, 0.32)	12	0.94 (0.95, 0.75)
26: 08-Apr	9	0.97 (0.98, 0.93)	4	0.98 (0.97, 0.99)	1	1.00 (1.00, 1.00)	8	0.67 (0.74, 0.32)	9	0.96 (0.96, 0.86)
27: 15-Apr	8	0.98 (0.98, 0.98)	3	0.99 (0.98, 0.99)	1	1.00 (1.00, 1.00)	43	0.72 (0.79, 0.36)	2	0.97 (0.96, 0.87)
28: 22-Apr	2	0.98 (0.98, 0.98)	1	0.99 (0.99, 0.99)	0	1.00 (1.00, 1.00)	1	0.73 (0.79, 0.37)	0	0.97 (0.96, 0.87)
29: 29-Apr	3	0.99 (0.99, 0.99)	1	1.00 (1.00, 0.99)	0	1.00 (1.00, 1.00)	29	0.75 (0.81, 0.39)	8	0.99 (0.97, 0.95)
30: 06-May	2	0.99 (0.99, 1.00)	1	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	35	0.78 (0.83, 0.42)	3	0.99 (0.98, 0.95)
31: 13-May	1	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	0.78 (0.83, 0.42)	2	1.00 (0.98, 0.97)
32: 20-May	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	21	0.80 (0.85, 0.45)	2	1.00 (0.98, 0.98)
33: 27-May	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	35	0.87 (0.89, 0.67)	0	1.00 (0.98, 0.98)
Postseason: 01-Jun	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)	42	1.00 (1.00, 1.00)	0	1.00 (1.00, 1.00)

Source: ADF&G fish tickets and NMFS RAM IFQ accounting database via eLandings.

BSS fishery is open by regulation from October 15 to May 31. Running share of sold pounds landed shows running share of a) combined IFQ and CDQ sold pounds, including catcher/processor landings ("All"); b) sold pounds landed on catcher vessel owner A-type IFQ permits (CVOA); and c) sold pounds landed on catcher vessel owner B-type IFQ permits or catcher vessel crew type IFQ permits (CVOB + CVC). CVOA IFQ permits are subject to matching to processing quota, whereas CVC and CVOB may be landed at any processor.

[a] 2011/2012 season extended to June 15th due to sea ice coverage persisting into mid-May.

Table 53: Fishing Effort (Pot Lifts, CPUE, and RPUE) by Season, CR Program Fisheries

			Pot lifts		CPUE (# legal crab)		RPUE ($)	
	Season	Vessels	Total, 1000	Mean (sd) per vessel, 1000	Weighted mean	Mean (sd) CPUE per vessel	Weighted mean	Mean RPUE per vessel (sd)
BBR	1998	274	144.9	0.5 (0.2)	15.2	15.3 (6.7)	$419	$423 (185)
	1999	257	150	0.6 (0.2)	12.5	12.6 (6.1)	$725	$727 (360)
	2000	244	103.4	0.4 (0.1)	12	11.9 (5.2)	$538	$531 (233)
	2001	230	66.2	0.3 (0.1)	19.2	19.1 (10)	$897	$894 (475)
	2002	241	72.2	0.3 (0.1)	20.4	20.6 (7.1)	$1,222	$1235 (420)
	2003	250	134.1	0.5 (0.2)	18.4	18.2 (9.5)	$862	$847 (441)
	2004	251	96.3	0.4 (0.1)	22.9	22.9 (9)	$1,023	$1020 (390)
	2005-2006	89	114.6	1.3 (1)	23.7	28 (10.5)	$905	$1064 (402)
	2006-2007	81	71.7	0.9 (0.5)	34	33.3 (9.9)	$953	$934 (285)
	2007-2008	74	113.1	1.5 (0.9)	27.5	27.9 (7.2)	$918	$931 (244)
	2008-2009	78	139.7	1.8 (1.1)	21.7	23.7 (7.1)	$813	$888 (276)
	2009-2010	70	118.4	1.7 (0.8)	21.2	22.3 (5.9)	$701	$734 (194)
	2010-2011	65	131.4	2 (1)	18.1	18.6 (5.1)	$871	$896 (251)
	2011-2012	62	45.1	0.7 (0.3)	28.2	27.6 (7.3)	$1,868	$1832 (484)
BSS	1999	241	945.4	3.9 (1.5)	158.3	155.4 (42)	$301	$297 (75)
	2000	231	181.5	0.8 (0.3)	136.2	138.5 (59.9)	$486	$497 (222)
	2001	207	191	0.9 (0.5)	95.6	91.6 (48)	$303	$290 (139)
	2002	191	325.6	1.7 (0.8)	75.6	76.2 (35.2)	$203	$205 (95)
	2003	190	153.7	0.8 (0.4)	146.9	151.6 (63)	$483	$501 (198)
	2004	189	123.4	0.7 (0.4)	149.6	156 (60.3)	$549	$573 (215)
	2005	168	72.9	0.4 (0.1)	242.8	246.2 (87.9)	$785	$798 (300)
	2005-2006	78	119.5	1.5 (1.1)	203.4	212.5 (71.8)	$430	$447 (144)
	2006-2007	69	85.3	1.2 (0.8)	343	349.1 (74.7)	$788	$813 (188)
	2007-2008	78	141.2	1.8 (1)	353.2	356.3 (78.8)	$848	$855 (186)
	2008-2009	77	163.3	2.1 (1.3)	279.1	284.7 (70.5)	$569	$580 (148)
	2009-2010	69	136.8	2 (1.1)	255	255.8 (55.6)	$478	$481 (98)
	2010-2011	68	147.2	2.2 (1.1)	254.9	255.3 (51.4)	$927	$930 (185)
	2011-2012	72	270	3.7 (1.8)	222.7	224.7 (63.4)	$619	$623 (167)
BST	2005-2006	42	27.8	0.7 (0.5)	15.7	20.6 (18.8)	$61	$79 (73)
	2006-2007	52	49.6	1 (0.8)	18.4	16.9 (15.3)	$80	$74 (67)
	2007-2008	40	52	1.3 (1.3)	17.7	18.6 (10.1)	$77	$80 (44)
	2008-2009	49	61.9	1.3 (1.3)	13.3	14.8 (15.7)	$57	$63 (68)
	2009-2010	41	40.5	1 (0.7)	11.8	38.8 (30.9)	$60	$194 (154)
	2011-2012	56	64.2	1.1 (0.7)	0	()	$0	$0 ()
EAG	1998	14	83.4	6 (2.3)	8.7	8.1 (4.3)	$113	$107 (53)
	1999	15	79	5.3 (2.2)	8.8	9 (4.6)	$177	$182 (95)
	2000	15	71.5	4.8 (1.5)	9.7	9.7 (4.4)	$218	$217 (104)
	2001	19	62.6	3.3 (1.1)	11.5	11.2 (5.6)	$243	$239 (114)
	2002	19	52	2.7 (0.7)	12.1	12.2 (4.9)	$278	$277 (109)
	2003	18	58.9	3.3 (0.7)	10.6	10.6 (2.9)	$260	$256 (71)
	2004	19	34.8	1.8 (0.4)	18	18.6 (7.1)	$363	$374 (133)
	2005-2006	7	24.6	3.5 (1.9)	25.2	25.3 (7.9)	$400	$380 (143)
	2006-2007	6	26.2	4.4 (3.5)	24.5	23.7 (5.4)	$262	$235 (61)
	2007-2008	4	22.7	5.7 (--)	27.8	29.1 (--)	$347	$321 (--)
	2008-2009	3	--	--	--	--	--	--
	2009-2010	3	--	--	--	--	--	--
	2010-2011	3	--	--	--	--	--	--
	2011-2012	3	--	--	--	--	--	--

Table continues on next page.

Table 53- continued

			Pot lifts		CPUE (# legal crab)		RPUE ($)	
	Season	Vessels	Total, 1000	Mean per vessel, 1000 (sd)	Weighted mean	Mean CPUE per vessel (sd)	Weighted mean	Mean RPUE per vessel (sd)
PIK	1998	58	46	0.8 (0.3)	3	3 (1.7)	$80	$82 (46)
SMB	1998	132	91.7	0.7 (0.3)	6.9	7.1 (2)	$97	$99 (27)
	2009-2010	7	10.6	1.5 (1)	9.6	9.3 (1.4)	$107	$103 (16)
	2010-2011	11	29.3	2.7 (1.2)	10.1	9.7 (2)	$224	$215 (43)
	2011-2012	18	48.6	2.7 (1.1)	8.9	8.5 (2.1)	$179	$173 (42)
WAG	1998-1999	3	--	--	--	--	--	--
	1999-2000	15	108.7	7.2 (8)	6.1	4.1 (2.7)	$119	$82 (51)
	2000-2001	12	99.5	8.3 (6.9)	6.8	4.7 (3.3)	$134	$95 (62)
	2001-2002	9	105.5	11.7 (9.4)	6.4	5.8 (1.7)	$126	$116 (30)
	2002-2003	6	79	13.2 (10.5)	8.3	6.4 (3.4)	$170	$131 (65)
	2003-2004	6	66.2	11 (7.8)	10	8.5 (3.3)	$201	$173 (65)
	2004-2005	6	56.8	9.5 (7.1)	11.9	9.3 (4.4)	$204	$161 (74)
	2005-2006	3	--	--	--	--	--	--
	2006-2007	4	26.7	6.7 (--)	19.4	18.3 (--)	$154	$151 (--)
	2007-2008	3	--	--	--	--	--	--
	2008-2009	3	--	--	--	--	--	--
	2009-2010	3	--	--	--	--	--	--
	2010-2011	3	--	--	--	--	--	--
	2011-2012	3	--	--	--	--	--	--
WAI	1998-1999	1	--	--	--	--	--	--
	2002-2003	3	--	--	--	--	--	--
	2003-2004	30	5.8	0.2 (0.1)	10.3	10.2 (5.4)	$620	$612 (329)

Source: ADF&G fish tickets, eLandings.

CPUE = number of legal crab per potlift. RPUE = ex-vessel value of commercially sold crab per potlift. Dollars are inflation-adjusted to 2012 equivalent value using the Producer Price Index for unprocessed and packaged fish.

Includes catcher/processor harvest and effort.

Table 54: Snow and Red King Crab Exports and Imports

	King crab						Snow crab					
	Exports		Imports		Net exports		Exports		Imports		Net exports	
Year	Metric tons (1000)	Value ($million)	Metric tons (1000)	Value ($million)	Metric tons (1000)	Value ($million)	Metric tons (1000)	Value ($million)	Metric tons (1000)	Value ($million)	Metric tons (1000)	Value ($million)
1991	3.85	$103.20	0.30	$7.68	3.55	$95.52	32.20	$295.16	0.74	$10.22	31.46	$284.94
1992	3.70	$109.94	2.19	$40.89	1.51	$69.05	61.61	$556.44	0.88	$8.66	60.73	$547.78
1993	5.96	$158.35	1.12	$23.68	4.84	$134.67	45.56	$493.71	1.33	$15.71	44.23	$478.00
1994	3.62	$85.28	2.60	$60.77	1.02	$24.51	31.12	$455.18	2.86	$38.24	28.26	$416.94
1995	2.85	$58.66	4.01	$76.03	-1.16	-$17.37	12.26	$208.23	2.26	$31.22	10.00	$177.01
1996	4.46	$98.09	6.27	$111.22	-1.81	-$13.13	9.53	$121.21	3.38	$38.33	6.15	$82.88
1997	2.80	$45.59	9.77	$178.01	-6.97	-$132.42	10.17	$86.67	6.90	$58.26	3.27	$28.41
1998	3.10	$35.73	11.82	$191.04	-8.72	-$155.31	11.99	$84.14	12.26	$98.00	-0.27	-$13.86
1999	2.73	$38.51	11.49	$204.77	-8.76	-$166.26	15.62	$139.33	24.68	$250.45	-9.06	-$111.12
2000	3.05	$65.84	10.05	$210.34	-7.00	-$144.50	4.75	$59.95	28.61	$348.28	-23.86	-$288.33
2001	1.83	$49.77	9.29	$208.02	-7.46	-$158.25	3.09	$37.60	42.18	$439.03	-39.09	-$401.43
2002	2.28	$50.21	10.42	$278.79	-8.14	-$228.58	3.36	$39.67	44.41	$469.15	-41.05	-$429.48
2003	3.94	$73.78	9.96	$237.77	-6.02	-$163.99	3.92	$55.52	51.60	$640.24	-47.68	-$584.72
2004	3.25	$54.01	10.55	$207.72	-7.30	-$153.71	4.09	$54.97	49.10	$584.16	-45.01	-$529.19
2005	3.90	$69.20	18.39	$321.21	-14.49	-$252.01	3.42	$38.48	45.97	$417.48	-42.55	-$379.00
2006	4.32	$69.49	28.07	$402.96	-23.75	-$333.47	4.79	$48.87	46.28	$365.27	-41.49	-$316.40
2007	3.31	$57.53	30.35	$430.07	-27.04	-$372.54	2.12	$17.88	47.98	$475.64	-45.86	-$457.76
2008	4.33	$77.49	15.92	$296.42	-11.59	-$218.93	5.55	$49.89	42.00	$413.64	-36.45	-$363.75
2009	3.36	$75.64	15.83	$279.04	-12.47	-$203.40	5.48	$51.38	51.65	$435.86	-46.17	-$384.48
2010	3.62	$85.66	10.06	$187.99	-6.44	-$102.33	4.96	$43.63	43.57	$394.35	-38.61	-$350.72
2011	2.66	$63.34	8.50	$170.68	-5.84	-$107.34	8.48	$90.55	41.04	$502.00	-32.56	-$411.45
2012	1.98	$50.51	9.41	$164.27	-7.43	-$113.76	12.72	$128.45	41.68	$433.67	-28.96	-$305.22

Source: U.S. Foreign Census Bureau Foreign Trade Division, via NMFS Fisheries Statistics Division, U.S. Foreign Trade Database. Data available at http://www.st.nmfs.noaa.gov/st1/trade/.

Imports and exports shown for product codes 306144010 (frozen king crab) and 306144020 (frozen snow crab) from the Tariff Schedule for the United States, Annotated (TSUSA).

Table 55: IFQ Fisheries Catch Share Performance Metrics

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	97.74	56.55	54.69	85.25	80.28	65.28	69.03	94.56	73.91
Commercial landings (million lbs)	96.96	54.99	52.62	81.17	77.08	63.81	68.05	93.35	73.15
Landed deadloss (millions lbs)	1.08	0.46	0.56	0.70	0.63	0.70	0.53	0.69	0.60
Percent TAC/GHL utilized[c]	104.5%	98.1%	97.3%	96.1%	96.8%	98.9%	99.4%	99.5%	99.8%
Decreased deadloss from last season[d]	n/a	YES	NO	NO	YES	NO	YES	NO	YES
TAC or GHL exceeded[e]	YES	NO	NO	NO	NO	NO	NO	NO	NO
Effort									
Entities holding harvest quota share[f]	491	491	486	470	478	481	489	498	502
Active vessels[g]	262	101	91	87	88	78	78	78	81
Season length (days)[l]									
Bristol Bay red king	4.67	93	93	93	93	93	93	93	93
Bering Sea snow	32.67	229	229	230	229	229	229	245	229
Eastern Aleutian golden king	36.67	274	274	275	274	274	274	275	274
Western Aleutian golden king	245	274	274	275	274	274	274	275	274
Bering Sea Tanner, East	F/C	F/C	168	169	168	168	F/C	F/C	F/C
Bering Sea Tanner, West	F/C	168	168	169	168	F/C	F/C	F/C	F/C
St. Matthew Island blue king[m]	12	F/C	F/C	F/C	F/C	110	110	110	110
Pribilof Islands red and blue king[m]	14	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C
Western Aleutian red king[m]	273	F/C	F/C	F/C	F/C	F/C	F/C	F/C	F/C
Trips[h]	n/d	594	426	640	623	516	552	754	540
Revenues ($million)[i]									
Total revenue on IFQ trips	n/d	$173.76	$154.25	$239.77	$225.81	$163.49	$267.52	$297.32	n/d
IFQ landings	$224.60	$156.49	$143.93	$228.30	$215.26	$154.86	$255.53	$283.71	$209.50
Non-IFQ landings on IFQ trips[j]	n/d	$17.27	$10.32	$11.47	$10.55	$8.63	$11.99	$13.61	n/d
IFQ revenue / active vessel	$0.84	$1.55	$1.58	$2.62	$2.45	$1.99	$3.28	$3.64	$2.59
IFQ revenue / trip	n/d	$0.26	$0.34	$0.36	$0.35	$0.30	$0.46	$0.38	$0.39
Price[i]									
Weighted price/lb, IFQ crab	$3.05	$2.85	$2.74	$2.81	$2.79	$2.43	$3.76	$3.04	$2.86
Cost recovery[i]									
Fees collected ($million)[k]	n/a	$4.85	$4.47	$6.93	$2.06	$0.00	$7.05	$3.35	$0.00

Source: NMFS AKR RAM, ADF&G fish tickets, CFEC ex-vessel pricing, NMFS AFSC BSAI Crab Economic Data, ADF&G Westward Region Shellfish Management Report 2010/2011. 2012/2013 revenue and prices are preliminary as of December 2013. Dollars are inflation-adjusted to 2012 equivalent value using the Producer Price Index for unprocessed and packaged fish.

[a] Baseline seasons are 1998/1999, 2001/2002, and 2004/2005. Except where otherwise noted, baseline values reflect the per-season mean for activity in the open access/LLP fisheries (excludes fishing activity on CDQ permits).

[b] July 1 through June 30 crab fishing season.

[c] GHL applies to baseline years; TAC applies to 2005/2006 and later seasons. Baseline percentage greater than 100% indicates GHL exceeded

[d] Weight of retained catch discarded at landing as deadloss and, following crab rationalization, debited against IFQ; at-sea discard, including low-grade catch of target crab species, bycatch of female and sublegal males of targeted crab stocks, and/or bycatch of other fish and shellfish species, is not counted against IFQ.

[e] For baseline, indicates if GHL was exceeded in any fishery in any one season.

[f] Count of unique holders of harvest QS in one or more IFQ crab fisheries at the beginning of each fishing year. Baseline value represents the number of entities receiving initial quota share and is equal to the count for the first catch share program year.

[g] Count of crab catcher vessels and catcher/processor vessels with any commercial landings (sold crab) of IFQ crab or, during baseline years, open access/LLP fishery crab.

[h] Count of unique vessel trips resulting in one or more landings of IFQ crab. Trip identification unavailable for baseline years.

[i] All prices and revenues adjusted to 2012 dollars.

[j] Estimated ex-vessel value of commercial landings of non-IFQ crab landed jointly with IFQ or, during baseline years, open access crab. This primarily represents BSAI crab landed on CDQ and ACA permits. Trip identification unavailable for baseline years. Data not yet available for 2011/2012 season. To avoid double counting of non-IFQ revenue in reporting by individual crab fishery, non-IFQ revenue is assigned to a single target crab fishery per trip, determined as the fishery accounting for the greatest volume of sold crab by weight at the landing.

[k] Estimated cost recovery fee value attributable to IFQ landings in all crab CSP fisheries. Cost recovery fees are collected jointly for crab IFQ as well as CDQ and ACA community-based allocation programs; values reported are the amount apportionable to the IFQ program as estimated from pro-ration of cost recovery fees by relative volume of landings in respective management programs. Note that year-to-year variance in fees collected is due to regulatory formula for pre-season determination of fee percentage to assess on ex-vessel revenues based on ex-vessel value and program management costs for the prior fishery year. The formula results in realized surpluses in years where fees paid by program participants are in excess of fee amount billed. In 2009, no cost recovery fees were billed due to fee percent set to 0 for the year; in 2008 fee collection was lower than billed amount due to bankruptcy of a processing sector entity.

[l] "F/C" indicates fishery closure.

[m] St. Matthew Island blue king, Pribilof red and blue king, and Western Aleutian red king crab fisheries were open only during the 1998/1998 season in the baseline period.

[n] Bering Sea Tanner crab fishery closed in all baseline seasons. Eastern and Western areas were managed as a single fishery in 2005/2006 and as separate fisheries in subsequent seasons. The Eastern area was closed by ADF&G in the 2005/2006 season as an in-season management measure.

Table 55a: IFQ Crab Fisheries Performance Metrics, Bristol Bay Red King Crab

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	12.23	16.50	13.97	18.33	18.33	14.41	13.36	7.05	7.07
Commercial landings (million lbs)	11.92	16.39	13.78	18.16	18.11	14.22	13.22	7.00	7.02
Landed deadloss (millions lbs)	0.09	0.08	0.10	0.13	0.16	0.11	0.10	0.03	0.03
Percent TAC/GHL utilized[c]	102.4%	99.9%	99.4%	100.0%	99.8%	99.6%	100.0%	100.0%	100.0%
Decreased deadloss from last season[d]	n/a	YES	NO	NO	NO	YES	YES	YES	YES
TAC or GHL exceeded[e]	YES	NO	NO	NO	NO	NO	NO	NO	NO
Effort									
Entities holding harvest quota share[f]	426	426	411	391	389	382	386	385	384
Active vessels[g]	252	89	81	74	77	70	65	62	64
Season length (days)[l]	4.67	93	93	93	93	93	93	93	93
Trips[h]	n/d	235	153	192	207	182	188	112	94
Revenues ($million)[i]									
Total revenue on IFQ trips	n/d	$104.86	$69.77	$103.46	$110.21	$81.15	$109.14	$80.79	n/d
IFQ landings	$68.66	$94.36	$64.16	$96.91	$104.75	$76.56	$103.70	$73.30	$56.58
Non-IFQ landings on IFQ trips[j]	n/d	$10.50	$5.61	$6.55	$5.46	$4.59	$5.44	$7.49	n/d
IFQ revenue / active vessel	$0.27	$1.06	$0.79	$1.31	$1.36	$1.09	$1.60	$1.18	$0.88
IFQ revenue / trip	n/d	$0.40	$0.42	$0.50	$0.51	$0.42	$0.55	$0.65	$0.60
Price[i]									
Weighted price/lb, IFQ crab	$5.99	$5.76	$4.66	$5.34	$5.78	$5.38	$7.84	$10.46	$8.06

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.

Table 55b: IFQ Crab Fisheries Performance Metrics, Bering Sea Snow Crab

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	78.03	33.47	32.91	56.73	52.70	43.22	48.85	80.00	59.72
Commercial landings (million lbs)	78.38	32.93	32.32	56.23	52.29	42.71	48.46	79.36	59.19
Landed deadloss (millions lbs)	0.88	0.32	0.38	0.50	0.40	0.50	0.31	0.58	0.43
Percent TAC/GHL utilized[c]	108.0%	99.4%	99.4%	100.0%	100.0%	100.0%	99.8%	99.9%	99.8%
Decreased deadloss from last season[d]	n/a	YES	NO	NO	YES	NO	YES	NO	YES
TAC or GHL exceeded[e]	YES	NO	NO	NO	NO	NO	NO	NO	NO
Effort									
Entities holding harvest quota share[f]	389	389	375	356	362	361	361	369	369
Active vessels[g]	200	78	70	78	77	68	69	71	70
Season length (days)[l]	32.67	229	229	230	229	229	229	245	229
Trips[h]	n/d	282	192	350	333	250	280	540	357
Revenues ($million)[i]									
Total revenue on IFQ trips	n/d	$50.09	$67.94	$116.92	$91.03	$60.78	$128.54	$179.44	n/d
IFQ landings	$128.23	$45.13	$64.21	$113.37	$87.91	$58.19	$123.98	$176.03	$124.76
Non-IFQ landings on IFQ trips[j]	n/d	$4.96	$3.73	$3.55	$3.12	$2.59	$4.56	$3.41	n/d
IFQ revenue / active vessel	$0.59	$0.58	$0.92	$1.45	$1.14	$0.86	$1.80	$2.48	$1.78
IFQ revenue / trip	n/d	$0.16	$0.33	$0.32	$0.26	$0.23	$0.44	$0.33	$0.35
Price[i]									
Weighted price/lb, IFQ crab	$1.96	$1.37	$1.99	$2.02	$1.68	$1.36	$2.56	$2.22	$2.11

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.

Table 55c: IFQ Crab Fisheries Performance Metrics, Bering Sea Tanner Crab – East

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	F/C	F/C	1.69	3.10	2.49	1.22	F/C	F/C	F/C
Commercial landings (million lbs)			1.26	1.42	1.54	1.18			
Landed deadloss (millions lbs)			0.01	0.02	0.01	0.01			
Percent TAC/GHL utilized[c]			75%	46%	63%	98%			
Decreased deadloss from last season[d]			n/a	NO	YES	YES			
TAC or GHL exceeded[e]			NO	NO	NO	NO			
Effort									
Entities holding harvest quota share[f]	426	426	412	389	388	376	383	380	381
Active vessels[g]			35	20	17	13			
Season length (days)[l]			168	169	168	168			
Trips[h]			48	55	45	26			
Revenues ($million)[i]									
Total revenue on IFQ trips			--	--	--	$2.76			
IFQ landings			$2.62	$2.98	$3.32	$2.47			
Non-IFQ landings on IFQ trips[j]			--	--	--	$0.29			
IFQ revenue / active vessel			$0.07	$0.15	$0.20	$0.19			
IFQ revenue / trip			$0.05	$0.05	$0.07	$0.09			
Price[i]									
Weighted price/lb, IFQ crab			$2.09	$2.10	$2.15	$2.09			

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.

Bering Sea Tanner crab managed as a single fishery in 2005/2006 and as Eastern and Western fisheries in subsequent seasons. Eastern area closed as an in-season management measure in 2005/2006. Count of quota holding entities in the baseline, 2005/2006 and 2006/2007 seasons represent holders of Bering Sea Tanner quota; subsequent seasons show count of holders of Eastern or Western quota.

Effort and revenue metrics are inclusive of vessels with any landings of sold crab from the fishery. Given that a large proportion of Bering Sea Tanner crab is landed as bycatch in other fisheries, metrics on participating vessels, trips, and IFQ revenue per trip shown here are not representative of effort and revenue on vessels and trips actually targeting this fishery.

Table 55d: IFQ Crab Fisheries Performance Metrics, Bering Sea Tanner Crab – West

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	F/C	1.46	0.98	1.96	1.38	F/C	F/C	F/C	F/C
Commercial landings (million lbs)		0.77	0.62	0.46	0.11				
Landed deadloss (millions lbs)		0.01	0.02	0.00	0.00				
Percent TAC/GHL utilized[c]		54%	64%	24%	8%				
Decreased deadloss from last season[d]		n/a	NO	YES	YES				
TAC or GHL exceeded[e]		NO	NO	NO	NO				
Effort									
Entities holding harvest quota share[f]	426	426	412	389	389	377	384	381	382
Active vessels[g]		33	20	18	9				
Season length (days)[l]		168	168	169	168				
Trips[h]		60	32	28	13				
Revenues ($million)[i]									
Total revenue on IFQ trips		--	--	$0.96	$0.23				
IFQ landings		$1.40	$1.27	$0.96	$0.23				
Non-IFQ landings on IFQ trips[j]		--	--	$0.00	$0.00				
IFQ revenue / active vessel		$0.04	$0.06	$0.05	$0.03				
IFQ revenue / trip		$0.02	$0.04	$0.03	$0.02				
Price[i]									
Weighted price/lb, IFQ crab		$1.81	$2.07	$2.09	$2.20				

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.

Bering Sea Tanner crab managed as a single fishery in 2005/2006 and as Eastern and Western fisheries in subsequent seasons. Eastern area closed as an in-season management measure in 2005/2006. Count of quota holding entities in the baseline, 2005/2006 and 2006/2007 seasons represent holders of Bering Sea Tanner quota; subsequent seasons show count of holders of Eastern or Western quota.

Effort and revenue metrics are inclusive of vessels with any landings of sold crab from the fishery. Given that a large proportion of Bering Sea Tanner crab is landed as bycatch in other fisheries, metrics on participating vessels, trips, and IFQ revenue per trip shown here are not representative of effort and revenue on vessels and trips actually targeting this fishery.

Table 55e: IFQ Crab Fisheries Performance Metrics, Eastern Aleutian Golden King Crab

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	3.00	2.70	2.70	2.70	2.84	2.84	2.84	2.84	2.98
Commercial landings (million lbs)	3.05	2.55	2.66	2.67	2.81	--	--	--	--
Landed deadloss (millions lbs)	0.06	0.02	0.03	0.02	0.02	--	--	--	--
Percent TAC/GHL utilized[c]	104%	95%	100%	100%	100%	--	--	--	--
Decreased deadloss from last season[d]	n/a	YES	NO	YES	NO	NO	NO	YES	NO
TAC or GHL exceeded[e]	YES	NO	NO	NO	NO	NO	NO	NO	NO
Effort									
Entities holding harvest quota share[f]	28	28	27	26	26	24	28	27	27
Active vessels[g]	17	7	6	4	3	3	3	3	3
Season length (days)[l]	36.67	274	274	275	274	274	274	275	274
Trips[h]	n/d	32	23	27	21	22	21	20	23
Revenues ($million)[i]									
Total revenue on IFQ trips	n/d	--	--	--	--	--	--	--	n/d
IFQ landings	$12.79	$8.49	$6.62	$7.04	$11.19	--	--	--	--
Non-IFQ landings on IFQ trips[j]	n/d	--	--	--	--	--	--	--	n/d
IFQ revenue / active vessel	$0.73	$1.21	$1.10	$1.76	$3.73	--	--	--	--
IFQ revenue / trip	n/d	$0.27	$0.29	$0.26	$0.53	--	--	--	--
Price[i]									
Weighted price/lb, IFQ crab	$4.21	$3.34	$2.49	$2.64	$3.99	--	--	--	--

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.

Table 55f: IFQ Crab Fisheries Performance Metrics, Western Aleutian Golden King Crab

	Baseline[a, b, m]	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Catch and Landings									
IFQ quota allocated (million lbs)	2.70	2.43	2.43	2.43	2.55	2.55	2.55	2.55	2.68
Commercial landings (million lbs)	2.67	2.35	1.98	2.23	2.23	--	--	--	--
Landed deadloss (millions lbs)	0.04	0.03	0.02	0.02	0.02	--	--	--	--
Percent TAC/GHL utilized[c]	101%	98%	82%	93%	88%	--	--	--	--
Decreased deadloss from last season[d]	n/a	YES	YES	NO	YES	NO	YES	NO	NO
TAC or GHL exceeded[e]	YES	NO	NO	NO	NO	NO	NO	NO	NO
Effort									
Entities holding harvest quota share[f]	24	24	24	25	24	23	23	23	22
Active vessels[g]	6	3	3	3	3	3	3	3	4
Season length (days)[l]	245	274	274	275	274	274	274	275	274
Trips[h]	n/d	41	27	28	30	29	28	27	24
Revenues ($million)[i]									
Total revenue on IFQ trips	n/d	--	--	--	--	--	--	--	n/d
IFQ landings	$12.77	$7.11	$5.04	$7.02	$7.86	--	--	--	--
Non-IFQ landings on IFQ trips[j]	n/d	--	--	--	--	--	--	--	n/d
IFQ revenue / active vessel	$1.75	$2.37	$1.68	$2.34	$2.62	--	--	--	--
IFQ revenue / trip	n/d	$0.17	$0.19	$0.25	$0.26	--	--	--	--
Price[i]									
Weighted price/lb, IFQ crab	$4.78	$3.02	$2.54	$3.15	$3.52	--	--	--	--

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013.To preserve confidentiality of 1998/1999 data, baseline values for selected landings metrics (commercial landings, landed deadloss, and utilization) and all revenue and price metrics represent the average over the 2001/2002 and 2004/2005 seasons only.

Table 55g: IFQ Crab Fisheries Catch Share Performance Metrics, St. Matthew Island Blue King Crab

	Baseline[a, b, m]	2005 - 2008	09/10	10/11	11/12	12/13
Catch and Landings						
IFQ quota allocated (million lbs)	4.00	F/C	1.05	1.44	2.12	1.47
Commercial landings (million lbs)	2.85		--	--	1.67	1.43
Landed deadloss (millions lbs)	0.02		--	--	0.03	0.02
Percent TAC/GHL utilized[c]	72%		--		80%	99%
Decreased deadloss from last season[d]	n/a		n/a	YES	NO	YES
TAC or GHL exceeded[e]	NO		NO	NO	NO	NO
Effort						
Entities holding harvest quota share[f]	210	210	207	213	212	209
Active vessels[g]	132		7	11	18	17
Season length (days)[l]	12		110	110	110	110
Trips[h]	n/d		15	35	55	42
Revenues ($million)[i]						
Total revenue on IFQ trips	n/d		--	--	--	n/d
IFQ landings	$8.52		--	--	$9.38	$6.13
Non-IFQ landings on IFQ trips[j]	n/d		$0.00	--	--	n/d
IFQ revenue / active vessel	$0.07		--	--	$0.52	$0.36
IFQ revenue / trip	n/d		--	--	$0.17	$0.15
Price[i]						
Weighted price/lb, IFQ crab	$2.99		--	--	$5.62	$4.28

See Table 46 for data sources and footnotes. 2012/2013 revenue and prices are preliminary as of December 2013. St. Matthew Island blue king crab fishery open only during the 1998/1998 season in the baseline period. Fishery closed from 2005/2006 to 2008/2009 seasons.

Table 55h: IFQ Crab Fisheries Catch Share Performance Metrics, Pribilof Islands Red and Blue King Crab, Western Aleutian Red King Crab

	Pribilof Islands red and blue king crab		Western Aleutian red king crab	
	Baseline[a, b, m]	2005 - 2012	Baseline[a, b, m]	2005 - 2012
Catch and Landings				
IFQ quota allocated (million lbs)	1.30	FC	0.02	FC
Commercial landings (million lbs)	1.00		--	
Landed deadloss (millions lbs)	0.03		--	
Percent TAC/GHL utilized[c]	79.0%		--	
Decreased deadloss from last season[d]	n/a		n/a	
TAC or GHL exceeded[e]	NO		NO	
Effort				
Entities holding harvest quota share[f]	148		34	
Active vessels[g]	57		1	
Season length (days)[l]	14		273	
Trips[h]	n/d		n/d	
Revenues ($million)[i]				
Total revenue on IFQ trips	n/d		n/d	
IFQ landings	$3.77		n/d	
Non-IFQ landings on IFQ trips[j]	n/d		n/d	
IFQ revenue / active vessel	$0.07		n/d	
IFQ revenue / trip	n/d		n/d	
Price[i]				
Weighted price/lb, IFQ crab	$3.79		n/d	

See Table 46 for data sources and footnotes. Both PIK and WAI fisheries were open only during the 1998/1998 season in the baseline period.

Table 56: 2013 Wholesale Price Forecasts and Estimated Year-To-Date Production - AIG, BBR, and BSS Fisheries

						Estimated Production Values, 2013 To-Date				
	WS Price Forecast ±90%CI[a]	**Price Ratio[b]**	**PRR[c]**	**Landed volume, 2013 YTD[d]**		**Price ±90%CI**	**Ex-vessel Gross Revenue ±90%CI**	**Finished volume**		**Wholesale Gross Revenue ±90%CI**
Fishery	$/lb			1000 *mt*	million lbs	$/lb	$million	1000 *mt*	million lbs	$million
AIG	$10.24 ±1.07	0.46	0.63	0.62	1.36	$4.72 ±0.49	$6.43 ±0.67	0.39	0.86	$8.86 ±0.93
BSS	$5.48 ±0.3	0.43	0.66	29.6 0	65.25	$2.36 ±0.13	$153.98 ±8.48	19.39	42.74	$234.22 ±12.82
BBR	$18.38 ±2.48	0.54	0.68			$9.97 ±1.35				

Source: ADF&G Commercial Operator's Annual Report, eLandings, NMFS AFSC BSAI Crab Economic Data Report (EDR) database.

[a] See Appendix A for forecast methods and model estimation results.

[b] Calculated as arithmetic mean of $(p_e/p_w)_{t=2007\text{-}2011}$, where p_e is average ex-vessel price and p_w is average wholesale price calculated from 2007-2011 crab EDR data.

[c] Calculated as arithmetic mean of $(v_e/v_w)_{t=2007\text{-}2011}$, where v_e is total volume of commercial ex-vessel landings and v_w total finished crab product volume calculated from 2007-2011 crab EDR data.

[d] Landings to-date for AIG and BSS represent catch of 2012-2013 season allocations for these fisheries landed between 1/1/13 and 5/31/13; does not include catch of 2013/14 season allocations; BSS landings represent the total expected volume for 2013.

[e] Confidence intervals for derived price and revenue estimates are propagated solely on the basis of wholesale price forecast model standard errors and do not reflect distributional information for other variables used in the calculation of estimated values.

Table 57: Harvesting and Processing Participants Submitting Edrs

	Harvest operations		Processing operations			Hired processing only	
Year	Catcher vessel	Catcher/processor	Shoreside processor	Floating processor	Catcher/processor	Shoreside processor	Floating processor
1998	8	218	13	12	8	0	0
2001	7	219	16	5	7	1	1
2004	10	237	14	5	10	0	1
2005	8	166	13	4	8	1	0
2006	5	97	11	2	5	0	1
2007	5	82	11	3	5	1	0
2008	5	91	11	2	5	3	0
2009	5	84	12	2	5	3	0
2010	3	76	12	3	3	2	1
2011	3	74	16	2	3	1	0

Source: NOAA Fisheries, Alaska Fisheries Science Center. BSAI Crab Economic Data

For harvesters, participation in the rationalized crab fisheries is determined from harvest activity, landing revenues, and labor in crab fisheries, as reported in the EDR. For processors, participation is determined from processing activity, raw pounds input to production, and finished production in crab fisheries, as reported in the EDR. "Hired processing only" refers to processing operations that had all of their purchased BSAI crab custom-processed by another processor and that submitted voluntary EDRs.

Table 58: Harvesting and Processing Participants Submitting Edrs, by Sector and Fishery

		Harvest operations			Processing operations			
Fishery	Year	Catcher vessel	Catcher/processor	Total harvesting operations	Shoreside processor	Floating processor	Catcher/ processor	Total processing operations
AIG	1998	2	13	15	4	0	2	6
	2001	1	19	20	5	0	1	6
	2004	1	20	21	4	0	1	5
	2005	2	10	12	4	0	2	6
	2006	1	6	7	6	0	1	7
	2007	1	6	7	5	0	1	6
	2008	1	4	5	6	0	1	7
	2009	1	4	5	5	0	1	6
	2010	1	4	5	5	0	1	6
	2011	1	5	6	7	1	1	9
BBR	1998	7	206	213	9	3	7	19
	2001	5	199	204	11	2	5	18
	2004	8	230	238	13	2	8	23
	2005	5	86	91	10	1	6	17
	2006	3	80	83	10	1	3	14
	2007	3	70	73	10	1	3	14
	2008	3	76	79	10	1	3	14
	2009	2	68	70	10	1	2	13
	2010	2	63	65	11	2	2	15
	2011	2	60	62	14	1	2	17
BSS	1998	6	177	183	10	12	6	28
	2001	6	174	180	9	5	6	20
	2004	6	175	181	10	5	6	21
	2005	6	150	156	9	4	6	19
	2006	4	74	78	8	2	4	14
	2007	4	65	69	8	2	4	14
	2008	4	74	78	10	2	4	16
	2009	4	73	77	8	2	4	14
	2010	2	66	68	7	2	2	11
	2011	2	66	68	12	2	2	16
BST	1998	0	2	2	1	0	0	1
	2001	0	4	4	3	1	0	4
	2004	0	1	1	3	0	0	3
	2005	1	4	5	7	0	1	8
	2006	1	42	43	6	2	2	10
	2007	1	28	29	6	1	1	8
	2008	1	29	30	7	1	1	9
	2009	1	17	18	5	2	1	8
	2010	0	4	4	3	1	0	4
	2011	0	0	0	1	0	0	1
PIK	1998	0	43	43	11	2	0	13
	2001	0	2	2	0	0	0	0
	2004	0	1	1	0	0	0	0

		Harvest operations			Processing operations			
Fishery	Year	Catcher vessel	Catcher/ processor	Total harvesting operations	Shoreside processor	Floating processor	Catcher/ processor	Total processing operations
SMB	1998	2	95	97	7	4	2	13
	2009	0	7	7	2	0	0	2
	2010	0	12	12	5	1	0	6
	2011	0	18	18	8	0	0	8
WAI	1998	1	0	1	0	0	1	1
	2001	1	3	4	1	0	1	2
	2004	0	1	1	0	0	0	0

Source: NOAA Fisheries, Alaska Fisheries Science Center. BSAI Crab Economic Data

For harvesters, participation in a rationalized crab fishery is determined from harvest activity, landing revenues, and labor in the fishery, as reported in the EDR. For processors, participation is determined from processing activity, raw pounds input to production, and finished production in the crab fishery, as reported in the EDR. Note that the figures for processing operations exclude voluntary EDR submissions from crab buyers who had all of their purchased BSAI crab custom processed by another processor. Years not shown for PIK, SMB, and WAI fisheries indicate no harvest or processing participants due to fishery closure.

Table 59: EDR vessel coverage

Year	Vessels in EDR & ADF&G fish tickets/eLandings	Vessels in ADF&G fish tickets/eLandings	EDR vessel coverage
1998	231	286	80.8%
2001	220	253	87.0%
2004	245	256	95.7%
2005	171	182	94.0%
2006	102	102	100.0%
2007	86	86	100.0%
2008	94	94	100.0%
2009	88	89	98.9%
2009	89	89	100.0%
2010	79	79	100.0%
2011	77	77	100.0%

Source: NMFS AFSC BSAI Crab Economic Data. EDR vessels are catcher vessel operations that reported sold crab in the year of interest and catcher/processors that reported processing or purchasing crab in the year of interest, per EDR data. Vessels in ADF&G fish tickets/eLandings are vessels that had commercial crab landings in the year of interest, per fish ticket or eLandings data.

Table 60: EDR vessel coverage by fishery

Fishery	Year	Vessels in EDR + FT	Vessels in EDR only	Vessels in fish tickets only	Estimated landings from EDR as % of FT landings
AIG	1998	14	1	2	99%
	2001	19	1	2	96%
	2004	21	0	1	95-98%
	2005	9	3	0	110-115%
	2006	7	0	0	102%
	2007	7	0	0	96%
	2008	5	0	0	94%
	2009	5	0	0	113%
	2010	5	2	0	90%
	2011	5	2	0	102%
BBR	1998	206	1	67	80%
	2001	202	0	28	89%
	2004	237	0	14	98%
	2005	89	2	0	99%
	2006	81	2	0	100-105%
	2007	73	1	0	98%
	2008	79	1	0	97%
	2009	70	0	0	99%
	2010	65	1	0	100%
	2011	61	1	1	100%
BSS	1998	177	0	54	78%
	2001	178	0	30	87%
	2004	179	0	10	97%
	2005	155	1	12	100%
	2006	78	0	0	101%
	2007	67	1	0	99%
	2008	78	0	0	100%
	2009	76	1	1	97%
	2010	68	1	0	0.99
	2011	68	1	0	0.97
BST	2001	0	4	2	533%
	2004	0	1	0	0%
	2005	4	1	0	100-105%
	2006	42	1	3	103%
	2007	27	1	2	100%
	2008	28	2	2	98%
	2009	16	2	2	97%
PIK	1998	42	1	16	73%
	2001	0	1	0	--
	2004	0	1	0	--
SMB	1998	92	0	39	76%
	2009	7	0	0	100%
	2010	10	3	1	99%
	2011	18	3	0	101%
WAI	1998	1	1	0	1207%
	2001	4	0	0	100%
	2004	0	1	0	--

Source: NMFS AFSC BSAI Crab Economic Data, ADF&G fish tickets, eLandings. EDR vessels are catcher vessel operations that reported sold crab in the fishery and year of interest and catcher/processors that reported processing or purchasing crab in the fishery and year of interest, per EDR data. Vessels in ADF&G fish tickets/eLandings are vessels that had commercial crab landings in the year of interest, per fish ticket or eLandings data.

Table 61: Operations Reporting Crab Purchasing In EDR and Fish Tickets, by Fishery

Fishery	Year	Operations in EDR + FT	Operations in EDR only	Operations in FT only	EDR lbs as % of FT lbs
AIG	1998	4	2	3	91%
	2001	5	1	1	89%
	2004	4	1	0	60%
	2005	6	1	1	101%
	2006	7	1	2	92%
	2007	7	0	0	114%
	2008	7	1	1	89%
	2009	5	0	6	104%
	2010	12	3	4	119%
	2011	12	2	4	100%
BBR	1998	14	6	4	90%
	2001	10	8	5	99%
	2004	14	9	1	97%
	2005	14	4	2	101%
	2006	13	2	3	91%
	2007	12	4	5	96%
	2008	14	4	1	100%
	2009	10	3	6	100%
	2010	12	3	4	119%
	2011	12	2	4	100%
BSS	1998	22	6	7	90%
	2001	15	6	3	96%
	2004	17	5	2	98%
	2005	15	4	1	97%
	2006	14	0	1	100%
	2007	14	2	4	109%
	2008	13	4	3	103%
	2009	9	5	5	94%
	2010	9	5	2	97%
	2011	11	3	3	92%
BST	1998	0	1	0	n/a
	2001	0	5	0	n/a
	2004	0	3	0	n/a
	2005	4	4	0	209%
	2006	10	0	1	110%
	2007	9	0	1	100%
	2008	9	2	3	85%
	2009	6	3	5	94%
	2010	5	2	2	64%
PIK	1998	12	2	4	94%
SMB	1998	12	2	2	95%
	2009	4	1	2	100%
	2010	7	2	3	108%
	2011	8	1	4	69%
WAI	1998	0	1	0	100%
	2001	1	1	0	48%

Source: NMFS AFSC BSAI Crab Economic Data. Fish ticket data from ADF&G.

EDR operations are shoreside and floating processors that reported purchasing and catcher/processors that reported processing or purchasing crab in the fishery and year of interest, per EDR data. Fish ticket operations are operations that made purchases in the fishery and year of interest or, starting in 2005, received crab landings as a custom processor, per fish ticket data,. Operations from the two data sources were matched on the basis of ADF&G processor code. Percent coverage in pounds compares the volume of raw crab input to production, as reported in the EDR, to the volume of crab purchased, as reported in ADF&G fish tickets.

Table 62: Producer Price Index – Unprocessed and Packaged Fish

Year	Index	2012 Adjustment Factor
1991	149.5	1.9231
1992	156.1	1.8418
1993	156.5	1.8371
1994	161.4	1.7813
1995	170.8	1.6833
1996	165.9	1.7330
1997	178.1	1.6143
1998	183.2	1.5693
1999	190.9	1.5060
2000	198.1	1.4513
2001	190.8	1.5068
2002	191.2	1.5037
2003	195.3	1.4721
2004	206.3	1.3936
2005	222.6	1.2916
2006	237.4	1.2110
2007	242.8	1.1841
2008	255.4	1.1257
2009	250.9	1.1459
2010	272.4	1.0554
2011	287.6	0.9997
2012	287.5	1.0000
2013	297.3	0.9670

Source: Bureau of Labor Statistics. Producer Price Index-Commodities, Series WPU0223 (Unprocessed and packaged fish). Retrieved December 2013 from http://www.bls.gov/ppi/. 2013 index represents the average of the 2013 monthly index values for January through July.

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Appendices

Appendix A: PROBABILITY FORECASTS FOR ALASKA KING CRAB AND SNOW CRAB WHOLESALE PRICES: VAR(3) ANALYSIS

INTRODUCTION

This document briefly summarizes model development and data updates and extensions to documentation of price forecast methods and results developed to support analysis of Proposed Amendments 38 and 39 of the BSAI Crab FMP (NMFS, 2011; pp. 417-439). That report described a time series model that was used to estimate probabilistic forecast trajectories of crab wholesale prices for use in economic analysis of long-term simulations of crab population scenarios under management alternatives for implementation of Annual Catch Limits (ACLs). This appendix updates the VAR(3) model documentation from July, 2011. Specifically, it employs models for gold king crab and red king crab based on time series for king crab import and export prices, and COAR price indices for gold king crab and red king crab, respectively, and replaces the model for snow crab with one based on time series for snow crab COAR price, snow crab import price, and snow crab export price. The selected models are used to estimate short-term price forecasts of COAR price indices to estimate current-year (2013) Alaska crab wholesale prices based on 1991-2012 time series, updated with import/export price series current to July 2013.

DATA

Time series data for the period 1991-2012 were derived from COAR reports and U.S. Census Bureau Merchandise Trade Statistics, the latter were accessed via the U.S. Trade Policy Information System (TPIS). The COAR time series represent the i) physical quantity of production in each year and ii) an index of real first-wholesale prices (i.e., economic value per physical unit) for (all) types of frozen crab products. Separate series were derived from COAR for gold king crab, red king crab, and snow crab. Similarly, quantities and price indices for exports and imports were retrieved from the TPIS. However, the trade data do not distinguish among the three king crab species, and thus, are most comparable to the aggregate COAR series. In forming the real price indices, all nominal economic values were converted into 2012-equivalent real economic values using a price deflator based on a producer price index (PPI)available from the U.S. Bureau of Labor Statistics (BLS), WPU0223= Processed and unprocessed fish, a general category that includes frozen shellfish commodities.

MODEL

Vector autoregression (VAR) models with (alternatively) lags of 1-2-3 years were considered. Model specification tests based on the Akaike Information Criterion (AIC) and the Bayesian-Schwarz Information Criterion (BIC) were conducted using the 1991-2008 dataset. These, and a battery of bivariate, trivariate, quadravariate Granger causality tests, had the strongest support for the VAR(3) model specification. The number of parameters to estimate grows with each lag and the VAR(4) model exhausted the time series. Likewise, the number of parameters grows for each series that is added to the system, and the statistical software (S+Finmetrics) had severe problems with bad results, for example, with a VAR(3) and 4 series. In terms of the backtesting results, the VAR(2) model with 4 series was outperformed by the best VAR(3) with 3 series. Therefore, model selection here is limited to the VAR(3) specification, each with three time series for prices. The software that was used is S+8 with the module Finmetrics 3. All tests, estimation, and forecasting procedures are described in Chapter 11 ("Vector autoregressive models for multivariate time series") of Zivot and Wang (2003).

The final set of models that were used to forecast prices are each represented by three time series (x1, x2, x3):

1. Gold king crab: COAR gold king crab price index (x1), TPIS king crab export price index (x2), TPIS king crab import price index (x3);

2. Red king crab: COAR red king crab price index (x1), TPIS king crab export price index (x2), TPIS king crab import price index (x3);

3. Snow crab: COAR snow crab price index (x1); TPIS snow crab export price index (x2), TPIS snow crab import price index (x3).

DATA and SOURCES:
Alaska 1st Wholesale price:
ADFG Commercial Operators Annual Report (COAR)
Series for golden king crab, red king crab, snow crab, all product forms, processors with 4 or 5 active years in 2008-2012: COAR_GKC, COAR_RKC, COAR_SNOW

Trade data source: US Census Bureau Merchandise Trade Statistics
Retrieved September 2013: US International Trade Administration Trade Policy Information System (TPIS),
Group: Processed foods and feeds
Item: Unprocessed and packaged fish

HS Series for Exports and Imports, All US customs districts and trade partners:
0306144010--KING CRABS, FROZEN, EXCEPT CRABMEAT
0306144020--SNOW CRABS, FROZEN, EXCEPT CRABMEAT
EX_KING, EX_SNOW, IM_KING, IM_SNOW

Data for all years adjusted to real 2012 dollars using BLS PPI for commodities WPU0223

Table A1: COAR and Import/Export Price Data, 1991 – 2012 ($/lb)

YEAR	COAR_GKC	COAR_RKC	COAR_SNOW	EX_KING	EX_SNOW	IM_KING	IM_SNOW
1991	12.98223	14.36648	3.41510	12.14609	4.15738	11.16507	6.29570
1992	10.74099	14.84132	3.42922	13.46351	4.07182	8.46008	4.42860
1993	8.37371	13.97920	4.10292	12.07161	4.88861	9.60061	5.34092
1994	12.79516	21.15540	6.37853	10.62373	6.63825	10.60611	6.06463
1995	10.01360	15.87560	9.03913	9.38057	7.70603	8.58858	6.26093
1996	8.89815	14.97745	5.83919	9.96496	5.77208	8.04923	5.13870
1997	7.41687	9.99136	3.38848	7.37067	3.86481	8.26375	3.82689
1998	6.65579	8.70834	3.16661	5.23578	3.18347	7.32151	3.62520
1999	10.27565	16.81486	4.38953	6.39187	4.04600	8.10128	4.60276
2000	10.59610	13.33107	6.13693	9.80251	5.72646	9.50330	5.49610
2001	10.58051	14.40638	5.56687	12.33516	5.52188	10.15675	4.72700
2002	11.16835	17.92830	5.47993	9.98210	5.34943	12.13933	4.79191
2003	11.36093	14.41550	6.48630	8.49169	6.42167	10.82452	5.62810
2004	9.38381	12.84945	6.67197	7.54108	6.09675	8.94444	5.40048
2005	7.70076	10.99487	5.03481	8.04401	5.10287	7.91203	4.11737
2006	5.47028	9.02126	3.46218	7.29848	4.62483	6.51205	3.58240
2007	6.71228	10.01576	4.62054	7.89444	3.82110	6.42673	4.49657
2008	7.44145	10.77325	4.52042	8.12229	4.07862	8.44604	4.46656
2009	6.19374	9.87337	3.91481	10.19693	4.25341	7.99778	3.82768
2010	7.92843	14.06370	3.44703	10.72556	3.99238	8.47409	4.10541
2011	10.45640	17.45717	5.35147	10.80889	4.84520	9.11247	5.54826
2012	9.13707	15.04263	4.75031	11.56523	4.58220	7.91697	4.71944

Table 1: Regression results produced by the S+finmetrics software for three models. The regression runs through 2012 and 1991-1993 data are used as lags, so the time series actually used for estimation starts in 1994.

```
2013 GKC COAR price index

CONDITIONAL FORECAST (NOWCAST):
median(90%CI): 10.24 (9.17,11.31)
Conditional on (Jan-July 2013):
EXKING=13.03, IMKING=7.92

UNCONDITIONAL FORECAST
(90%CI):8.7850 (5.957179,11.61287)

GKC VAR2012 SUMMARY:
x1 = COAR_GKC
x2 = EX_KING
x3 = IM_KING

Coefficients:
              x1      x2      x3
(Intrcpt)  2.6872  4.0469  4.3186
(std.err)  5.5846  2.2793  3.0302
 (t.stat)  0.4812  1.7755  1.4252

  x1.lag1  0.2336 -0.0921  0.0646
(std.err)  0.6256  0.2553  0.3395
 (t.stat)  0.3733 -0.3609  0.1902

  x2.lag1  0.1541  0.9805  0.2573
(std.err)  0.5306  0.2165  0.2879
 (t.stat)  0.2904  4.5281  0.8939

  x3.lag1  0.5674  0.5351  0.6389
(std.err)  1.0943  0.4466  0.5938
 (t.stat)  0.5185  1.1982  1.0761

  x1.lag2 -0.0422  0.1430  0.0591
(std.err)  0.4892  0.1997  0.2655
 (t.stat) -0.0862  0.7159  0.2227

  x2.lag2  0.0756 -0.5940 -0.1270
(std.err)  0.7975  0.3255  0.4328
 (t.stat)  0.0948 -1.8249 -0.2934

  x3.lag2 -0.2878 -0.5363 -0.2456
(std.err)  0.7996  0.3263  0.4338
 (t.stat) -0.3600 -1.6434 -0.5660

  x1.lag3  0.0499 -0.7899  0.1985
(std.err)  0.4571  0.1865  0.2480
 (t.stat)  0.1091 -4.2347  0.8003

  x2.lag3 -0.0138  0.3212 -0.1669
(std.err)  0.6008  0.2452  0.3260
 (t.stat) -0.0229  1.3097 -0.5119

  x3.lag3 -0.0368  0.6063 -0.1831
(std.err)  0.7218  0.2946  0.3916
 (t.stat) -0.0510  2.0582 -0.4676

Regression Diagnostics:
                 x1      x2     x3
     R-squared 0.4036  0.8832  0.6574
Adj. R-squared -0.1928  0.7664 0.3147
  Resid. Scale  2.2066  0.9006 1.1973

Information Criteria:
  logL      AIC      BIC       HQ
-56.5810 173.1620 201.4952  177.9571

                    total residual
Degree of freedom:    19        9
Time period: from 1994 to 2012
```

```
RKC 2013 COAR price index

CONDITIONAL FORECAST (NOWCAST):
median(90%CI): 18.38 (15.90,20.86)
Conditional on (Jan-July 2013):
EXKING=13.03, IMKING=7.92

UNCONDITIONAL FORECAST:
(90%CI)15.24136 (10.63752,19.84521)

RKC VAR2012 SUMMARY:
x1 = COAR_RKC
x2 = EX_KING
x3 = IM_KING

Coefficients:
              x1      x2      x3
(Intrcpt)  2.8777  7.1668  2.8479
(std.err)  8.0677  2.0837  2.6823
 (t.stat)  0.3567  3.4395  1.0617

  x1.lag1 -0.0344  0.1188 -0.0241
(std.err)  0.4480  0.1157  0.1489
 (t.stat) -0.0769  1.0264 -0.1621

  x2.lag1  1.0114  0.8181  0.3532
(std.err)  0.8717  0.2251  0.2898
 (t.stat)  1.1603  3.6341  1.2187

  x3.lag1  0.2194 -0.1264  0.8494
(std.err)  1.3560  0.3502  0.4508
 (t.stat)  0.1618 -0.3610  1.8841

  x1.lag2 -0.3434  0.0433 -0.0697
(std.err)  0.3854  0.0995  0.1281
 (t.stat) -0.8910  0.4348 -0.5438

  x2.lag2  0.0424 -0.3982 -0.2080
(std.err)  1.1141  0.2877  0.3704
 (t.stat)  0.0381 -1.3840 -0.5615

  x3.lag2  0.4720  0.0153 -0.2163
(std.err)  1.2532  0.3237  0.4167
 (t.stat)  0.3767  0.0473 -0.5191

  x1.lag3 -0.2003 -0.3700  0.0823
(std.err)  0.3702  0.0956  0.1231
 (t.stat) -0.5410 -3.8697  0.6685

  x2.lag3  0.4413  0.0632 -0.0868
(std.err)  0.9359  0.2417  0.3112
 (t.stat)  0.4715  0.2616 -0.2790

  x3.lag3 -0.1458  0.1441 -0.0050
(std.err)  0.8574  0.2214  0.2851
 (t.stat) -0.1700  0.6507 -0.0175

Regression Diagnostics:
                 x1     x2     x3
     R-squared 0.4515 0.8760 0.6591
Adj. R-squared -0.0970 0.7520 0.3181
  Resid. Scale 3.5924  0.9278  1.1944

Information Criteria:
    logL      AIC      BIC        HQ
 -73.2738  206.5475 234.8807 211.3426

                    total residual
Degree of freedom:    19        9
Time period: from 1994 to 2012
```

```
SNOW 2013 COAR price index

CONDITIONAL FORECAST (NOWCAST):
median(90%CI): 5.475 (5.170,5.779)
Conditional on (Jan-July 2013):
EXSNOW=4.94, IMSNOW=4.85

UNCONDITIONAL FORECAST:
(90%CI) 4.2457 (2.968881,5.522541)

SNOW VAR2012 SUMMARY:
x1: COAR_SNOW
x2: EX_SNOW
x3: IM_SNOW

Coefficients:
              x1      x2      x3
(Intrcpt)  2.0451  1.6435  4.0006
(std.err)  2.9193  2.4178  1.5729
 (t.stat)  0.7005  0.6798  2.5434

  x1.lag1 -0.9469 -0.3563 -0.3548
(std.err)  0.6477  0.5365  0.3490
 (t.stat) -1.4618 -0.6641 -1.0166

  x2.lag1  1.8653  1.0658  0.7214
(std.err)  0.7723  0.6397  0.4161
 (t.stat)  2.4151  1.6661  1.7336

  x3.lag1  0.4335  0.3368  0.3416
(std.err)  0.8290  0.6866  0.4466
 (t.stat)  0.5230  0.4905  0.7648

  x1.lag2 -0.8483 -0.2684 -0.2675
(std.err)  0.6074  0.5031  0.3273
 (t.stat) -1.3965 -0.5336 -0.8174

  x2.lag2  0.4817 -0.2089  0.2425
(std.err)  0.8809  0.7296  0.4746
 (t.stat)  0.5469 -0.2864  0.5109

  x3.lag2 -0.2012 -0.0369 -0.6572
(std.err)  0.9031  0.7480  0.4866
 (t.stat) -0.2228 -0.0493 -1.3506

  x1.lag3 -0.1883 -0.1800 -0.0689
(std.err)  0.5736  0.4751  0.3091
 (t.stat) -0.3283 -0.3789 -0.2231

  x2.lag3  0.2273  0.0159 -0.1924
(std.err)  0.6991  0.5790  0.3767
 (t.stat)  0.3251  0.0275 -0.5107

  x3.lag3 -0.2024  0.3296  0.3785
(std.err)  0.5524  0.4575  0.2976
 (t.stat) -0.3664  0.7205  1.2718

Regression Diagnostics:
                 x1     x2     x3
     R-squared 0.7664 0.7487 0.7814
Adj. R-squared 0.5328 0.4974 0.5628
  Resid. Scale 0.9963 0.8252 0.5368

Information Criteria:
    logL      AIC      BIC        HQ
 -7.7503  75.5005 103.8337   80.2956

                    total residual
Degree of freedom:    19        9
Time period: from 1994 to 2012
```

BACKTESTING and CURRENT-YEAR FORECAST (NOWCAST) RESULTS

Fig. 1a: Gold king crab VAR(3) model and data 1991-2012 with three price series based on COAR wholesale values for gold king crab (plot), TPIS king crab import price index, and TPIS king crab export price index. The regression runs through 2013 with 90% 1-step forecasts for 2011 and 2012, where the latter is conditioned on Jan-July 2013 average values for TPIS series. The expected values of each forecast are represented by squares in the forecast intervals for each year. All values are in 2012 dollars per pound.

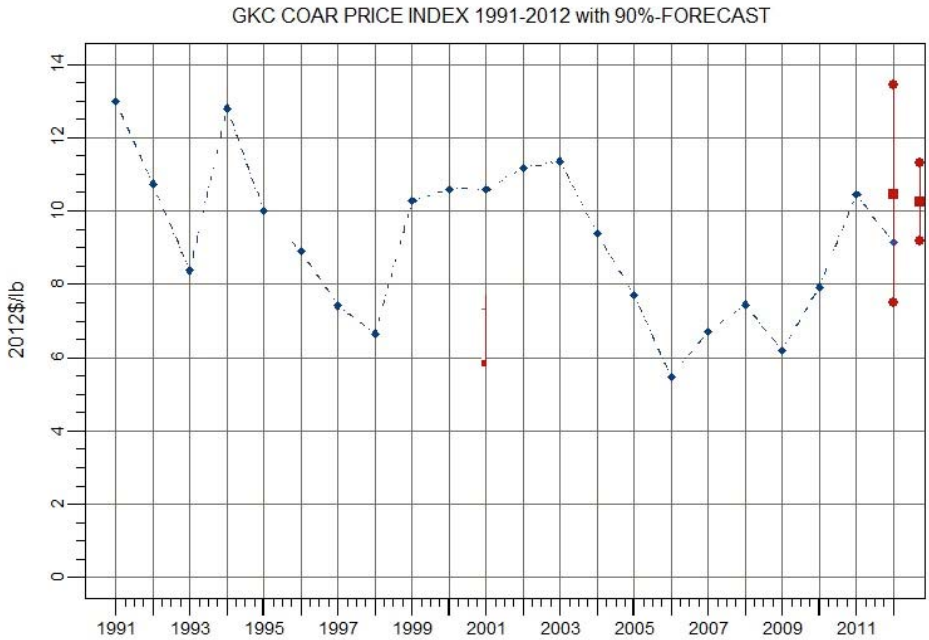


Fig. 1b: Red king crab VAR(3) model and data 1991-2012 with three price series based on COAR wholesale values for red king crab (plot), TPIS king crab import price index, and TPIS king crab export price index. The regression runs through 2013 with 90% 1-step forecasts for 2011 and 2012 where the latter is conditioned on Jan-July 2013 average values for TPIS series. The expected values of each forecast are represented by squares in the forecast intervals for each year. All values are in 2012 dollars per pound.

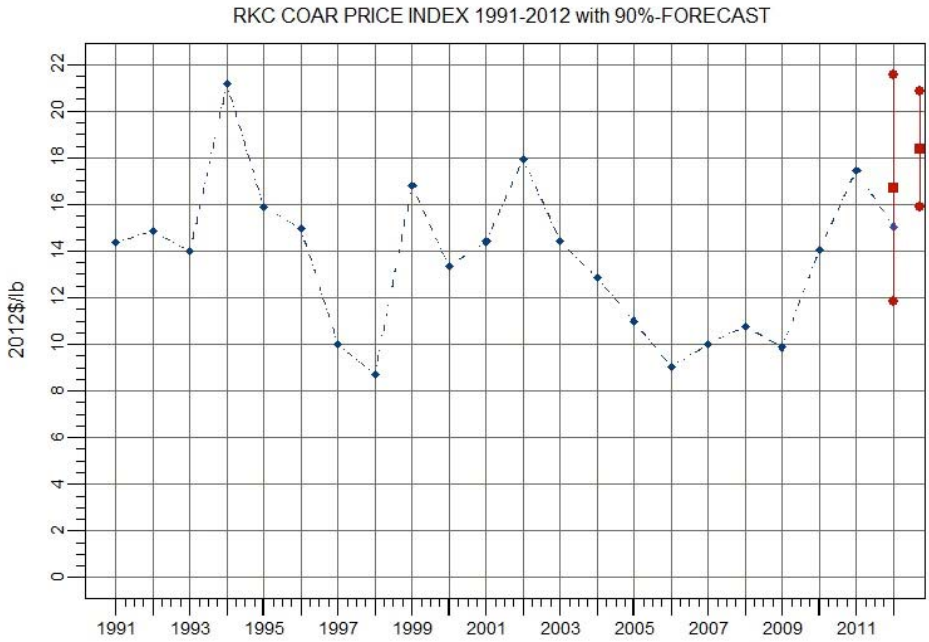
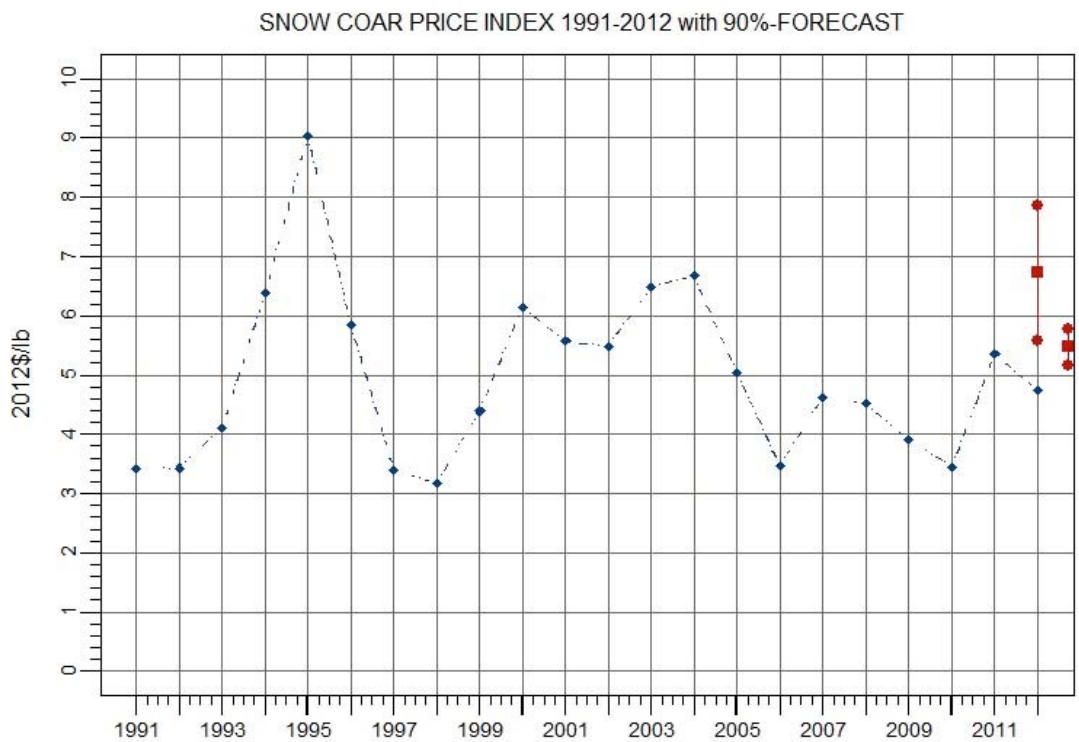


Fig. 1c: Snow crab VAR(3) model and data 1991-2008 with three price series based on COAR wholesale values for snow crab (plot) TPIS snow crab import price index, and TPIS snow crab export price index. The regression runs through 2013 with 90% 1-step forecasts for 2011 and 2012 where the latter is conditioned on Jan-July 2013 average values for TPIS series. The expected values of each forecast are represented by squares in the forecast intervals for each year. All values are in 2012 dollars per pound.



Appendix B: Ongoing Research

Bioeconomic Models of North Pacific Crab Stocks to Analyze Effects of Market Variability and Climate-Oceanographic Change

Mike Dalton*, Brian Garber-Yonts, and andré Punt
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Maximum sustainable yield (MSY) is the default reference point in U.S. fisheries management. However the Magnuson-Stevens Act defines optimum yield in National Standard 1 as the amount of fish that provides the greatest overall benefit to the nation, which could deviate from MSY because of economic (or other) factors. While it has long been recognized that MSY is not in general an economic optimum, estimates of maximum economic yield (MEY) are not typically reported in fishery management plans, presumably because of data limitations on economic costs related to fishing. Furthermore, uncertainty is a fundamental feature of the environment in which fishermen and processors make decisions. Coupled bioeconomic models are being developed to analyze effects of market variability and changes in climate-ocean conditions on North Pacific crab stocks. The first bioeconomic model that was developed consisted of a population dynamics model for the Eastern Bering Sea snow crab stock (BSS) coupled to an economic dynamics model, which was calibrated to revenue and cost data from the BSAI Crab EDR database. The second bioeconomic model is similar to the first, but applied to the Bristol Bay red king crab stock (BBR). To evaluate impacts of ocean acidification on the BBR stock, this second model was extended with an explicit stage structured pre-recruitment component that was calibrated to results of exposure experiments conducted at the AFSC Kodiak lab. The third model coupled the BBR and BSS bioeconomic models to estimate joint maximum economic yield. A new project for 2012-13 at the University of Washington's Joint Institute for the Study of the Atmosphere will develop a bioeconomic model for the Bering Sea tanner crab (BST) stock, including a pre-recruitment component. The BST bioeconomic model will be coupled with BBR and BSS bioeconomic models, and used to forecast effects of ocean acidification. The development of a bioeconomic model for Aleutian Islands golden king crab is planned for future research.

Production Efficiency and Exit in Catch Share Fisheries

Ron Felthoven* and Kurt Schnier
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Economic theory predicts that the least efficient vessels are more likely to exit a fishery following the transition from an open-access fishery to an individual transferable quota (ITQ) management regime. Tools are needed to help analysts predict the likely degree and distribution of consolidation prior to implementing ITQ programs. Previous research analyzing efficiency in ITQ fisheries has either relied upon data before and after the program was implemented and/or used a two-step procedure to model vessel efficiency, wherein the decision to be active following the transition is assumed to be independent from one's prior production practices. This research utilizes a one-stage estimation procedure to determine the degree to which one's technical inefficiency preceding an ITQ regime

influences the likelihood of them exiting after the transition, which can be used for ex-ante predictions regarding the changes in composition after a transition to ITQs. Using pre-ITQ data on fishermen participating in the North Pacific crab fisheries, our results indicate that a vessel's measure of technical inefficiency is a significant and positive factor in explaining whether it exits the fishery following the implementation of ITQs. This paper is forthcoming in Land Economics.

Updating the North Pacific Fishing Community Profiles

Amber Himes-Cornell,* Kristin Hoelting, Peter Little and Conor Maguire
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A NOAA Technical Memorandum finalized in October 2011 documents the process we are undertaking to update the *Community Profiles for North Pacific Fisheries – Alaska*. In addition, the communities to be included in the updated document were reevaluated to ensure that communities with significant reliance on commercial, recreational and subsistence fishing are included. This resulted in a total of 195 communities that will be profiled, including the 136 communities that were profiled in the 2005 *Community Profiles for North Pacific Fisheries – Alaska* (Community Profiles; Sepez et al 2005) and an additional 60 communities that were not previously included. ESSRP staff spent the majority of 2011 developing a template for the new community profiles, researching and compiling data sources needed for the profile update, and working with the Alaska Fisheries Information Network to compile all of the data for the profiles into a database for use during the profile update process. The new template adds a significant amount of new information to help provide a better understanding of each community's reliance on fishing. The community profiles comprise additional information including, but not limited to, annual population fluctuation, fisheries-related infrastructure, community finances, natural resources, educational opportunities, fisheries revenue, shore-based processing plant narratives, landings and permits by species, and subsistence and recreational fishing participation, as well as information collected from communities in the Alaska Community Survey, which was implemented during summer 2011.

A team of research assistants was assembled in November 2011 to start the process of revising the profiles. Throughout 2012, this team has been systematically revising all of the existing community profiles and drafting new profiles for the additional 60 communities. Each of the 195 communities has been sent a copy of their updated profile and is being encouraged to provide comments. All comments received will be incorporated into the profiles to the extent feasible. A final version of each community profile is expected to be completed by early October 2012. In October and November 2012, regional profiles will be drafted that summarize overall involvement in fishing by communities in each of the major regions of Alaska.

Final versions of the regional profiles and community profiles will be made available on the AFSC website. ESSRP staff have been working with AFSC GIS specialists to develop an interactive website where the user can view high level commercial, recreational and subsistence data through a webmapping tool. The user will also be able to download non-confidential data per community and each community's profile. The webmapping tool is expected to launch in fall 2012 and can be reached via the existing community profiles website:
http://www.afsc.noaa.gov/REFM/Socioeconomics/Projects/CPU.php.

Surveying the Importance of Fishing to Alaskan Communities

Amber Himes-Cornell
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In FY11, ESSRP social scientists developed, tested, and finalized survey materials and completed the OMB approval process for the Alaska Community Survey. As a part of the survey development process, ESSRP social scientists compiled data sets to run a data envelopment analysis model to select fishing communities most engaged in or dependent on North Pacific fisheries to receive the survey. Data collection with the survey instrument was also completed by ESSRP social scientists and an initial analysis of the data was performed. The Alaska Community Survey was implemented during summer 2011. Surveys were sent out to community leaders in 181 fishing communities. Surveys for 111 communities were returned, representing a response rate of 61.3%. The information collected in the survey included time series data, information on community revenues based in the fisheries economy, population fluctuations, fisheries infrastructure available in the community, support sector business operations in the community, community participation in fisheries management, and effects of fisheries management decisions on the community. The data received from the surveys has been incorporated into the updated *Community Profiles for North Pacific Fisheries – Alaska* (NOAA Tech Memo NMFS-AFSC-160; currently being revised) and to provide summary statistics on fishing communities throughout different regions of Alaska. The survey will be repeated in late 2012 in order to provide a second year of data and to give communities that did not submit the survey in 2011 another opportunity to provide data.

A NOAA Technical Memorandum finalized in October 2011 documents the process we are undertaking to update the *Community Profiles for North Pacific Fisheries – Alaska*. In addition, the communities to be included in the updated document were reevaluated to ensure that communities with significant reliance on commercial, recreational and subsistence fishing are included. This resulted in a total of 195 communities that will be profiled, including the 136 communities that were profiled in the 2005 *Community Profiles for North Pacific Fisheries – Alaska* (Community Profiles; Sepez et al 2005) and an additional 60 communities that were not previously included. ESSRP staff spent the majority of 2011 developing a template for the new community profiles, researching and compiling data sources needed for the profile update, and working with the Alaska Fisheries Information Network to compile all of the data for the profiles into a database for use during the profile update process. The new template adds a significant amount of new information to help provide a better understanding of each community's reliance on fishing. The community profiles comprise additional information including, but not limited to, annual population fluctuation, fisheries-related infrastructure, community finances, natural resources, educational opportunities, fisheries revenue, shore-based processing plant narratives, landings and permits by species, and subsistence and recreational fishing participation, as well as information collected from communities in the Alaska Community Survey, which was implemented during summer 2011.

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major regions of Alaska.

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http://www.afsc.noaa.gov/REFM/Socioeconomics/Projects/CPU.php.

Developing Comparable Socio-economic Indices of Fishing Community Vulnerability and Resilience for the Contiguous U.S. and Alaska

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Fishing communities exist within a larger coastal economy. Therefore, the ability to understand the context of vulnerability to social factors is critical to understanding how regulatory change will be absorbed into these multifaceted communities. Creating social indicators of vulnerability for fishing communities provides a pragmatic approach toward standardization of data and analysis for assessment of some of the long-term effects of management actions. Historically, the ability to conduct such analysis has been due to the lack of quantitative social data. Over the past two years, social scientists working in NOAA's Alaska, Northeast (NE) and Southeast (sd) regions have been engaged in the development of indices for evaluating aspects of fishing community vulnerability and resilience to be used in the assessment of the social impacts of proposed fishery management plans and actions (Colburn and Jepson, 2012). In addition, a social scientist at the Northwest Fisheries Science Center is in the early stages of developing similar indicators for the west coast and is expected to have them completed by the time the results are needed for the proposed project. The Northeast Fisheries Science Center (NEFSC) and Southeast Regional Office (SERO) have developed a set of social indices using secondary data for nearly 3,000 coastal communities in the Eastern U.S. and Gulf Coast (Jepson and Colburn, *In prep*).

The Alaska Fisheries Science Center (AFSC) has developed similar indices for over 500 communities in Alaska. We compiled socio-economic and fisheries data from a number of sources to conduct an analysis using the same methodology used by the NEFSC and SERO. To the extent feasible, the same sources of data are being used in order to allow comparability between regions. However, initial comparisons indicate that resource, structural and infrastructural differences between the NE and SE and Alaska will require modifications of each of the indices to make them strictly comparable. The data are being analyzed using principal components analysis which allow us to separate out the most important socio-economic and fisheries related factors associated with community vulnerability and resilience in Alaska in a statistically meaningful way.

These social indices are intended to improve the analytical rigor of fisheries Social Impact Assessments, through analysis of adherence to National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act and Executive Order 12898 on Environmental Justice in components of Environmental Impact Statements. Given the often short time frame in which such analyses are often conducted, an advantage to the approach taken by the Principal Investigators to date is that the majority of the data used to construct these indices are readily accessible secondary data and

can be compiled quickly to create measures of social vulnerability and to update community profiles.

The next step in this research project is to incorporate stakeholder feedback to adapt the current methodology so that a new set of indices can be created that will enable comparisons across these regions and eventually, nationwide. This will allow cross regional analysis of fishing community vulnerability and resilience and testing of the validity of the results through in-community education and outreach. Modifications to the methodology will be made based on community feedback.

Groundtruthing the results will facilitate the use of these tools by the AFSC, NOAA's Alaska Regional Office and the North Pacific Fishery Management Council staff to analyze the comparative vulnerability of fishing communities across Alaska to proposed fisheries management regulations, in accordance with NS8. This research will provide policymakers with an objective and data driven approach to support effective management of North Pacific fisheries.

References

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Using Indicators to Assess the Vulnerability and Resiliency of Alaskan Communities to Climate Change

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Communities in Alaska are experiencing impacts of unexpected climate-related changes and unprecedented environmental conditions on the harvests of marine and terrestrial resources. Residents of rural Alaska are already reporting heretofore unseen changes in the geographic distribution and abundance of fish and marine mammals, increases in the frequency and ferocity of storm surges in the Bering Sea, changes in the distribution and thickness of sea ice, and increases in river and coastal erosion. When combined with ongoing social and economic change, climate, weather, and changes in the biophysical system interact in a complex web of feedbacks and interactions that make life in rural Alaska extremely challenging.

We develop a framework of indicators to assess three basic forms of community vulnerability to climate change: exposure to the bio-physical effects of climate change, dependence on resources that will be affected by climate change, and a community's adaptive capacity to offset negative impacts of climate change. We conduct a principal components analysis on each of the three forms of vulnerability, and then combine all three forms of vulnerability together to determine each community's overall vulnerability to climate change. The principal components analysis, which is a variable reduction strategy, allows us to separate the most important factors determining the vulnerability of each community to each type of risk factor in a robust, consistent, and statistically meaningful way. For the 392 communities in Alaska with data, the 105 variables included in the principal components analysis break down into 21 different principal components, which explain a total of 78.4% of the variation

across all variables. The components with the most explanatory power include poverty and demographics, subsistence halibut and commercial participation, latitude of catch, sportfishing, and employment diversification.

The framework developed here can also be applied more generally through indicators that assess community vulnerability and resiliency to sea level rise, drought, storm intensity, and other likely impacts of climate change. These indicators can help inform how best to allocate resources for climate change adaptation.

Coupling Bioeconomic Model and Regional Computable General Equilibrium (CGE) Model for Alaska Crab Fisheries

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A comprehensive two-stock bioeconomic model for Bristol Bay red king crab (BBR) and Eastern Bering Sea Snow Crab (BSS) was developed with support from NOAA Fisheries Office of Science and Technology, and NOAA's Office of Oceanic and Atmospheric Research. Increases in atmospheric CO2 concentrations, caused primarily by fossil fuel emissions and deforestation, has led to corresponding increases in oceanic CO2 concentrations, and hence, changes in carbonate chemistry of the oceans and decreases in ocean pH. As CO2 levels continue to rise over the coming decades, the pH in the ocean will fall even further. This trend could have substantial physiological effects on marine organisms, affecting growth, survival, reproduction, and behavior. Calcifying organisms may be particularly affected because the reduction in pH makes it more difficult to excrete and sustain a calcified shell or exoskeleton.

Most of the management strategies developed for fish and invertebrate species in the U.S. and elsewhere are predicated on the assumption that the productivity of the resources remains constant over long time periods. This assumption is likely to be violated by the impact of ocean acidification. However, the impact of such violation is poorly understood generally, and for North Pacific crab fisheries in particular. The ideal tool to explore the biological and economic impacts of ocean acidification is a bio-economic modeling framework which a) integrates predictions regarding trends over time in ocean pH; b) separates life-history stages for growth and mortality of juveniles and adults; and c) includes fishery impacts by analyzing catch and effort in both biological and economic terms. In this model, a size-structured population dynamics model component for larger animals is coupled to a stage-structured model component for smaller animals that have not been recruited into the fishery (i.e., "pre-recruits"). Including an explicit pre-recruit component is unusual in population dynamics models, and it is used in the new king crab bio-economic model to represent the impacts of ocean acidification on pre-recruit life-history stages. These impacts are the subject of ongoing laboratory experiments with juvenile crabs, and data from these experiments will be used to parameterize the pre-recruit component of the new bio-economic model.

Once development of the crab bioeconomic model is completed, as a next step, the model will be coupled with a regional CGE model in order to calculate the impacts of the ocean acidification on the economy of the region depending on the fisheries. Recently, a state-level CGE has been developed and some hypothetical scenarios for change in the total allowable catches (TACs) of the two species, which is driven by ocean acidification, have been simulated to calculate the economic impacts on industry output, value added, and household income for the state of Alaska.

Evaluating Statistical Estimation Strategies for BSAI Crab Rationalization Economic Data Reports

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In 2005 the Bering Sea and Aleutian Islands (BSAI) crab fisheries managed under authority of NOAA Fisheries underwent a drastic change in management regime when the Crab Rationalization Program (CRP) was implemented. As designed by the North Pacific Fishery Management Council, the CRP allocated catch-share quota privileges to both harvesters and processors with the objectives of addressing excess harvesting and processing capacity and improving the performance of the crab fisheries with respect to low economic returns and economic instability for harvesters, processors, and communities. In anticipation of potential changes in the magnitude and distribution of benefits, employment, and other social and economic effects of the CRP, the Council tasked the Alaska Fisheries Science Center (AFSC) with leading the development and implementation of a mandatory reporting requirement to collect annual cost, earnings, and employment data from crab fishery participants. Economic Data Report (EDR) data are intended to support computation of a number of economic performance metrics to evaluate the effects of rationalization on fishery participants and dependent communities, and to provide data and analysis in support of future management changes.

EDR data are a rich source of information for analyzing economic performance of BSAI crab fisheries. As a whole, EDRs include a panel data set of production factor inputs and costs (e.g., fuel, bait), and output and revenue (e.g., landed catch, finished products), and supplement extensive administrative records capturing operational aspects of fishery participants' production. Despite providing a detailed census of all fishery participants' costs and earnings, the full potential of these data has not been realized because of data quality concerns arising from non-sampling sources of survey error and a lack of statistical methods for addressing these concerns. While incomplete, empirical information regarding incidence and structure of measurement error in the panel is provided by annual records-check validation audits performed on a random sample of observations. Both the costs and earnings data panel as well as the qualitative and quantitative data quality information regarding the panel are unique among commercial fisheries economic monitoring efforts. In order to make the best use of these data, address existing concerns about data quality, and establish a statistical framework to support future monitoring and analysis, AFSCs economic research program is seeking technical guidance on how to systematically treat observed and unobserved measurement error and obtain consistent estimates of economic performance measures from EDR and other ancillary data sources. We are also interested in examining the extent to which the addition of EDR cost data improves model performance beyond simpler specifications based upon revenue and effort data.

The study will first examine and review the data and assess alternative model frameworks applicable to the EDR data, including the Errors in Variables (EIV) framework and others (e.g., Bound et al. 2001, Fuller 1987 , Griliches and Hausman 1986, Hsiao 1986, Solon 1985, Tong 2002). Based upon the assessment, analysts will determine a preferred model approach to develop further. The principal focus will be on estimating vessel productions function and various efficiency metrics, with specification to be determined. Using the model chosen, the study will estimate the relationship between a performance variable and data (including both production input quantity/price and output/revenue data as well as measurement error data), and assess changes in model performance using out-of-sample predictions on catch as well as standard model selection and ranking criteria. This latter step will give insight into the

extent to which the use of data that are known to contain noise or reporting errors can still be useful in improving model performance and predictive ability.