# STOCK ASSESSMENT AND FISHERY EVALUATION REPORT FOR THE KING AND TANNER CRAB FISHERIES OF THE GULF OF ALASKA AND BERING SEA/ALEUTIAN ISLANDS AREA:

## ECONOMIC STATUS OF THE BSAI KING AND TANNER CRAB FISHERIES OFF ALASKA, 2014

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The authors of the BSAI King and Tanner Crab SAFE Economic Status Report invite users to provide feedback regarding the quality and usefulness of the Report and recommendations for improvement. AFSC's Economic and Social Sciences Research Program staff have begun an initiative to revise the SAFE Economic Status Reports for Alaska Groundfish and BSAI Crab to incorporate additional analytical content and synthesis, improve online accessibility of public data in electronic formats, and otherwise improve the utility of the reports to users. We welcome any and all comments and suggestions for improvements to the SAFE Economic Status Reports, and have developed an online survey to facilitate user feedback. The survey is available at:
`http://www.afsc.noaa.gov/REFM/Socioeconomics/Contact/SAFE_survey.php`

This report will be available at:
`http://www.afsc.noaa.gov/refm/Socioeconomics/SAFE/default.php`

Time series of data for the tables presented in this report (in CSV format) are available 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, 2014

The Bering Sea/Aleutian Islands (BSAI) crab fisheries managed under the North Pacific Fishery Management Council's Fishery Management Plan (FMP) are currently prosecuted by an active fleet of 113 catcher vessels and two catcher processors, and landed and processed at 21 processing facilities throughout the region. Of the 10 crab stocks and 11 fisheries managed under the FMP[1], seven are currently open to targeted fishing. The Bering Sea Tanner (BST) crab fisheries reopened for targeted fishing for the 2013/14 season [2] after being closed since the 2010/11 season. 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 Saint Matthew blue king (SMB) crab fishery was closed for the 2013/14 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 2014. 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 three sets of primary indicators describing aggregate changes in gross volume and value of production, labor earnings and employment in the crab processing and harvesting sectors, and crab harvest quota leasing activity.

*Response to Comments from the Scientific and Statisitical Committee (SSC)*

Comments by the SSC are in italics.

SSC Minutes, February, 2014 *"The SSC received a presentation of the 2014 Crab SAFE from Brian Garber-Yonts (NMFS-AFSC). The draft document provides a marked improvement over previous Crab SAFE documents, which have been sporadically prepared in the past. This version provides economic and operational information, supported by improved interpretative text, and moves in the direction of providing a well-documented time series of key economic statistics, useful in the*

[1] There are currently 11 distinctly managed fisheries on the 10 crab stocks managed under the FMP; catch allocations and other management elements are administered separately for the Eastern and Western components of the Bering Sea Tanner crab stock, and for the Eastern and Western components of the Aleutian Islands golden king crab stock, and the Pribilof Island blue and red king crab stocks are managed collectively as a single fishery. For fisheries characterized by a small number of participating entities, individual statistics where indicated in Tables 1 - 3, and elsewhere in the report, are suppressed due to confidentiality restrictions; this includes most values for the Pribilof Island golden king (PIG) crab fishery and the Norton Sound red king (NSR) crab fisheries, and aggregate statistics for both Aleutian Islands golden king crab fisheries and both Bering Sea Tanner crab fisheries are reported in aggregate, respectively. Values that are indicated as suppressed for a specific fishery 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.

[2] Although opened as of October, 2013, most activity in the reopened BST fisheries occurred during Spring of 2014.

*Council's management process. It is a good demonstration of the kinds of variables that can be tracked, and types of analyses that can be supported, when a more comprehensive data collection is available. New elements, such as employment statistics, labor compensation, source of labor, and shares accruing to labor, by target fishery add interesting information. Likewise, treatment of quota sale and leasing patterns across the type, species, price, and mode is a very nice addition. The SSC noted the importance of gathering information on a few key variables such as gear purchase and maintenance costs that were lost when scaling down the Crab EDR."*

*"The accessibility of the document would be enhanced by the further development of the Executive Summary and inclusion of a more formal Economic Report Card at the start of the document that emulates the very helpful compilation of summary information and Ecosystem Indices at the beginning of the Ecosystem Considerations Chapter in the BSAI/GOA Groundfish SAFE. As with the groundfish SAFE, it would be useful to have retrospective information on where, broadly, Alaska fisheries benefits accrue, through tracking the communities in which their participants live. In particular, it would be informative to identify where quota owners, harvesters, crew, and processing workers live. Relevant scales for reporting might be Alaska, Pacific Northwest, U.S., or foreign residency."*

Starting with the 2013 volume, Crab Economic Status Report includes an executive summary which provides an overview and statistical summary of of three sets of key economic indicators reported by crab fishery for the most recent five years: physical production volume and gross revenue metrics of economic output in the harvest and processing sectors, employment and wages of fishing crew and processing labor, and CR program harvest and processing quota lease activity (volume of quota leased, average lease cost per pound, and lease rate as a proportion of average ex-vessel price). The executive summary that follows largely comprises a final update of the preliminary economic summary report that ESSRP provides to accompany the CPT's Crab SAFE Report for the October Council meetings. While not labeled explicitly as a "report card", the intent of this summary is to draw out the most frequently referenced economic statisitics pertaining to the crab fisheries, and point users to more detailed presentations of related statistics and other supplemantary information available in the full economic report. In addition, a section is included which provides a synopsis of yearly economic performance in the rationalized crab fisheries in terms of 13 distinct "catch share metrics". These provide a set of consistent indicators to assess various dimensions of economic performance generally applicable to catch share programs, which 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 degree of concentration of ex-vessel revenue among vessel owners (measured using the Gini coefficient). The same metrics are presented for the four current groundfish catch share programs in a similar chapter of the groundfish economic report. These metrics overlap somewhat with information provided elsewhere in the report, but are associated with a national effort under NMFS Office of Science and Technology to develop what might be characterized as an economic "report card" for catch share programs. This is an ongoing effort, with new economic metrics under development to support ongoing monitoring of more challenging dimensions of economic performance and social impacts of catch share approaches to fishery management. Input from the SSC regarding the utility of the metrics reported, and suggestions for additional dimensions of fishery performance

and associated empirical metrics that would more completely satisfy the objective of providing an economic "report card" that would be brief, informative, and timely.

Regarding the SSC's request for retrospective information about the regional distribution of benefits of Alaska fisheries in terms of the location of residence of quota owners, harvesters, crew, and processing workers, several tables and the discussion in the main body of the report provide a degree of spatial disaggregation of relevant economic data, using Alaska, Pacific Northwest, other U.S., or foreign as locational strata where possible. These include: share of ex-vessel landings and revenue by vessel owner location of residence (Table 4.6), annual counts of vessel crew and processing employees by residence (Tables 4.14 and 4.18), and IFQ fisheries owner and crew quota share holdings by QS holder residence (Table 4.34). Suggestions for improvements in the content of the report in this regard would be most appreciated.

*Fishery production and economic value - 2009-2013*

Harvest- and processing sector production statistics by crab fishery, including ex-vessel and first wholesale output, estimated revenue, and average prices are shown in Table 1 for calendar years 2009-2013 and summarized in Figure 1. Across all fisheries managed under the BSAI Crab FMP, the total volume of ex-vessel landings during 2013 was 81.5 million pounds, a 21 percent decrease from the previous year. Processing sector finished production volume during 2013 was 53.5 million pounds aggregated over all BSAI crab species and product forms, a 21 percent decrease over the previous year. Average prices for most BSAI crab produced in 2013 as reported in both sectors declined for the second year from the recent peak 2011 levels, with the result of total gross revenues over all fisheries declining in 2013: \$240[3] million ex-vessel for the year, down from \$294 million for 2012 (-18%), and \$402 million first wholesale revenues (-19% from the previous year).

As of 2013, allowable catch quantities in all BSAI crab fisheries currently open to targeted fishing are fully exploited ($>$ 98% of total allocation landed), and recent inter-annual variation in commercial landings largely reflects the results of stock assessments and the State of Alaska's specified catch limits rather than changes in fishing capacity or exploitation rate. The decrease in aggregate production during 2013 was driven largely by the 26 percent decrease in volume landed in the Bering Sea snow crab (BSS) fishery compared to 2012, with total catch at 65.5 million pounds. Norton Sound red king crab (NSR) landings were 440 thousand pounds, and landings of 5.8 million pounds in Aleutian Islands golden king (AIG) crab fisheries changed only slightly from the previous year. Landings of 8.5 million pounds in Bristol Bay red king (BBR) in 2013 increased 9% over 2012, still nearly 18 percent below the previous 5-year average.

Similar to ex-vessel production, the proportional decrease in processing sector output aggregated over all active crab fisheries was driven by the 43 million pounds of BSS fishery production, declining by 26 percent in volume over the previous year. Finished volume in the BBR fishery of 5.8 million pounds reflects an increase of 9% in 2013, and AIG and BST fisheries produced 3.7 million and 0.82 million pounds of finished volume, respectively.

Ex-vessel and wholesale Alaska crab prices in 2013 showed modest increases in two of the three largest fisheries shown in Table 1. Average prices in both sectors of the BSS fishery increased slightly, to \$2.33 ex-vessel (+3.5%) and \$4.88 first wholesale (+1%) per-pound, and in the AIG fisheries increased slightly, to \$4.05 ex-vessel (+1%) and \$8.33 first wholesale (+5%) per-pound.

[3] All prices are inflation-adjusted to 2013 dollars.

Average price for NSR crab sales were $5.78 exvessel and $9.57 at first wholesale. BBR fishery average ex-vessel price declined by 17 percent to $6.85 per pound, continuing the 23 percent price decline from 2011 to 2012 averages; the average wholesale price reported by processors for BBR declined by 13 percent, to $13.02 per pound for 2013.

The estimated gross revenue value of production in the 2013 BSS fishery decreased in 2013 to $152 million ex-vessel (23%), and $209 million first wholesale (25%), due largely to the decline in production. With declining price in both sectors in the BBR fishery offsetting increased physical production, estimated gross revenues for BBR fell to $58 million ex-vessel (9%) and $74.9 million first wholesale (5%). Estimated revenues in the AIG fisheries remained stable at $23.56 million ex-vessel (1%) and $30.71 million wholesale (+3.36%). The NSR fishery produced gross ex-vessel revenue of $2.56 million, and $3.26 million at first wholesale. The proportional inter-annual variation in gross revenue from 2012 to 2013 was somewhat less than the average degree of variation over the last 15 years in the historically volatile crab fisheries; longer time series for these and other measures of crab fishery performance are available in the full 2013 BSAI Crab Economic Status Report

*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] and depicted graphically in Figure 2. The number of vessels operating in CR fisheries in 2013 declined from 83 to 79, but increased from 114 to 115 across all BSAI FMP crab fisheries. Based on the average (mean) number of crew onboard (as reported in eLandings catch accounting records for crab vessels), there were an estimated 1093 crew positions across all 79 vessels in CR fisheries in 2013. Over the last 5 years, both the aggregate number of vessels and total crew positions have varied contemporaneously with the total size of crab allocations and catch, declining in 2010 and 2011 and increasing in 2012 as BSS allocations were substantially increased. However, variation in number of vessels operating and number of crew positions has not varied proportionally with allocations and catch; for example, changes in crew positions have varied from year-to-year by -14% to +19% in the BSS fishery, compared to much larger annual variations in catch.

Revenue-share payments to crab vessel crew members as a group totaled approximately $31.3 million in 2013, with an additional $14.6 million paid to vessel captains. Over both groups, incomes declined by 20 percent in 2013, reflecting the overall decrease in ex-vessel revenue described above. In addition to revenue-share payments, income is derived by some crew and many captains from royalties for harvesting quota shares held by either the captain or crew. While this may become an increasingly important source of income as opportunities for investment in QS ownership are advanced, there is no evidence to-date that the proportion of CR fishery quota share pools held by crab crew members has changed in recent years, following a small amount of consolidation occurring during the initial years of the program (see NMFS Alaska Region, Restricted Access Management Program, Bering Sea and Aleutian Islands Crab Rationalization Program Report, Fishing Year 2011/12 for information on quota allocation and transfer activity, and other current CR program administration details).

[4]BSAI Crab Economic Data Report (EDR) data are collected for CR fisheries only. The NSR and Pribilof Island golden king (PIG) crab fisheries are managed by the State of Alaska under the FMP, but are not included in the CR program.

Crab processing labor input associated with the IFQ and CDQ fisheries is estimated at nearly 956 thousand hours in 2013, generating slightly greater than $9.9 million in labor income. Most processing facilities that receive crab landings do not exclusively process crab, however, and it may be difficult to attribute crab processing labor to specific employment effects. To some degree, the interannual variation in the measure of crab processing labor hours likely reflects variation in processors' ability to track labor input by species for reporting compliance. 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, total processing labor hours declined across all CR fisheries overall by approximately 24% in 2013, commensurate with the decline in production volume over the same period.

*IFQ Leasing*

This report provides results from the BSAI Crab Rationalization Economic Data Report (EDR) program collection of crab harvest quota allocation lease data associated with 2012 and 2013 calendar year crab fisheries. Table 3 shows aggregated results for crab fishing quota lease volume (in pounds) and cost reported for crab vessels active in 2012 and 2013 calendar year CR fisheries,[5] 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 (CVO) Class A IFQ; catcher vessel owner Class B IFQ and catcher/processor owner (CPO) IFQ; catcher vessel crew IFQ and catcher/processor crew IFQ, and community development quota (CDQ).

The number of vessels reporting quota leases in the 2013 BBR fishery range from 51 vessels leasing CVO Class A shares, to 8 vessels leasing CDQ shares (out of 63 crab vessels active during the 2013 BBR fishery), and from 56 vessels leasing CVO A Class BSS IFQ allocation to 11 vessels leasing CDQ allocation (out of 70 active vessels) in the BSS fishery. Total volume and cost over all vessels leasing the respective quota types during 2013 range from 4.1 million pounds and $18.6 million for BBR CVO Class A IFQ, to 195 thousand pounds and $954 thousand for BBR CVO and CPC crew IFQ allocation; BSS lease volume and cost ranged from 62.9 million pounds and $66.5 million for CVO A Class IFQ to 3.4 million pounds and $3.9 million for crew share IFQ allocation.

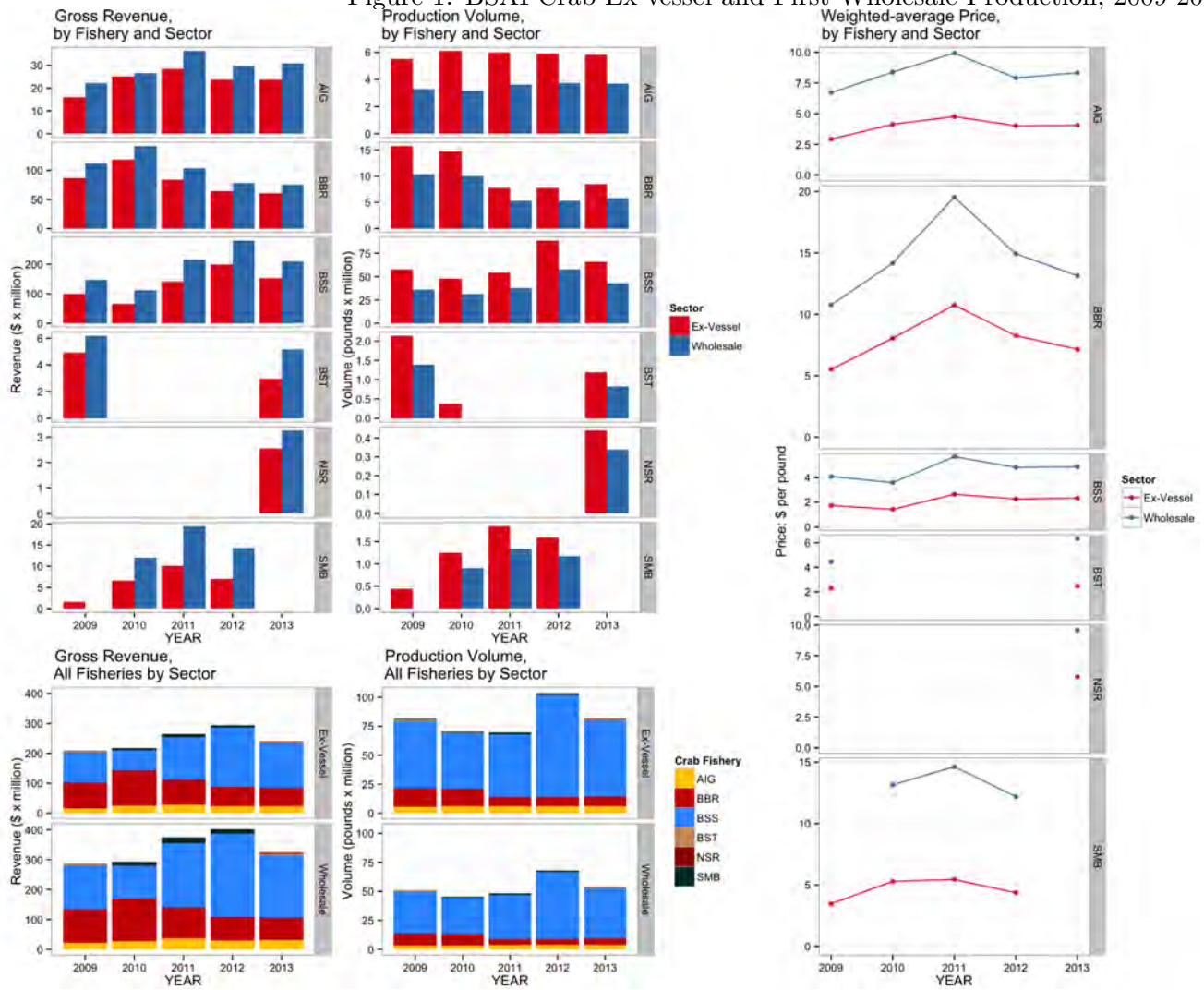
Per-vessel averages (median)[6] for 2013 BBR quota leased volume and cost ranged from 79 thousand pounds and $343 thousand per vessel for BBR CVO A Class allocation, to 10,000 pounds and $47,000 for BBR CVO and CPO crew IFQ; BSS per-vessel averages ranged from 487 thousand pounds and $514,000 per vessel for per vessel CVO- A Class allocation to 78 thousand pounds and $95,000 for BSS crew share allocation.

[5]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.

[6]Differences between median and mean average values shown in Table 3 are most pronounced in the per-vessel pounds and cost statistics; this primarily reflects the relative concentration of high-volume quota leasing activity by 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 (median) lease prices and lease rates in the BBR fishery shown in Table 3 range from from $4.86 per pound CDQ allocation (65% of ex-vessel value; see table footnote regarding calculation of lease rate), to $4.49 per pound (64% of ex-vessel value) for BBR CVO A Class allocation. Median lease price and rate in the BSS fishery ranged from $1.24 for CDQ allocation (54% of ex-vessel value) to $1.07 per pound for BSS CVO A Class IFQ (46% of ex-vessel). 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.

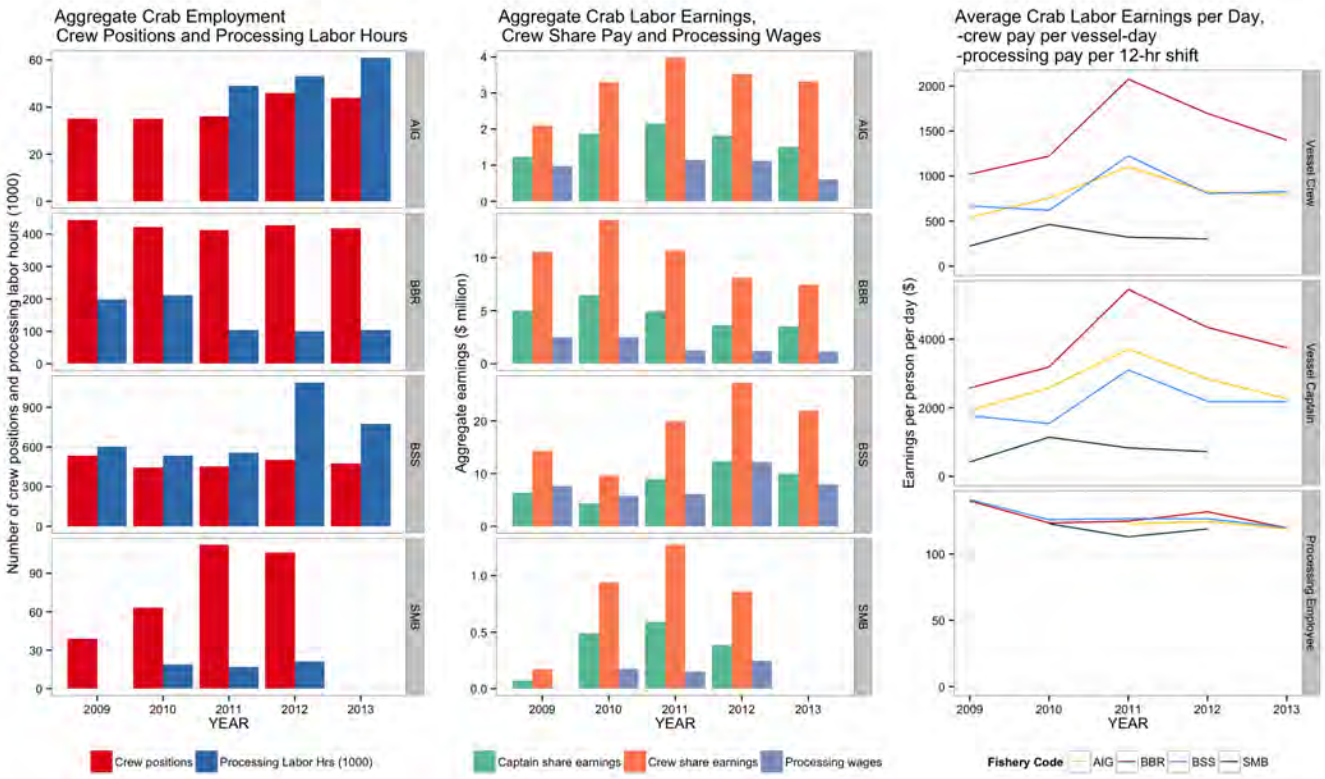
Figure 1: BSAI Crab Ex-vessel and First Wholesale Production, 2009-2013




***Source:*** *ADF&G fish tickets, eLandings, CFEC pricing, ADF&G Commercial Operator's Annual Report, NMFS AFSC BSAI Crab Economic Data Report (EDR) database. See Table 1 footnotes for details.*

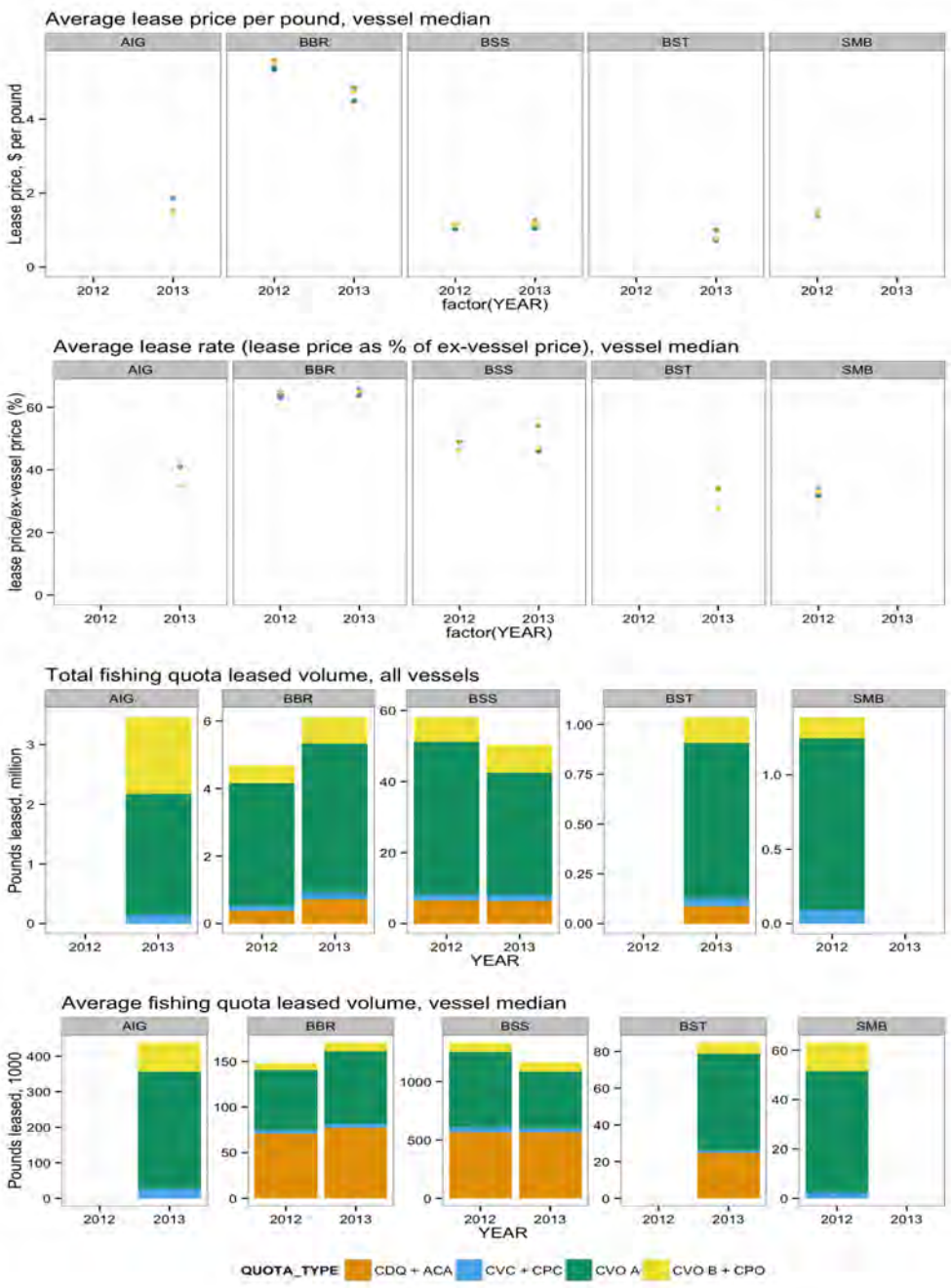
(a) Revenue, (b) Volume, and (c) Weighted Average Price, 2009-2013; gross revenue and production volume by sector are presented in the upper pair of panels by individual crab fishery for comparison of within-fishery variation over time, and summarized over all fisheries in the lower panels to illustrate the variation in aggregate values and relative contribution of each fishery over time. Figure does not display information for PIG fishery due to confidentiality. See Table 1 footnotes for data sources and details.

Figure 2: Harvest and Processing Employment and Compensation, Selected Crab Fisheries, 2009-2013




***Source:*** *NMFS AFSC BSAI Crab Economic Data Report (EDR) database; ADF&G Shellfish Observer Program, Confidential Interview Form (CIF) database. See Table 2 footnotes for details.*

Figure 3: Crab Harvest Quota Lease Activity; Lease Volume, Price, and Rate, Selected Crab Fisheries, 2012-2013




***Source:*** *NMFS AFSC BSAI Crab Economic Data Report (EDR) database; ADF&G Shellfish Observer Program, Confidential Interview Form (CIF) database. See Table 3 footnotes for details.*

Table 1: BSAI Crab Harvesting and Processing Sector Output–Production Volume, Gross Revenue, and Average Price[a]

| | | Harvesting Sector: Ex-Vessel Statistics[a] | | | | | | | Processing Sector:First Wholesale Statistics[b] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Vessels | CFEC permits | Landed volume 1000t | Landed volume million lbs | Buyers | Gross revenue $million | Average price $/lb | Plants | Finished volume, 1000t | Finished volume, million lbs | Gross revenue $million | Average price $/lb |
| All | 2009 | 112 | 242 | 37.00 | 81.56 | 27 | $208.80 | - | 22 | 23.16 | 51.06 | $287.15 | - |
| | 2010 | 102 | 232 | 31.88 | 70.29 | 24 | $217.48 | - | 19 | 20.65 | 45.53 | $292.96 | - |
| | 2011 | 102 | 235 | 31.61 | 69.68 | 27 | $264.69 | - | 18 | 21.85 | 48.17 | $374.86 | - |
| | 2012 | 113 | 284 | 46.97 | 103.55 | 26 | $294.05 | - | 20 | 30.84 | 68.00 | $401.58 | - |
| | 2013 | 114 | 233 | 36.95 | 81.45 | 28 | $242.11 | - | 22 | 24.27 | 53.50 | $323.60 | - |
| AIG | 2009 | 5 | 13 | 2.50 | 5.51 | 9 | $16.11 | $2.92 | 6 | 1.50 | 3.30 | $22.12 | $6.71 |
| | 2010 | 5 | 13 | 2.76 | 6.09 | 9 | $25.17 | $4.13 | 5 | 1.44 | 3.17 | $26.54 | $8.38 |
| | 2011 | 5 | 13 | 2.72 | 6.00 | 14 | $28.55 | $4.76 | 7 | 1.65 | 3.64 | $36.20 | $9.93 |
| | 2012 | 6 | 14 | 2.69 | 5.92 | 14 | $23.76 | $4.01 | 8 | 1.71 | 3.76 | $29.71 | $7.90 |
| | 2013 | 6 | 14 | 2.64 | 5.81 | 13 | $23.56 | $4.05 | 7 | 1.67 | 3.69 | $30.74 | $8.33 |
| BBR | 2009 | 70 | 86 | 7.16 | 15.78 | 16 | $87.09 | $5.52 | 13 | 4.72 | 10.40 | $111.96 | $10.76 |
| | 2010 | 65 | 79 | 6.68 | 14.73 | 17 | $118.59 | $8.05 | 14 | 4.55 | 10.03 | $141.97 | $14.16 |
| | 2011 | 62 | 71 | 3.53 | 7.79 | 18 | $83.71 | $10.75 | 14 | 2.41 | 5.30 | $103.60 | $19.53 |
| | 2012 | 64 | 74 | 3.54 | 7.80 | 17 | $64.49 | $8.26 | 12 | 2.39 | 5.27 | $78.70 | $14.93 |
| | 2013 | 63 | 73 | 3.86 | 8.52 | 17 | $60.89 | $7.15 | 11 | 2.61 | 5.75 | $75.56 | $13.14 |
| BSS | 2009 | 77 | 103 | 26.16 | 57.68 | 18 | $99.13 | $1.72 | 15 | 16.31 | 35.97 | $146.88 | $4.08 |
| | 2010 | 68 | 87 | 21.70 | 47.84 | 13 | $67.10 | $1.40 | 11 | 14.25 | 31.41 | $112.42 | $3.58 |
| | 2011 | 68 | 88 | 24.52 | 54.05 | 16 | $142.38 | $2.63 | 14 | 17.18 | 37.89 | $215.59 | $5.69 |
| | 2012 | 72 | 109 | 40.02 | 88.23 | 16 | $198.85 | $2.25 | 13 | 26.21 | 57.79 | $278.85 | $4.82 |
| | 2013 | 70 | 88 | 29.70 | 65.49 | 15 | $152.15 | $2.32 | 12 | 19.46 | 42.90 | $208.88 | $4.87 |
| BST | 2009 | 18 | 24 | 0.97 | 2.14 | 11 | $4.91 | $2.30 | 10 | 0.63 | 1.39 | $6.19 | $4.46 |
| | 2010 | 4 | 5 | 0.17 | 0.37 | 7 | * | * | 7 | * | * | * | * |
| | 2013 | 22 | 25 | 0.54 | 1.19 | 12 | $2.94 | $2.47 | 9 | 0.37 | 0.82 | $5.16 | $6.33 |
| NSR | 2009 | 24 | 29 | * | * | 3 | * | * | 3 | * | * | * | * |
| | 2010 | 24 | 37 | * | * | 3 | * | * | 2 | * | * | * | * |
| | 2011 | 25 | 38 | * | * | 2 | * | * | 2 | * | * | * | * |
| | 2012 | 30 | 64 | * | * | 3 | * | * | 3 | * | * | * | * |
| | 2013 | 34 | 52 | 0.20 | 0.44 | 5 | $2.56 | $5.78 | 5 | 0.15 | 0.34 | $3.26 | $9.57 |

Continued on next page.

Table 1: Continued

| | | Harvesting Sector: Ex-Vessel Statistics[a] | | | | | | | Processing Sector:First Wholesale Statistics[b] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Vessels | CFEC permits | Landed volume 1000t | Landed volume million lbs | Buyers | Gross revenue $million | Average price $/lb | Plants | Finished volume, 1000t | Finished volume, million lbs | Gross revenue $million | Average price $/lb |
| PIG | 2010 | 1 | 1 | * | * | 2 | * | * | 2 | * | * | * | * |
| | 2011 | 2 | 2 | * | * | 1 | * | * | 1 | * | * | * | * |
| | 2012 | 1 | 1 | * | * | 1 | * | * | 1 | * | * | * | * |
| | 2013 | 1 | 1 | * | * | 1 | * | * | 1 | * | * | * | * |
| SMB | 2009 | 7 | 7 | 0.20 | 0.45 | 6 | $1.56 | $3.46 | 2 | * | * | * | * |
| | 2010 | 11 | 14 | 0.57 | 1.25 | 9 | $6.63 | $5.29 | 5 | 0.41 | 0.91 | $12.02 | $13.15 |
| | 2011 | 18 | 23 | 0.84 | 1.85 | 11 | $10.06 | $5.44 | 6 | 0.60 | 1.33 | $19.48 | $14.62 |
| | 2012 | 17 | 22 | 0.72 | 1.59 | 11 | $6.96 | $4.36 | 6 | 0.53 | 1.18 | $14.32 | $12.18 |

**Notes:** Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2013-equivalent value. Information suppressed for confidentiality where indicated by "*", and data not available 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.

**Source:** ADF&G fish ticket data; eLandings; CFEC ex-vessel pricing;ADF&G Commercial Operator's Annual Report; NMFS AFSC BSAI Crab Economic Data Report (EDR) database

Table 2: CR Program Fisheries Crew and Processing Sector Employment and Earnings

| | | Crew positions[a] | | | Crew share | | Captain share | | Processing labor hours | | | Processing labor payment | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Obs | Total | Vessel Mean | Total $million | Vessel median | Total $million | Vessel median $1,000 | Obs | Total 1,000 hrs | Plant median 1000 hrs | Total $million | Plant median, $1,000 | Median $/hour |
| All | 2009 | 89 | 1,155 | - | $27.77 | - | $13.03 | - | 17 | 828.29 | - | $11.44 | - | - |
| | 2010 | 79 | 964 | - | $27.44 | - | $13.15 | - | 15 | 771.12 | - | $8.56 | - | - |
| | 2011 | 77 | 1,014 | - | $35.88 | - | $16.64 | - | 16 | 724.96 | - | $8.68 | - | - |
| | 2012 | 83 | 1,081 | - | $39.80 | - | $18.25 | - | 13 | 1,261.90 | - | $14.73 | - | - |
| | 2013 | 81 | 1,093 | - | $33.14 | - | $15.24 | - | 12 | 955.77 | - | $9.91 | - | - |
| AIG | 2009 | 5 | 35 | 7.00 | $2.10 | $423.31 | $1.24 | $228.30 | 4 | * | * | $0.97 | $151.80 | * |
| | 2010 | 5 | 35 | 7.00 | $3.29 | $664.24 | $1.87 | $286.54 | 3 | * | * | * | * | * |
| | 2011 | 5 | 36 | 7.20 | $3.98 | $673.98 | $2.16 | $358.52 | 6 | 48.97 | 4.79 | $1.14 | $76.93 | $10.23 |
| | 2012 | 6 | 46 | 7.67 | $3.53 | $643.88 | $1.82 | $322.58 | 7 | 53.16 | 2.60 | $1.13 | $60.37 | $10.38 |
| | 2013 | 6 | 44 | 7.33 | $3.31 | $533.87 | $1.50 | $272.48 | 6 | 61.09 | 5.96 | $0.61 | $61.28 | $9.93 |
| BBR | 2009 | 70 | 443 | 6.33 | $10.54 | $134.83 | $4.99 | $70.76 | 10 | 198.90 | 16.06 | $2.49 | $143.65 | $11.67 |
| | 2010 | 65 | 422 | 6.48 | $13.55 | $200.78 | $6.45 | $103.83 | 11 | 211.56 | 20.09 | $2.48 | $200.95 | $10.29 |
| | 2011 | 62 | 413 | 6.66 | $10.69 | $155.15 | $4.96 | $84.39 | 12 | 104.38 | 6.71 | $1.24 | $75.19 | $10.40 |
| | 2012 | 64 | 428 | 6.68 | $8.12 | $103.28 | $3.66 | $54.97 | 10 | 100.36 | 6.51 | $1.20 | $68.69 | $10.99 |
| | 2013 | 63 | 418 | 6.63 | $7.46 | $93.39 | $3.55 | $52.58 | 8 | 103.96 | 10.00 | $1.18 | $93.25 | $9.98 |
| BSS | 2009 | 77 | 536 | 6.96 | $14.36 | $163.96 | $6.36 | $81.10 | 10 | 600.07 | 58.41 | $7.66 | $351.05 | $11.76 |
| | 2010 | 68 | 444 | 6.53 | $9.65 | $127.75 | $4.33 | $61.12 | 9 | 534.17 | 50.90 | $5.83 | $385.54 | $10.49 |
| | 2011 | 68 | 453 | 6.66 | $19.94 | $281.31 | $8.93 | $130.54 | 12 | 554.86 | 45.69 | $6.15 | $356.62 | $10.56 |
| | 2012 | 72 | 502 | 6.97 | $27.29 | $378.30 | $12.38 | $177.62 | 11 | 1,087.26 | 77.94 | $12.16 | $620.40 | $10.55 |
| | 2013 | 70 | 476 | 6.79 | $21.93 | $282.13 | $9.98 | $140.77 | 10 | 774.12 | 63.55 | $7.96 | $479.78 | $10.00 |
| BST | 2009 | 14 | 102 | 7.29 | $0.60 | $31.03 | $0.37 | $17.49 | 7 | 29.32 | 4.27 | $0.32 | $37.45 | $11.25 |
| | 2010 | 4 | * | * | * | * | * | * | 5 | 6.43 | 0.70 | $0.07 | $7.30 | $10.50 |
| | 2013 | 22 | 156 | 7.09 | $0.44 | $14.44 | $0.21 | $7.43 | 6 | 16.58 | 1.86 | $0.16 | $15.52 | $9.59 |
| SMB | 2009 | 7 | 39 | 5.57 | $0.17 | $19.81 | $0.07 | $8.54 | 2 | * | * | * | * | * |
| | 2010 | 11 | 63 | 5.73 | $0.94 | $74.22 | $0.49 | $44.37 | 5 | 18.96 | 0.40 | $0.18 | $4.17 | $10.24 |
| | 2011 | 17 | 112 | 6.56 | $1.27 | $59.30 | $0.59 | $32.13 | 6 | 16.75 | 0.84 | $0.15 | $8.04 | $9.42 |
| | 2012 | 17 | 106 | 6.24 | $0.86 | $44.59 | $0.39 | $22.72 | 6 | 21.12 | 0.76 | $0.25 | $7.41 | $9.91 |

**Notes:** Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2013-equivalent value. Information suppressed for confidentiality where indicated by "*", and data not available 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database, and Crew positions from eLandings.

Table 3: Crab Harvest Quota Lease Activity, Volume, Cost, and Average Lease Prices and Rates; CR Program Fisheries

| | | | Vessels[a] | Pounds Leased (1000lbs) | | | Cost ($1000) | | | Average Lease Price ($/pound)[b] | | Average Lease Rate (Percent of ex-vessel value)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median | Mean | Total | Median | Mean | Median | Mean | Median |
| AIG | CDQ + ACA | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 2 | * | * | * | * | * | * | * | * | * |
| | CVC + CPC | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 5 | 151.06 | 27.36 | 25.18 | 306.44 | 44.72 | $51.07 | $1.86 | $1.89 | 0.41% |
| | CVO A | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 5 | 2,026.23 | 327.87 | 405.25 | 3,586.87 | 573.10 | $717.38 | $1.50 | $1.65 | 0.35% |
| | CVO B + CPO | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 6 | 1,284.80 | 83.15 | 142.76 | 1,828.34 | 227.00 | $203.15 | $1.48 | $1.72 | 0.35% |
| BBR | CDQ + ACA | 2012 | 5 | 368.62 | 70.68 | 73.72 | 2,254.79 | 447.32 | $450.96 | $5.58 | $6.14 | 0.64% |
| | | 2013 | 8 | 713.42 | 77.40 | 89.18 | 3,440.46 | 364.23 | $430.06 | $4.86 | $4.81 | 0.65% |
| | CVC + CPC | 2012 | 36 | 171.60 | 4.24 | 4.52 | 927.41 | 21.93 | $24.41 | $5.39 | $5.43 | 0.63% |
| | | 2013 | 37 | 198.96 | 4.52 | 4.85 | 973.43 | 21.61 | $23.74 | $4.77 | $4.92 | 0.66% |
| | CVO A | 2012 | 50 | 3,618.97 | 65.48 | 72.38 | 18,415.90 | 315.77 | $368.32 | $5.34 | $5.48 | 0.64% |
| | | 2013 | 51 | 4,425.51 | 78.75 | 86.78 | 20,263.19 | 343.39 | $397.32 | $4.49 | $4.64 | 0.64% |
| | CVO B + CPO | 2012 | 42 | 539.10 | 7.60 | 11.72 | 3,011.82 | 43.02 | $66.93 | $5.52 | $5.90 | 0.65% |
| | | 2013 | 45 | 777.86 | 10.07 | 15.56 | 3,700.31 | 47.23 | $74.01 | $4.74 | $4.64 | 0.65% |
| BSS | CDQ + ACA | 2012 | 11 | 6,463.57 | 563.35 | 587.60 | 7,534.51 | 684.46 | $684.96 | $1.16 | $1.17 | 0.49% |
| | | 2013 | 11 | 6,409.21 | 563.98 | 582.66 | 7,985.71 | 747.64 | $725.97 | $1.24 | $1.24 | 0.54% |
| | CVC + CPC | 2012 | 39 | 1,879.88 | 47.96 | 45.85 | 2,073.23 | 52.03 | $51.83 | $1.13 | $1.15 | 0.46% |
| | | 2013 | 41 | 1,767.02 | 35.03 | 40.16 | 2,080.07 | 39.90 | $47.27 | $1.13 | $1.23 | 0.46% |
| | CVO A | 2012 | 55 | 42,796.16 | 640.32 | 778.11 | 43,992.07 | 678.51 | $799.86 | $1.03 | $1.03 | 0.46% |
| | | 2013 | 56 | 34,352.58 | 486.63 | 613.44 | 36,888.66 | 514.12 | $658.73 | $1.06 | $1.07 | 0.46% |
| | CVO B + CPO | 2012 | 47 | 6,989.61 | 83.97 | 131.88 | 8,070.30 | 103.66 | $152.27 | $1.12 | $1.19 | 0.46% |
| | | 2013 | 50 | 7,740.91 | 78.48 | 133.46 | 9,536.70 | 94.59 | $164.43 | $1.16 | $1.18 | 0.47% |

Continued on next page.

Table 3: Continued

| | | | | Pounds Leased (1000lbs) | | | Cost ($1000) | | | Average Lease Price ($/pound)[b] | | Average Lease Rate (Percent of ex-vessel value)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Vessels[a] | Total | Median | Mean | Total | Median | Mean | Median | Mean | Median |
| BST | CDQ + ACA | 2013 | 5 | 88.01 | 24.87 | 17.60 | 74.27 | 15.64 | $14.85 | $1.00 | $1.04 | 0.34% |
| | CVC + CPC | 2013 | 10 | 41.62 | 1.10 | 3.20 | 31.56 | 1.16 | $2.43 | $0.79 | $0.74 | 0.28% |
| | CVO A | 2013 | 16 | 776.65 | 52.73 | 48.54 | 543.84 | 25.23 | $33.99 | $0.73 | $0.66 | 0.28% |
| | CVO B + CPO | 2013 | 13 | 130.35 | 6.21 | 8.15 | 119.31 | 4.50 | $7.46 | $0.79 | $0.84 | 0.28% |
| SMB | CDQ + ACA | 2012 | 3 | * | * | * | * | * | * | * | * | * |
| | CVC + CPC | 2012 | 9 | 94.70 | 2.48 | 10.52 | 46.53 | 5.54 | $5.17 | $1.47 | $1.66 | 0.34% |
| | CVO A | 2012 | 17 | 1,149.28 | 49.07 | 67.61 | 1,683.09 | 68.36 | $99.01 | $1.42 | $1.66 | 0.32% |
| | CVO B + CPO | 2012 | 10 | 143.73 | 11.56 | 11.06 | 214.51 | 18.54 | $16.50 | $1.47 | $1.52 | 0.33% |

**Notes:** Other fishery data is not shown due to insufficient observations. Lease data shown represent arms length lease transactions reported by quota purchasers in the EDR.

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), and 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.

[a] 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.

[b] 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.

[c] 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.

**Source:** NMFS AFSC BSAI Crab Economic Data (preliminary findings for 2013 subject to revision following completion of data validation).

## Contents

# 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 ac 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 cra with processing activity components) |
| SFP | Shoreside Processor and Stationary Floating Processor (collectively denotes shore-based crab process |
| SP | Shoreside Processor |
| SFP | Stationary Floating Processor |
| TAC | Total Allowable Catch |

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# 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 81.5 million pounds (36.6 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) during 2013 represented 0.85 percent of the total volume of U.S. commercial seafood landings, but accounted for 4.1 percent of total ex-vessel value; with respect to Alaska alone, these fisheries account for 1.46 percent of catch volume and 11.9 percent of ex-vessel value. Across all fisheries managed under the FMP, total volume of commercial ex-vessel landings in 2013 was 81.5 million pounds, with an estimated gross ex-vessel revenue value of $242 million. Total finished pounds reported by processors in 2013 across all FMP crab species and product forms was 53.5 million pounds, with an estimated first wholesale value of $324 million (F.O.B Alaska). Of the 10 crab stocks managed under the FMP, six were open to targeted fishing during 2013, prosecuted by an active fleet of approximately 114 vessels, and landed and processed at 22 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 1093 fishing crew positions across 81 active vessels in 2013, with labor share earnings totaling $33.1 million paid to deck crew members and $15.2 million to captains. Processing these landings for the first wholesale market is estimated to have accounted for some 965 thousand hours of line labor in 2013, generating $9.9 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.

Chapter 2 of this report presents summary 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.

Chapter 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.

### 1.1. 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.

### *1.1.1 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`

### 1.2. 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 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. [1]

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.

### 1.3. 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.

[1] 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

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 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:

*Abbreviations and notations used in tables and figures*

| | |
|---|---|
| * | Data suppressed to prevent disclosure of confidential information |
| n/a or "-" | 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 for measure of interest | Number of observations with value $> 0$ |
| sd | Standard deviation |
| $ | US dollars; inflation-adjusted to 2013-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, 2013), or crab fishery year (spanning July-June and denoted, for example, as 2012/13). The current report summarizes information available in primary databases to-date, largely comprising data reported through 2014 for the 2013 calendar year and 2013/2014 crab season.

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.

## 2.1. Economic Output

### *2.1.1 Annual TAC/GHL, Landings, Deadloss, and Finished Product Volume*

Annual TAC/GHL levels since 2005/06 are reported by crab fishery in Table 4.1 and summarized graphically in Figure 3.1. 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 level represented an extreme (a lower extreme in the case of BBR, and an upper extreme for BSS) over the recent (post-rationalization) period. 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 to 66.35 million pounds for the 2012/13 season

(-25% from the previous season) and 54 million pounds in 2013/14 (-19%). 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 TACs have increased slightly in the most recent seasons, to 8.6 million pounds for 2013/14. 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 eastern (EBT) component of the Bering Sea Tanner crab fishery from 2010/11 through 2012/13, of the western component from 2009/10 through 2012/13 (both reopened for 2013/14), and reopening of the St. Matthew Island blue king crab fishery beginning in 2009/10 and closure again for 2013/14, have been significant changes in the economic status of the crab fishery overall.

Table 4.4 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 0.05-1.5% of landings, and are highest in the AIG fisheries, ranging from 0.3-3.5%, with a single episode of higher deadloss in 2010 reaching 16.3% of the 124 thousand pounds of crab landed on CVC and CPC (crew "C" share) IFQ. 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. The unique episode in the 2010 AIG fishery notwithstanding, 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 3.2 summarizes 1998 to 2013 annual (calendar year) values for total landed live catch and gross ex-vessel revenue (detailed in Tables 4.5 to 4.8 ), and finished production volume and first wholesale value (Tables 4.9 to 4.11), 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 3.3 summarizes the corresponding time series of ex-vessel and first wholesale prices by crab fishery, represented as weighted average price per pound[1].

[1]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 $\frac{\sum_i r_i}{\sum_i v_i}$, 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 $p = \frac{\sum_i v_i p_i}{\sum_i v_i} = \frac{\sum_i v_i \left(\frac{r_i}{v_i}\right)}{\sum_i v_i} = \frac{\sum_i r_i}{\sum_i v_i}$, where $p_i$ is the individual price observation for the $i^{th}$ 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

Across all fisheries managed under the BSAI Crab FMP, the total volume of ex-vessel landings during 2013 was 81.5 million pounds (37 thousand $t$), a 22 percent decrease from the previous year. As of 2013, 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. The decrease in aggregate ex-vessel production during 2013 was driven largely by the 65.5 million pounds (29.7 thousand $t$) of Bering Sea snow crab (BSS) landed, a 25 percent decrease in volume from the previous year. Landings of 5.8 million pounds (2.63 thousand $t$) in Aleutian Islands golden king (AIG) were changed only slightly from the previous year (-2%), and 8.5 million pounds (3.86 thousand $t$) in Bristol Bay red king (BBR) fisheries were increased by 9 percent. Norton Sound red king crab (NSR) landings decreased by 6% to 440,000 pounds (0.19 thousand $t$) landed, and the BST fisheries combined produced 1.19 million pounds (530 thousand $t$) during the first open season since 2010.

Similar to ex-vessel production, the 21 percent proportional decrease in processing sector output to 53.5 million finished pounds (24.3 thousand $t$), aggregated over all active crab fisheries, was driven by the 15% decline in finished production in the BSS fishery to 42.9 million pounds (19.5 thousand $t$). Finished volume in the BBR fishery of 5.8 million pounds (2.6 $t$) was a moderate (9%) increase for 2012, still near the historical low for the period since 1998. AIG production of 3.7 million pounds (1.67 thousand $t$) was a slight decrease from 2012 output.

### *2.1.2 Ex-vessel and First Wholesale Prices and Revenue Value of Production*

Ex-vessel and first wholesale estimated prices in three of the five Alaska crab fisheries shown in Figure 3.3 displayed modest increases in 2013, while the BBR fishery average ex-vessel price declinced substantially for a second year in 2013, falling by 13 percent to $7.15 per pound, and declining by 12 percent at wholesale to $13.14 per finished pound for 2013. Golden king crab average ex-vessel price increased by 1% to $4.05 per pound, and increased by 5% in the wholesale sector to $8.33 per pound. Average price in the BSS fishery increased slightly from 2012, to $2.32 per pound exvessel, and $4.87 per pound at first wholesale (up 1% and 3%, respectively). Average ex-vessel price for landed NSR crab continued a gradual five-year upward trend, reaching $5.78 per pound, 1.8% over the 2012 average value[2].

The estimated gross revenue value of production in the 2013 BSS fishery declined to $152 million ex-vessel (-23% from the 2012 level), and $209 million first wholesale (-25%), commensurate with the decline in in physical output in the fishery. Similalrly, with both physical output and price in both sectors of the AIG fisheries holding nearly constant, estimated gross revenues for AIG decreased slightly to $23.6 million ex-vessel (-1%) and increased slightly to $30.7 million first wholesale (+3%). The more significant price declines in the BBR fishery resulted in decreased ex-vessel gross revenue to an estimated $60.9 million (-6%), and estimated first wholesale revenue fell to $75.6 million (-4%). The NSR fishery decline in production was only partially offset by the increase in ex-vessel price, combining to decrease gross ex-vessel revenue to an estimated $2.56 million (-9%).

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.

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

As illustrated in both Figure 3.2 and 3.3, the relative magnitude of volume, revenue, and price statistics between harvesting and processing sectors is generally consistent from year to year for the two largest CR fisheries (BBR and BSS), particularly since rationalization in 2005, and to a somewhat lesser degree in the AIG fishery. 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 in 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 47.6 in 2013.

Figure 3.4 compares 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 4.8 for source data and additional detail). In contrast to the weighted average price statistics shown in Figure 3.3 and other tables, price statistics illustrated in Figure 3.4 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[3].

Production volume, value, and price statistics for the processing sector summarized in Figures 3.2 and 3.3 are displayed by CR program fishery in Table 4.9. Similar statistics for aggregate statewide processed crab production by species is presented in Table 4.10, disaggregated by primary product type (whole crab, sections, and other) in Table 4.11. 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.

## 2.2. Income and Employment

### *2.2.1 Processing Sector Employment*

Tables 4.16 and 4.17 present data on crab processing labor employment and wages associated with the IFQ and CDQ fisheries. It is estimated that nearly 956 thousand hours of processing labor was expended on crab production in 2013, down from 1.26 million hours in 2012 (-24%). Crab processing generated slightly more than $9.91 million in labor income, a decline of 33% from $14.73 million in 2012. The trend in processing labor input as reported in the BSAI Crab Economic

[3]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.

Data Report (EDR) indicates general consistency with catch and production volume fluctuations, although variation in annual aggregate statstics on processing labor input and earnings in the 2011 - 2013 AIG fisheries have not corresponded to changes in aggregate volume of processing output. Total estimated processing labor hours in the 2013 AIG fishery increased by 15% to 61 thousand hours, concurrent with a slight decrease in production volume, while labor earnings in the fishery declined by 53% to $610 thousand in aggregate, with median hourly wage dropping by $0.45 to $9.93 per hour. As shown in Figure 3.5, estimated daily wage rates (prorated, based on an assumed 12-hour shift) exhibited some increases in 2011 and 2012, but have generally declined over the 2005-2013 period. It should be noted that 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 may be influenced by production activity and working conditions in other fisheries, including the relative amount of overtime labor and associated wages generated, which may influence estimates of average earnings and wage rates.

Table 4.18 reports the total number of individuals crab processing workers employed by participaing crab plants, by location of residence. The total count of processing employees reported, aggregated over all plants, decreased by 5% in 2013 to 3,133. The proporation of Alaska and Northwest state (Oregon, Washington, and Idaho) residents is typically about even, with 25-30% of processing workers reported identified in each category, the remaining 40-50% identified as residents of other U.S. states, and less than 1% identified as non-U.S. residents. The relative proportion of Alaska residents employed declined to 20% of the total of 3,291 employees during 2012, a low for the 2005-2013 period, but returned to the typical range with 932 Alaska residents of the total 3,133 (30%), compared to 30% NW residents and 40% all other U.S. states.

Employment and payroll expenditures for personnel other than processing line workers (supervisory and administrative personnel) in the processing sector are presented in Table 4.21 for the 1998/2001/2004 baseline period through 2011, and for 2012-2013[4]. The number of individuals employed by plants that actively processed in crab fisheries in 2013 increased by 31 to 1,459, despite the one fewer plant operating than the 13 plants active in 2012. Total wage and salary expenditures for supervisory and administrative personnel reported over all 12 plants in 2013 were $56.3 million, increasing slightly from $53.5 million in 2012.

### *2.2.2 Harvest Sector 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 crew participants. Overall vessel participation across BSAI crab fisheries has largely stabilized since 2009/10 near the most recent total of 81 fishing vessels prosecuting the IFQ and CDQ fisheries. A summary of selected indicators from the most recent employment and labor earnings data available for CR program fisheries are presented in Tables 4.12 to 4.19 and summarized in Figures 3.5 and 3.6. Two primary data sources are used to compute employment statistics for the harvesting sector. The eLandings catch accounting system

[4] For the 2005-2011 period, non-processing labor expense was reported specific to crab fishery operations; beginning in 2012, these data elements were eliminated in the catcher-processor data collection and revised in the shoreside processor EDR to collect the information with respect to annual employment and payroll cost for non-processing labor employed at the pricessing plant. As such, statistics reported for the baseline period through 2011 are not comparable to the figures reported for 2012 and subsequent years.

collects trip-level information on the size of the crew onboard a vessel at each landing. These data provide 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[5]. 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 4.14 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 2013 declined from 83 to 81, with 114 distinct vessels participating across all BSAI crab fisheries (Table 4.2). Based on the average (mean) number of crew onboard during each of the respective fisheries (as reported in eLandings catch accounting records for crab vessels), there were an estimated 1,093 crew positions across all vessels in CR fisheries in 2013, compared to 1,081 in 2012.[6] With 63 vessels fishing in the 2013 BBR fishery, one less than in 2012, and 70 in the BSS fishery (two fewer than in 2012), there were a total of 418 crew positions in the BBR fishery and 476 in the BSS fishery for 2013, 10 and 26 fewer than in 2012, respectively. For all vessels that participated in one or more CR fisheries in 2012, 669 individual captains and crew members were identified by license or permit number, 54 fewer than reported for 2012 (Table 4.15).[7] Of the 576 commercial crew license holders participating in CR crab fisheries during 2013, 188 (33%), and 24 of 93 (26%) CFEC gear operator permit holders, were identified as Alaska state residents.

Total labor payments[8] to crab vessel captains and crews totaled $15.24 million and $33.14 million during 2013, respectively, declining by approximately 17% in both groups from 2012 earnings (Figure 3.5 and Table 4.12). The aggregate drop in labor earnings over all CR fisheries reflected the general decline in gross ex-vessel earnings, with captain and crew labor earnings of $10 million and $22 million, respectively, in the 2013 BSS fishery. Captain and crew and payments in the golden king crab fisheries totaled $1.5 million and $3.3 million, respectively, declining by 18% and 6% from 2012 levels. Total captain and crew earnings in the 2013 BBR fishery declined by 8% and 3%, to $3.6 and $7.46 million, respectively.

As shown in Figure 3.5 (right panel), average daily earnings for crew and captains in the AIG and BBR fisheries declined for a second year in 2013 from peak levels observed in both fisheries in 2011,

[5]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 3.5 and Table 4.13 show counts of distinct crew participants through 2011 only.

[6]This figure counts positions in each fishery separately for a given vessel, noting that the same crew member may work two or more fisheries on the same vessel

[7]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.

[8]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).

while average daily earnings in the BSS fishery remained steady for captains and increased slightly for crew [9]. In the AIG and BBR fisheries, total active days increased from 2012 by approximately 20 and 100 days, respectively, and the reduction in ex-vessel landings and gross earnings during 2013 were thus not offset by reduced vessel days at sea. In contrast, total days active in the BSS fishery during 2013 declined to 4,581 from 5,665 in 2012, with the result of maintaining or slightly improving daily pro-rata labor earnings despite the substantial decline of aggregate earnings in the fishery for 2013.

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 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 3.6 (summarizing results in Tables 4.12 and 4.19). 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[10], but vessel owners reported an average 40% net share percentage over all fisheries in which they participated as the basis for crew settlement payments (Table 4.19). 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 2005-2013 period. As illustrated in Figure 3.6, both net- and gross-share metrics have remained largely stable over the post-rationalization period; median net-share as reported for

[9] See Figure 3.12 and Table 4.20 and associated footnotes for details on data sources for vessel activity-days used for daily pro-rata earnings calculations.

[10] 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 a 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.

2005-2011 for captains remained at 12-14%, and crews at 26-27% in both the BBR and BSS fisheries. Median gross-share percentages declined somewhat over the same period, in the BBR fishery, from 23% combined captain and crew in 2005 to 18% in 2013; 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 20% in 2013.

The crab-weight equivalent pay index presented in Table 4.12 and Figure 3.6 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[11]. 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 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 Table 4.12 and Figure 3.6 for the full 1998-2013 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 3.3), 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 varied between 97 thousand to 104 thousand pounds (median per-vessel) in the 2009-2011 BSS fishery, concurrent with a moderate increase in prices and flat production. The index increased to 163 thousand pounds for 2012 and 120 thousand pounds in 2013, as ex-vessel price again declined, while physical production increased in 2012 and declined again in 2013. In contrast, the index for the BBR fishery declined over the 2008-2012 period from 25 thousand pounds to 13 thousand pounds in 2013, compared 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 2005-2013, 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.

[11]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.

## 2.3. Operating and Production Costs

Statistics reporting information available for crab vessel operating expenditures are summarized in Figure 3.7; in addition to tables and figures reporting harvest labor and quota costs presented previous sections, Tables 4.22 and 4.23 provide summary statistics for available data on bait, fuel, and fod and provisions costs in the harvest sector. Total aggregated expenditure by fishery sector and per-vessel or plant median expenditure are presented for cost data elements where data of sufficient quality to warrant dissemination are available through the current period[12]. 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 collected prior to 2012 (vessel fuel expenditures and quota lease costs), 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.

Total bait expenditures across all fisheries and vessels reached $2.9 million during 2013, down slightly from $3 million in 2012; reported costs in the BBR fishery increased 25% to $583 thousand, and by 19% in the AIG fisheries to $668 thousand, despite the relatively small change in catch and effort in these fisheries (see Table 5), while bait expenditures in the BSS fishery declined by 11% to $1.5 million during 2013, commensurate with other trends in the fishery. Similarly, fuel expenditures in the AIG and BBR fisheries increased during 2013 to $455 thousand (+28%) and $813 thousand (+11%), respectively, and declined by 22% in the BSS fishery to $2.65 million; overall, $4.1 million in fuel expenditures were incurred in CR fisheries during 2013, a 15% decrease from 2012. Reported expenditures for food and provisisions costs followed a similar pattern in the AIG and BSS fisheries, increasing to $142 thousand (+9%) in AIG and decreasing to $691 thousand (-36%) in the BSS fishery, but remained constant at $312 thousand in the BBR fishery, consistent with the minimal variation in vessel days at sea in the 2012 and 2013 BBR fisheries.

## 2.4. 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 and 2013 calendar year CR crab fisheries.

### *2.4.1 Harvest Quota Lease Activity and Average Prices*

Table 4.25, summarized in Figure 3.8 displays aggregated results for crab fishing quota lease volume (in pounds) and cost reported for crab vessels active in 2012 and 2013 calendar year CR

[12]Cost elements that were discontinued in the crab EDR data collection program as of 2012 are not included; see the 2013 volume of this report for additional detail on discontinued harvest and processing cost data collected prior to 2012.

fisheries,[13] by fishing quota type category, with total quantities summed over all reporting vessels, and average values (both median and mean) for volume and cost of leased quota per vessel. Average lease price paid ($US per pound) and average lease rate (lease price as percentage of ex-vessel price) per vessel are shown as well. 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 2013 BBR fishery range from 51 vessels leasing CVO Class A shares, to 8 vessels leasing CDQ shares (out of 63 crab vessels active during the 2013 BBR fishery), and from 56 vessels leasing CVO A Class BSS IFQ allocation to 11 vessels leasing CDQ allocation (out of 70 active vessels) in the BSS fishery. Total volume and cost over all vessels leasing the respective quota types during 2013 range from 4.1 million pounds and $18.6 million for BBR CVO Class A IFQ, to 195 thousand pounds and $954 thousand for BBR CVO and CPC crew IFQ allocation; BSS lease volume and cost ranged from 62.9 million pounds and $66.5 million for CVO A Class IFQ to 3.4 million pounds and $3.9 million for crew share IFQ allocation.

Per-vessel averages (median)[14] for 2013 BBR quota leased volume and cost ranged from 79 thousand pounds and $343 thousand per vessel for BBR CVO A Class allocation, to 10,000 pounds and $47,000 for BBR CVO and CPO crew IFQ; BSS per-vessel averages ranged from 487 thousand pounds and $514,000 per vessel for per vessel CVO- A Class allocation to 78 thousand pounds and $95,000 for BSS crew share allocation.

Average (median) lease prices and lease rates in the BBR fishery shown in Table 4.25 range from from $4.86 per pound CDQ allocation (65% of ex-vessel value; see table footnote regarding calculation of lease rate), to $4.49 per pound (64% of ex-vessel value) for BBR CVO A Class allocation. Median lease price and rate in the BSS fishery ranged from $1.24 for CDQ allocation (54% of ex-vessel value) to $1.07 per pound for BSS CVO A Class IFQ (46% of ex-vessel). 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.

[13]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. Also note that CR crab fisheries are managed on a July-June seasonal calendar, and 2013 BBR and BSS calendar year fisheries are comprised of the 2012/2013 BSS season and 2013/2014 BBR seasons.

[14]Differences between median and mean average values shown in Table 4.25 are most pronounced in the per-vessel pounds and cost statistics; this primarily reflects the relative concentration of high-volume quota leasing activity by 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.

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, and beginning with the 2009/10 crab season, virtually all IFQ has been pooled within harvest cooperatives[15]. Correspondingly, all IFQ lease transactions registered with NMFS (Table 4.26) 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 281 leases registered in 2013/14. Noncooperative leases were most common in the first year, with 113 in total, declining to 16 by 2007/08, and four in 2011/12, the last year such transfers occurred.

### *2.4.2 Quota Share Sales 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 sales discussed below are strongly influenced by regulation of the respective markets. The total number of QS sales 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 4.25). During the most recent season, 215 QS sales 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, with 30 registered for 2013/14. Sales 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. Four PQS sales occurred for 2013/14.

During the first two years of the CR program, sales of catcher vessel crew share (CVC QS) represented the largest proportion of individual sale transfers, with 65 and 99 sales in 2005/06 and 2006/07, respectively, 55% of the total 118 sales in 2005/06, and 47% of 209 sales in 2006/07, accounting for 4.3 million shares over all fisheries in 2005/06, and 4.1 million shares in 2006/07 (Table 4.27 and Figure 3.9). Subsequently, the relative proportion of CVC QS sales have dimished, with catcher vessel owner (CVO) QS sales becoming the predominant type. During 2013/2014, 39 sales of CVC QS were completed across all fisheries, including 9 sales accounting for 283 thousand QS units in the BBR sharepool, and 12 sales accounting for 674 thousand QS units in the BSS sharepool (both representing approximately 2% of the total CVC QS units in the respective share pools). In contrast, 7 sales of CVO QS were completed in the BBR fishery, totaling 5.4 million QS units (1.4% of the pool), and 50 sales totaling 20.7 million QS units (2% of the pool) in the BSS fishery.

Median prices for CVC QS units in the BBR fishery have previously ranged from $0.71 per QS unit in 2010/11 and 2012/13, down from a high of $1.15/unit in 2005/06; 2013/14 price increased from the previous year to $0.80 per unit. BBR CVO QS price per unit exhibited a moderate increase,

[15]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.

reaching $0.95/unit in 2013/14 from $0.83 the previous year well within the range of $0.69 - $1.46 per QS unit observed previously. Median price per unit for BSS CVO QS reached a historical high of $1.07 per unit for 2013/14, substantially higher than the previous range of $0.34 - $0.95 per unit observed previously, while CVC share price declined significantly to $0.73 from the peak value of $0.95/unit observed the previous year, but remained substantially higher than previous range of $0.25 - $0.49 per unit .

PQS sales have been infrequent through the duration of the CR program, with the largest number occurring in 2008/09 at 27 over all, including 4 sales 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 $0.10 for BBR PQS, $0.05 for EBT PQS, and $0.07 for WAG PQS. Following the 2008/09 season, too few PQS sales have been completed in any year to enable publication of aggregate statistics.

### *2.4.3 IFQ and QS Price Comparison*

Comparison of IFQ lease prices to QS sales prices 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[16]. Table 4.28 provides information used by NMFS to determine the conversion of QS units to pounds of IFQ by tyope and fishery for the 2011/12 through 2013/14 CR fisheries. Using the conversion ratio values, and average IFQ lease- and QS sale prices, the calculated IFQ:QS price ratio for 2013 and 2014 are shown in Table 4.29. As a result of the 2013/14 increase in QS prices noted above, the 2014 IFQ:QS ratio values for BBR CVO quota dropped from 0.12 to 0.09, and the BBR CVC quota value ratio dropped from 0.14 to 0.12. The ratio for BSS CVO quota declined more steeply, from 0.15 to 0.07. The number of reported observations is small for lease and sale prices in other quota pools, including the 2013 BSS CVC pool; in addition to preventing public reporting of some values, it is uncertain to what extent the price ratio results based on a small number of observations 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

[16]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 IFQ price to QS price is the average discount rate, $r$, such that

$$\mathrm{QS}_{\mathrm{price}} = \left(\frac{1}{r}\right) * \mathrm{IFQ}_{\mathrm{lease\ price}}$$

. In this relation, the index $r = \frac{\mathrm{IFQ}_{\mathrm{lease\ price}}}{\mathrm{QS}_{\mathrm{price}}}$ 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 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 is lower than the market rate, the holder could expect to earn more over time by selling the QS and investing in alternative assets.

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.

### *2.4.4 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 4.31 to 4.37 of the report, and summarized in Figure 3.10 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 (see table below; use caps and related regulations are found at 50 CFR Part 680, at SS680.42). 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.

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% |

Source: NMFS Alaska Region

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 387 and 384 individuals, respectively (aggregating Owner and Crew QS holders shown in Figure 3.10 and Table 4.31). Despite a modest increase in the number entities holding CVO QS in the BBR and BSS fisheries since the initial allocation in 2005, from 252 to 258, and 241 to 261 as of 2012, respectively, consolidation in both CVC and CVO QS appears to have increased across all CR fisheries in 2013 with the exception of BSS, where share holdings statistics were virtually unchanged from 2012, and and in the EAG fishery, where the count of distinct CVO QS share holder entities went from 16 to 24, and the median share holding decreased from 4.92% to 1.85% of the share pool. With the latter exception, which follows the 2012 exit from the EAG and WAG fisheries of the largest single recipient of QS in the initial CR program allocation, and subsequent conversion of CPO shares to the CVO pool and associated transfers, the most recent changes in QS share ownership appear to be toward marginally greater consolidation.

Across all fisheries, consolidation of crew share QS holdings during the first four years of the CR program produced a relatively large (8%) initial decline from the total 224 individual CVC/CPC "Crew share" QS holders (Table 4.32), aggregated across all CR fisheries. Subsequent changes in the number of individuals moderated to a net value of 1-2 entries or exits per year, with a total of 203 as of the start of the 2013/2014 crab season. 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 in or or more crab fishery as of the 2013/2014 season have declined from 82 during the 2008/2009 season to 64, representing 32% of the 203 individual C-share QS holders, and 42% of the aggregate pool of CVC/CPC shares across all fisheries.

In contrast, QS and PQS holdings among CDQ groups (Table 4.35) have continued to increase substantially through more recent years in nearly all cases, with one additional CDQ group entering each of the BSS, EBT, WBT, and SMB ownership group between 2012/13 and 2013/14, and 1-2 percentage point increases in the percentage of the combined CPO and CPO share pools in all CR fisheries other than EAG and WAG (relative increases in proportional holdings by CDQ groups are more pronounced in the CPO share pools). CDQ groups have increased holdings in BBR and BSS QS pools from less than 2% in 2005, to 12-13% in the BBR, EBT/WBT, and SMB fisheries, 15% in the BSS fishery, 28% in the EAG fishery, and 60% in the WAG fishery, as of 2013/14. As noted previously, ownership statistics regarding the PQS pool have remained quite stable since the start of the CR program, due in large part to limitations on transfer of PQS specified as part of the program provisions. CDQ holdings since 2005 have increased from zero to 4% of the BBR PQS

[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.

pool, 11% of the BSS PQS pool, and 13% of the SMB PQS pool, with significant aquisition in the latter increasing the percentage of ownership from 6% as of 2012.

Tables 4.36 and 4.37 illustrate the progress of attrition of initial issuees and entry of new share holder entities in each of the respective CR fishery Owner (CPO and CVO) QS, Crew (CPC and CVC) QS, and PQS pools. Over all fisheries and sectors, 117 out of 532 (22%) initial issuees have exited from holding QS in one or more fisheries since 2005, of which 6 occured prior to the 2013/14 season. In quota pools with small numbers of initial issuees, higher proportional rates of attrition have occurred, including approximately 30% of initial QS issuees exiting from each of the BBR, BSS, and SMB fisheries (134, 120, and 60 exits as of 2014, respectively). Table 4.37 provides statistics on new entrants to respective QS/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 as of the beginning of the 2013/14 season by either measure was small for Crew QS and PQS. In the BSS fishery, four new Crew QS entrants (two of whom previously held CR shares in another pool) acquired a total of 2% of the pool, compared to a total of 25 new entrants since initial issuance; this contrasts with the exit of 58 of 160 original BSS crew share issuees since 2005 sown in Table 4.36. Four new entrants to the SMB crew share pool in 2013 (three of which were new entrants to CR share holdings) aquired 4% of the pool, increasing the total to 15 entrants to the share pool since initial allocation, compared to the exit of 22 initial issues to-date. Entry to the Owner QS pools during 2013 was similarly active, with new entrants to all fisheries, including 7 new entrants to the BSS fishery and 4 to BBR, acquiring 1% of each of the respective share pools, and 9 new entrants to EAG, acquiring 11% of the quota pool. In conrast to the crew QS pools, new entrants to the owner QS pools have more substantially offset the number of initial issuees that have exited, with 85 new entrants to the BSS owner QS pool compared to 69 initial issuees exited to date, and entrants have been predominantly new to crab share holding pools, rather than only to the respective pool. This may suggest that "new entrant" in the current context may to some degree include new corporate entities owned by or affiliated with entities with earlier QS holdings, and statistics on new entrants, particulalrly in the owner QS pools, should be interpreted with caution.

**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 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 4.39, showing changes in concentration of IFQ landings across active vessels within the crab fleet, and the equivalent in for crab purchasing across the set of active Registered Crab Receivers (crab buyers). As calculated[19], the coefficient measures the relative evenness of the distribution of

[19]The index is calculated as $\frac{\sum_{i=1\ldots n}(2P_i-n-1)x_i}{n^i u}$ 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

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 less efficient vessels. Table 4.39 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; 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 decreasing 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 of buyers shown in 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 4.39, the linkage to physical processing capacity is indirect in these results and possible inferences for relative efficiency in the processing sector are less clear.

### 2.5. Fishing Capacity, Effort, and Efficiency

General metrics of the gross capacity of physical and labor resources actively deployed in BSAI fisheries over the 1998-2013 period have been noted in a variety of contexts in the preceding

vessels with zero catch (not performed for this report), the index would indicate increasing concentration consistent with the overall consolidation of catch.

discussion, including changes in size and composition of the active fleet (Table 4.3), 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 4.2). The substantial consolidation of fishing capacity following rationalization is clearly depicted in fleet composition (Figure 3.11), 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-at-sea (both 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 4.20 [20] 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 2,670 (2,611 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 947 vessel days during 2013; the largest shift in vessel days occurred between 2010 and 2011, when the total went from 2,023 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 6,570 averaged over pre-rationalization reference years (239 days for CPs and 6331 days for CVs), to 3,032 in 2010 (as reported in EDR data; CIF data indicate 2,812 days active during 2010, but both sources indicate a median of 41-42 active days per vessel). Days active in the 2014 BSS fishery declined from an estimated 5,665 in 2012 to 4,581 in 2013 (with median days decreasing from 79 to 58).

Table 4.41 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[21]. Crab vessels often make deliveries to multiple processors following a single fishing trip, and Table 4.41 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 seven seasons have ranged from 237 total trips (3.0 per vessel) during the 2008/09 season to a low of 99 total trips (1.8 per vessel) during the 2012/13 season. 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

[20] 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 4.20 and Figure 3.12 display results using eLandings and ADFG Crab observer program data to estimate vessel activity days; see the 2013 edition of the economic status report for a comparison of alternative data sources.

[21] Note that trip-based metrics in are available only for the 2006/07 crab season and later, with limited information available for EAG and WAG fisheries. Also note that BST results shown include landings of BST crab that are caught as bycatch in the BSS fishery and do not solely reflect directed fishing, and effort statistics shown should be interpreted accordingly.

per trip in 2010/11 to a low of 142,000 pounds per trip in 2011/12, moderating at 157 thousand pounds per trip in 2013/14.

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 2013/14 are displayed in Table 4.42, 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 32 days (34% 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 a low of 89 days during 2013/14 season (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 4.42 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 2013/14 seasons.

Information on active season lengths as discussed above is shown for the BBR and BSS fisheries with additional detail in Tables 4.44 and 4.45 (summarized in Figure 3.13), 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 (CVO A Class IFQ, CVO B Class and crew share IFQ, and all quota types combined). 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 2011/12 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 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. During the 2013/14 BSS season, active fishing by several vessels began in early December, nearly a full month before the earliest significant landings occured in previous years. 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 28$^{th}$ 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 first week of the 2012/13 season.

Finally, summary statistics for harvesting sector operating effort, measured as potlifts per vessel are provided in Table 5 for all CR fishery seasons from 1998 to current, 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

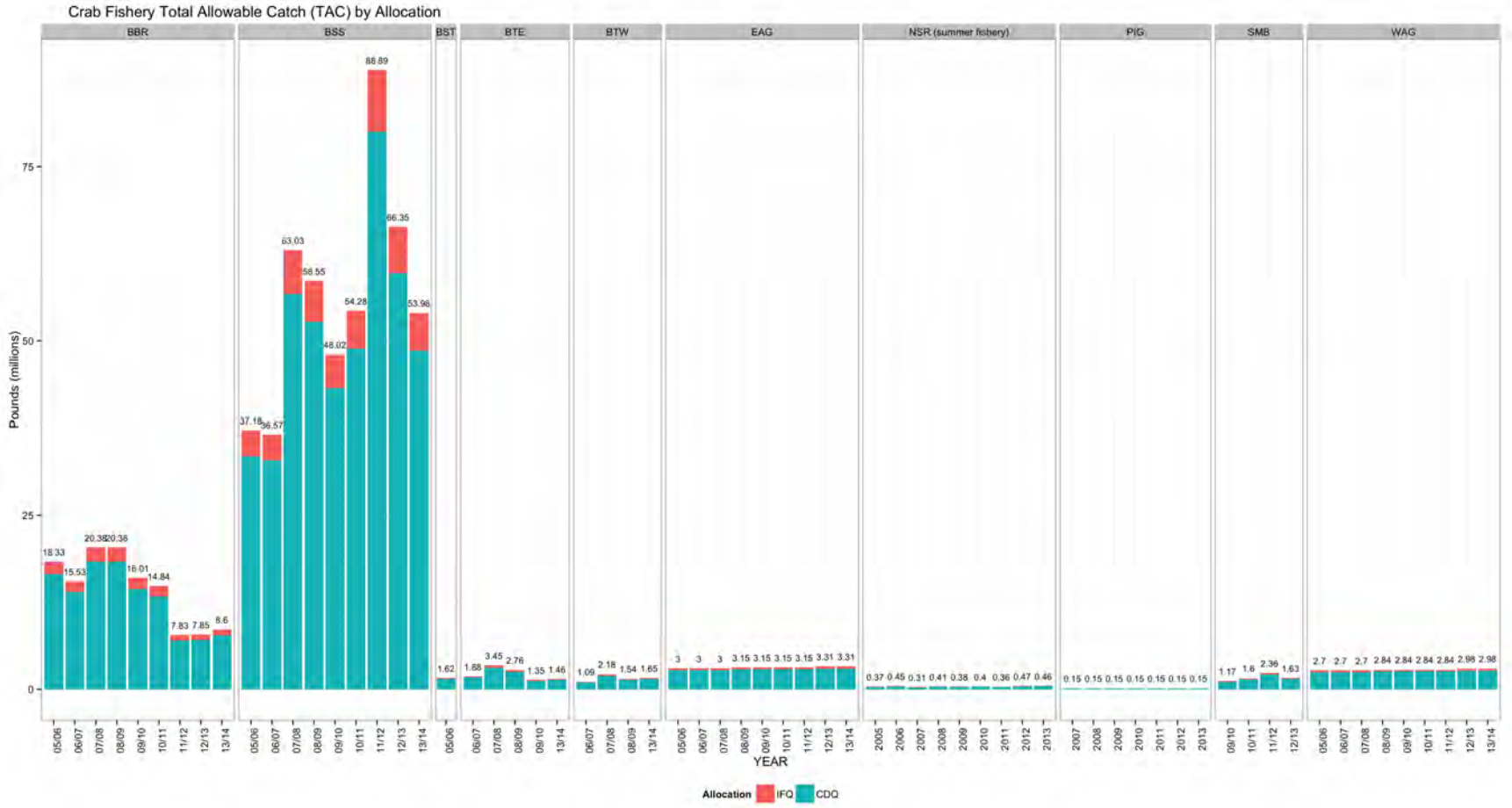
(potlifts) per vessel, catch per unit effort (CPUE), and revenue per unit effort (RPUE). In the BBR fishery, total potlifts are estimated at 38 thousand for 2013/14, the lowest number on record in the available time series. Potlifts per vessel prior to rationalization ranged from 300-600, increasing to 700-2000 per vessel after 2004 in response to fleet consolidation, but declining to 600-700 per vessel during the most recent two seasons. 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 2013/14, CPUE has ranged from 18.6 - 33.3, 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 averaging 1,300 over the period. Following rationalization, 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 2013/14. Vessel average RPUE ranged from $212 to $825 per potlift during the pre-rationalization period, compared to $459 - $962 subsequently, with average over the respective periods increasing 50% from $452 to $676.

### 2.6. International Trade in Crab Commodities

U.S. foreign trade statistics for frozen, processed king and snow crab are summarized for the period 1991-2013 in Table 4.47 and depicted graphically in Figure 3.14. 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 high of 4,330 $t$ in 2006 to a low of 1,780 metric tons ($t$) in 2013, and in value terms between $88.6 million in 2010 to a low of $43.5 million in 2013. Imports over the same period have been more variable, surging to 30,000 $t$ at a value of $45 million in 2007, from which point they have tapered on an annual basis to the most recent figures for 2013 of 10.7 thousand $t$ and $193 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 $18.5 million, to the recent peak in 2012 of $12,720 t with a value of $132 million; the most recent figures show a decline from 2012 export levels to 8,200 $t$, and $90.7 million. Snow crab imports have been somewhat less volatile in volume terms than those of king crab, varying between a low of 41 thousand $t$ to a peak in 2013 of 52 thousand $t$; total value has varied more widely, between a low of $395 million in 2006 to a high of $640 million in 2003; the $551 million value of snow crab imports in 2013 was highest since 2004. 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, but increased to 43.8 thousand $t$ and $460 million in 2013 .

# 3. FIGURES REPORTING ECONOMIC STATISTICS FOR THE KING AND TANNER CRAB FISHERIES OF THE BERING SEA AND ALEUTIAN ISLANDS REGIONS

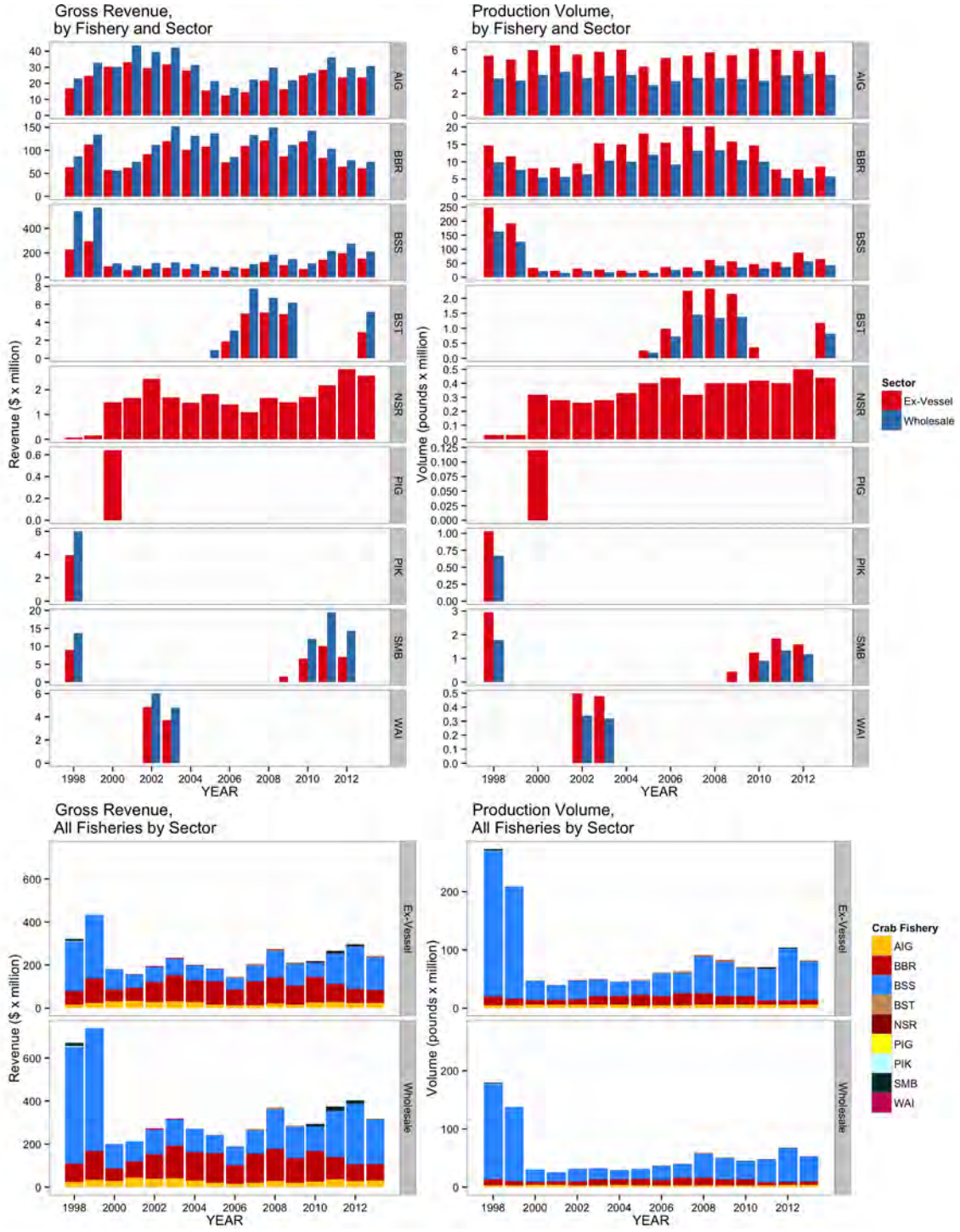
Figure 3.1: TACs/GHLs and Management Program Allocations, BSAI Crab Fisheries




***Source: ADF&G.*** Tabular data available in Table 4.1.

Numeric values above bars indicate total quantity (in million pounds) of TAC/GHL allocations to directed fishing, 10% of which is allocated to CDQ/Adak Community Allocation.

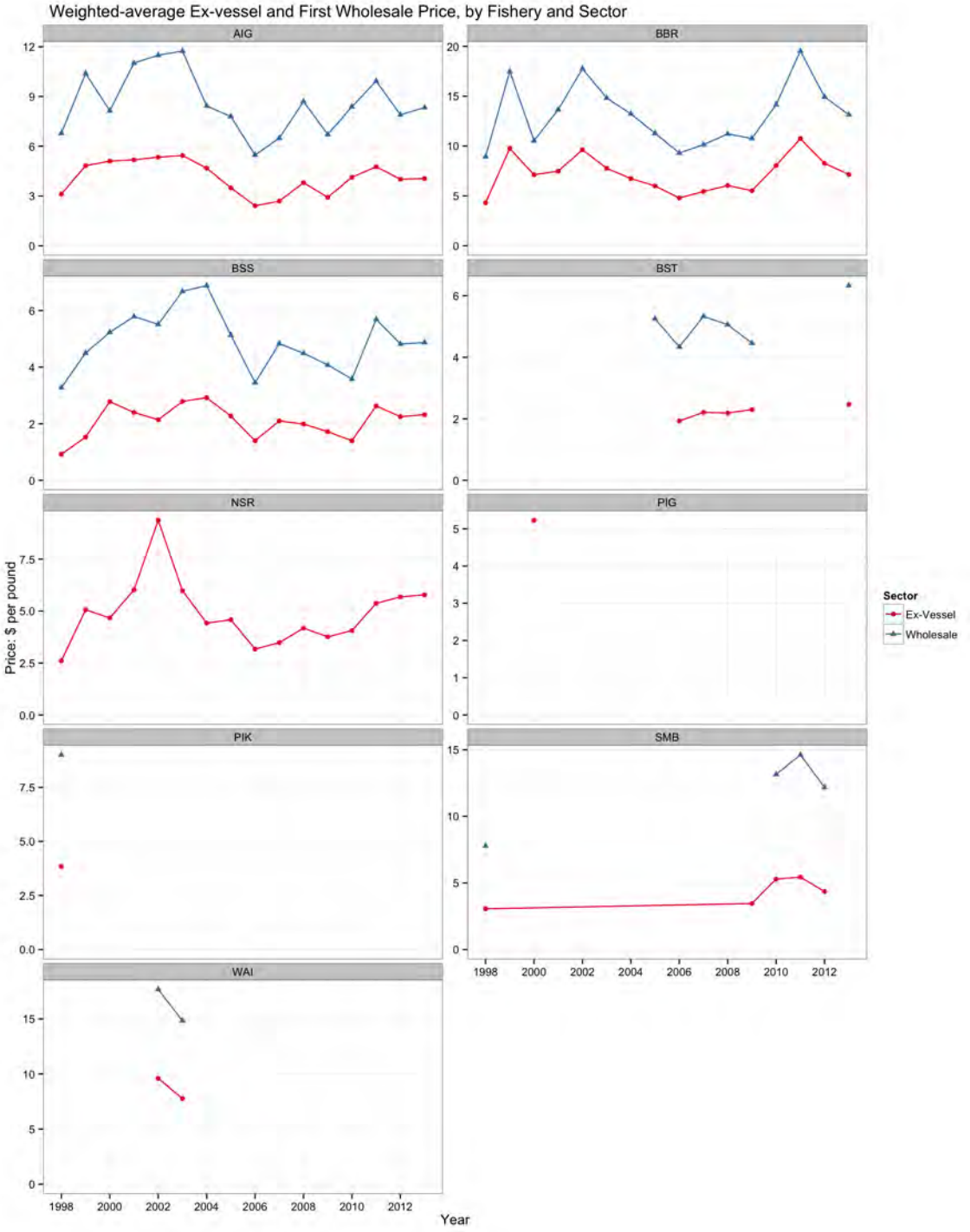
Figure 3.2: Ex-Vessel and First Wholesale Gross Revenue and Production Volume, by Calendar Year, Selected Fisheries




***Source: ADF&G fish tickets, eLandings, CFEC pricing based on COAR buying reports.*** Data shown by calendar year. Tabular results are shown in Tables 4.5 and 4.9.

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

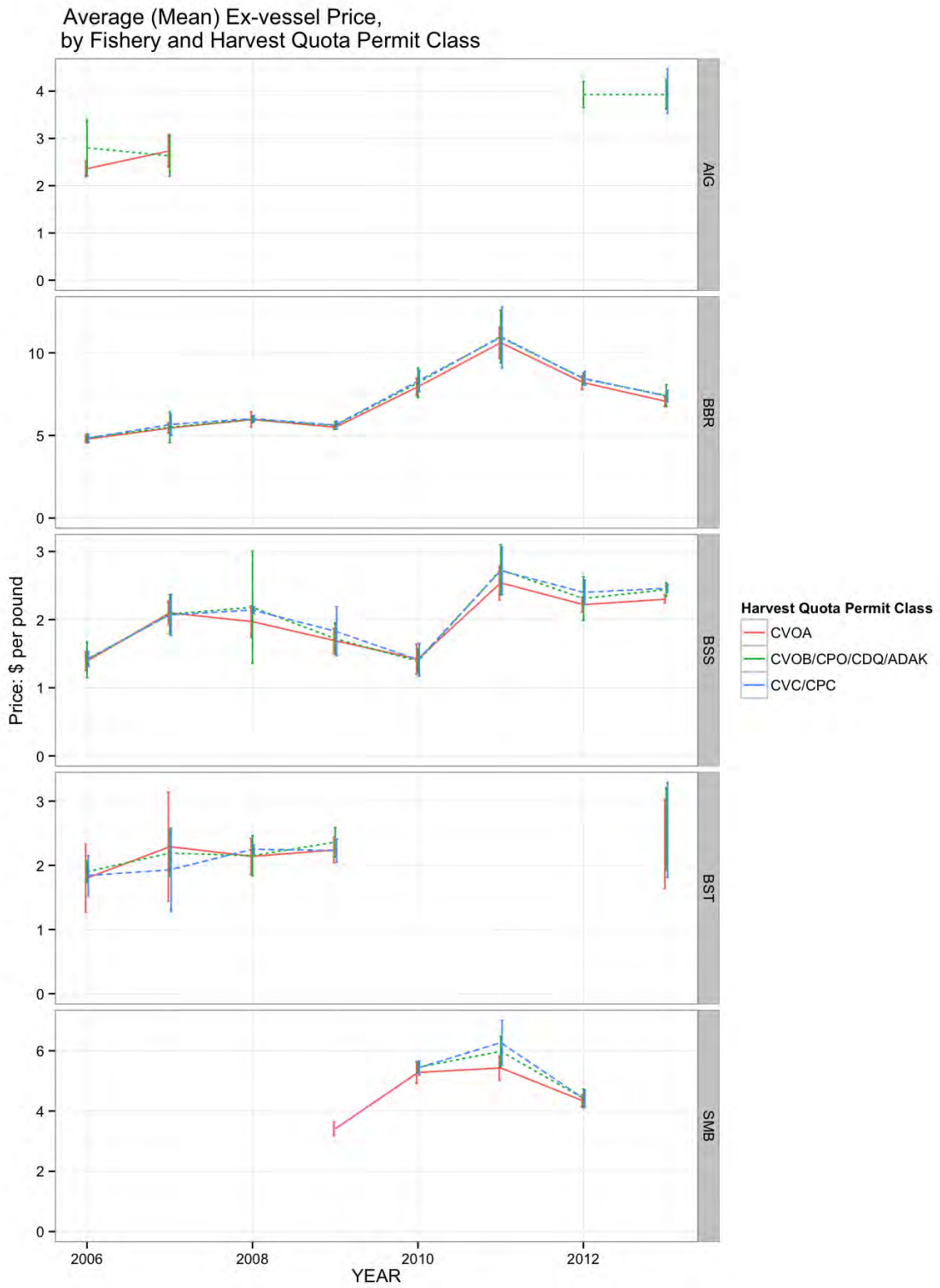
Figure 3.3: Ex-Vessel and First Ex-Vessel and First Wholesale Prices, Selected Fisheries




***Source: ADF&G fish tickets, eLandings, CFEC pricing based on COAR buying reports.*** Data shown by calendar year. Tabular results are shown in Tables 4.5 and 4.9.

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

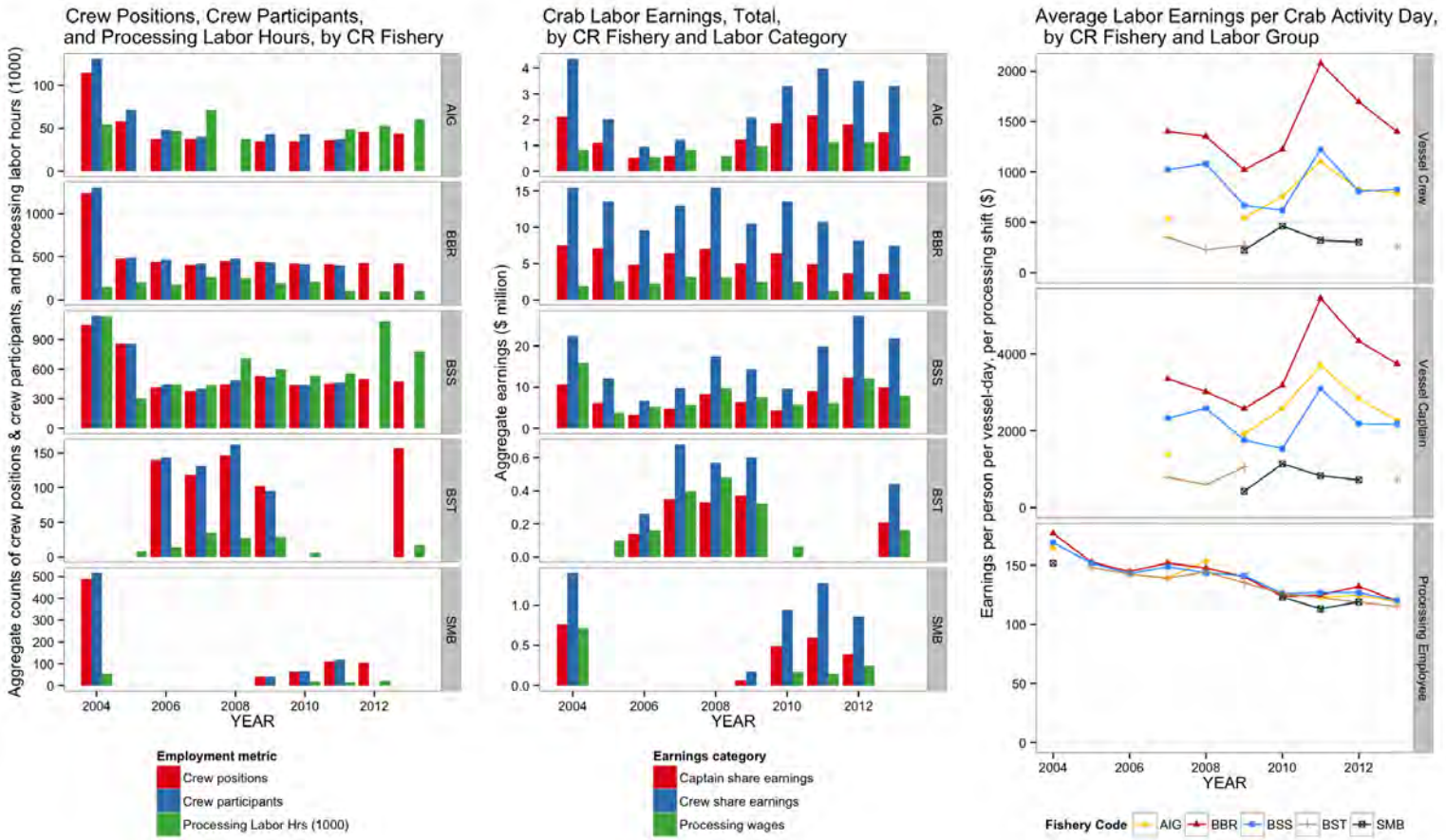
Figure 3.4: Ex-Vessel Price by Quota Type, Selected Fisheries




***Source: NMFS AFSC BSAI Crab Economic Data.*** Data shown by calendar year. Tabular data available in Table 4.8.

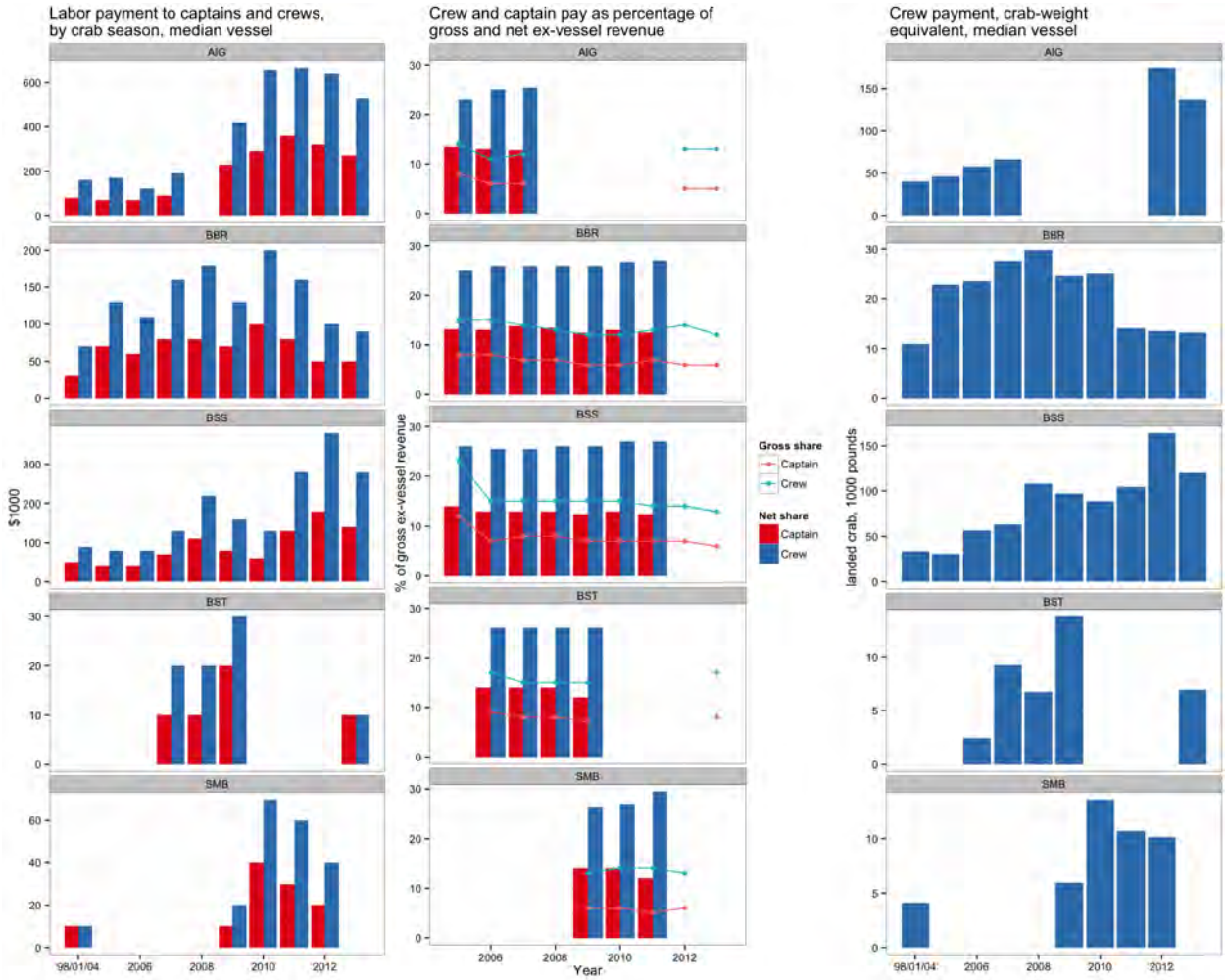
CVC/CPC=catcher vessel and catcher/processor C share quota, CVOA=catcher vessel owner A share quota, CVOB=catcher vessel owner B share quota, CPO=catcher/processor owner quota. 2005 ex-vessel revenue data was reported over all quota types. 2005 BSS data includes revenue earned prior to and after rationalization. Error bars show one standard deviation from mean. Selected data for AIG and BST suppressed for confidentiality.

Figure 3.5: 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 4.12, 4.16- 4.17, and 4.20.
Values shown for 98/01/04 represent the annual average over thethree-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 pay per vessel, pro-rated over vessel activity days; processing pay per day represents 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 3.6: Crew Earnings Metrics, Selected Crab Fisheries

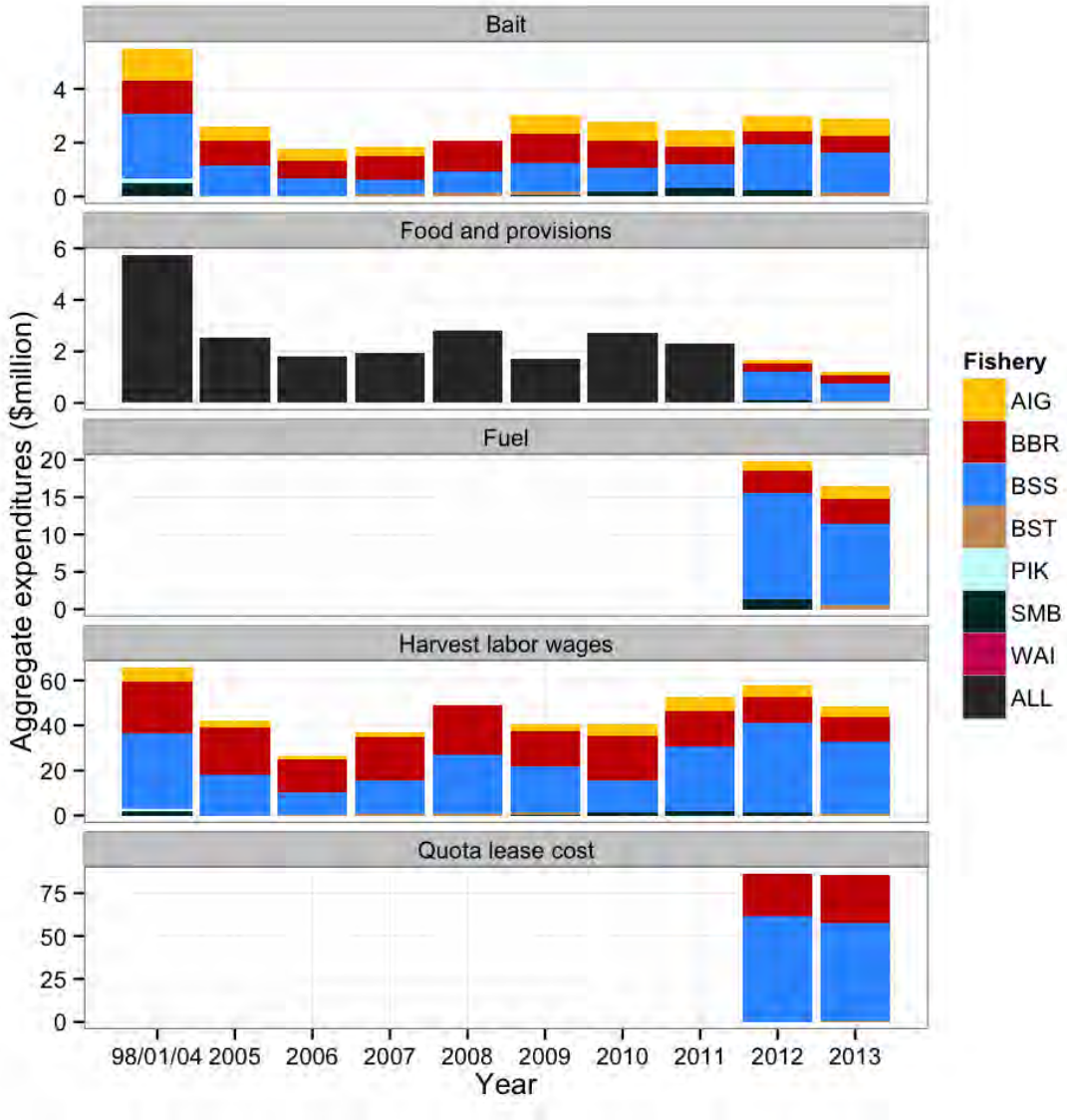



***Source: NMFS AFSC BSAI Crab Economic Data.*** Data shown by calendar year. Tabular data available in Tables 4.12 and 4.19.

Values shown for 98/01/04 represent the annual average over the three-year series.

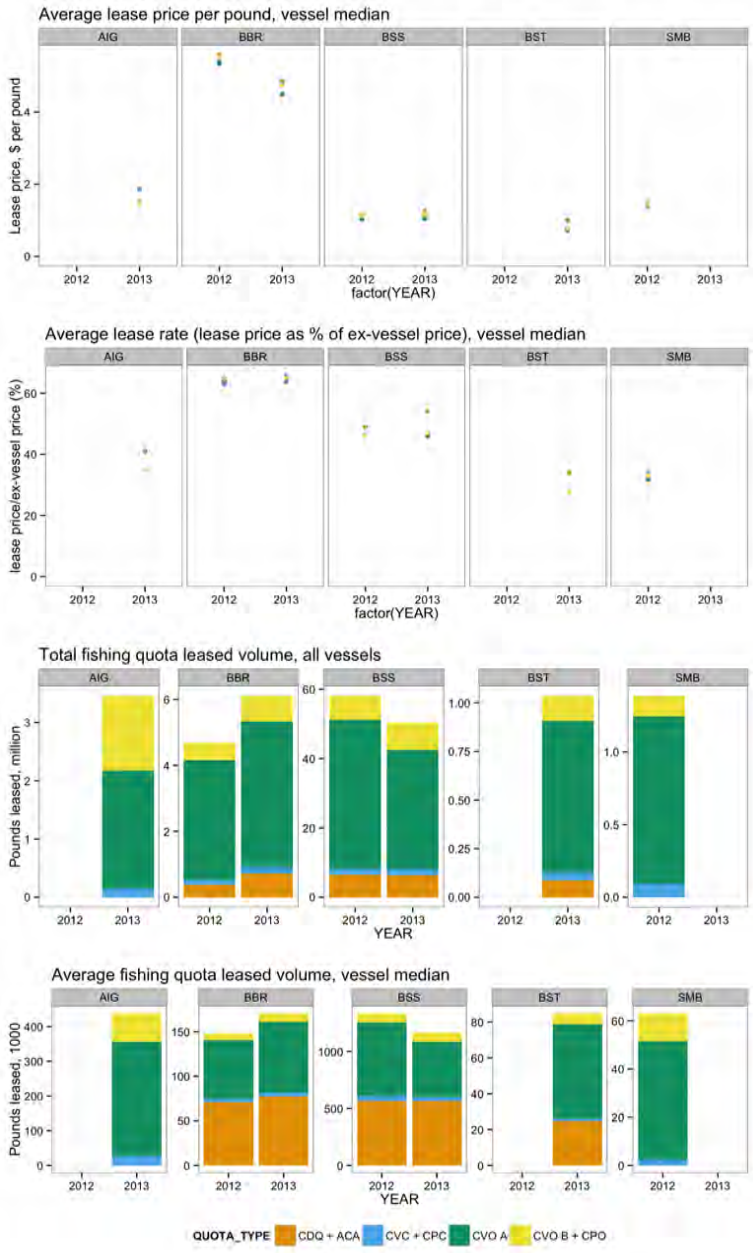
Median pay in dollars shown for CV sector only for 1998-2008 and for CV and CP sectors combined for 2009 and later. Median crab-equivalent crew pay is shown for CV sector only for all years. Crab equivalent pay is denominated in pounds and is calculated by dividing vessel crew share payment by ex-vessel 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 3.7: Aggregate Crab Vessel Operating Costs, by Cost Item and Fishery




***Source: NMFS AFSC BSAI Crab Economic Data.*** Tabular data available in Tables 4.22- 4.23 and 4.25. Values shown represent total annual expenditures by cost item for calendar years 1998-2012, aggregated over all vessel entities reporting except where data are suppressed for confidentiality. Cost data shown include all cost items for which data are available, but do not represent a comprehensive accounting of operating expenditures.Change in data collection protocols implemented beginning 2012 discontinued reporting for several expenditure items and disaggregated 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. Values for 98/01/04 represent the annual average of results pooled over the three years.

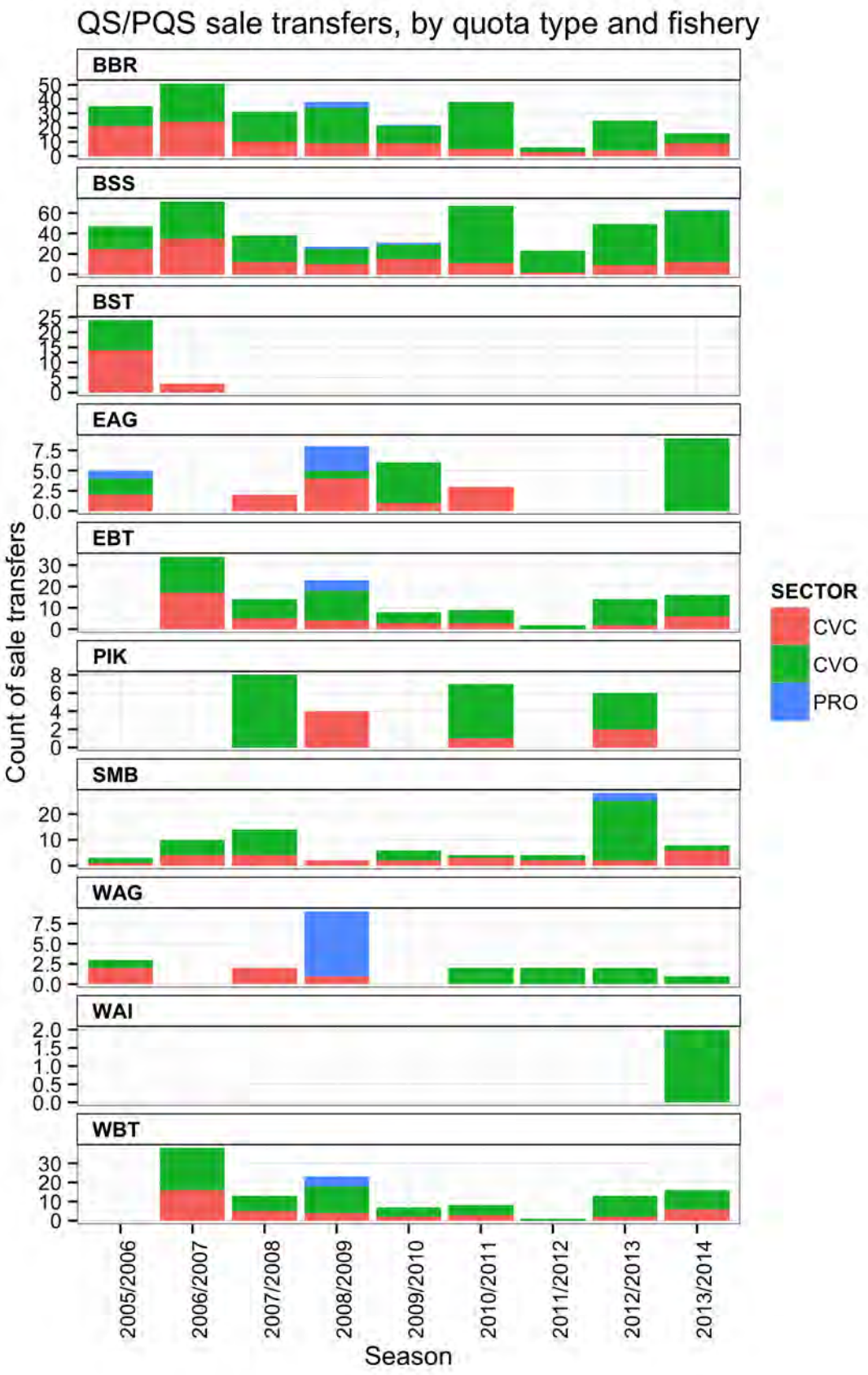
Figure 3.8: Crab Harvest Quota Lease Activity; Lease Volume, Price, and Rate, Selected CR Fisheries, 2012-2013




***Source: NMFS AFSC BSAI Crab Economic Data.*** Tabular data available in Table **??**. Lease data shown represent arm's length lease transactions reported for active crab fishing vessels in the 2012 and 2013 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 3.9: QS and PQS Sales



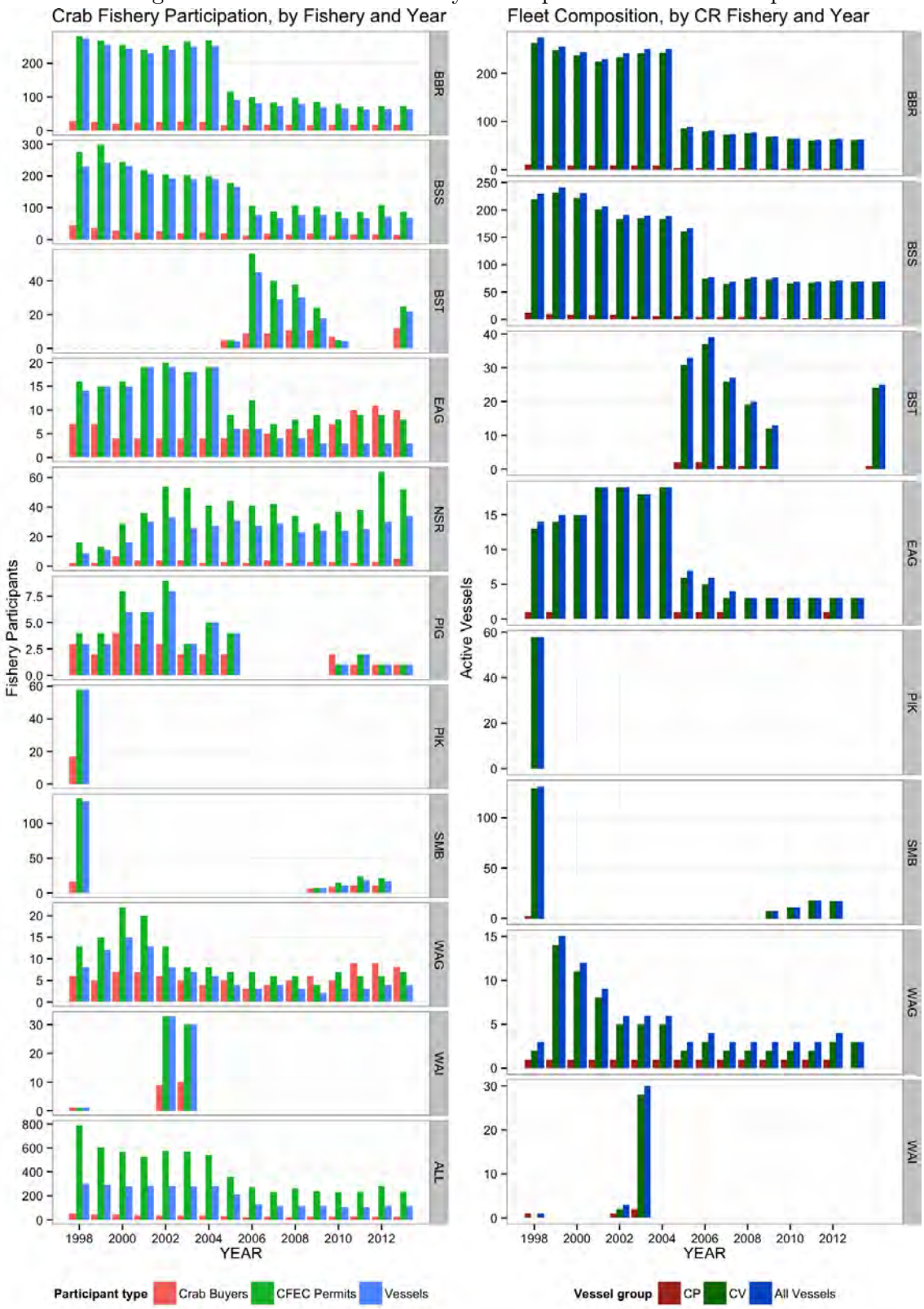

***Source: Source: NMFS AKRO RAM division, Quota share transfer data***. Tabular data resented in Table 4.27.

Figure 3.10: CR Program Harvest and Processing Quota Share Holdings, Initial Allocation, 2012/2013, and 2013/2014 Seasons


***Source: NMFS AKRO RAM Division, quota share holders files.***

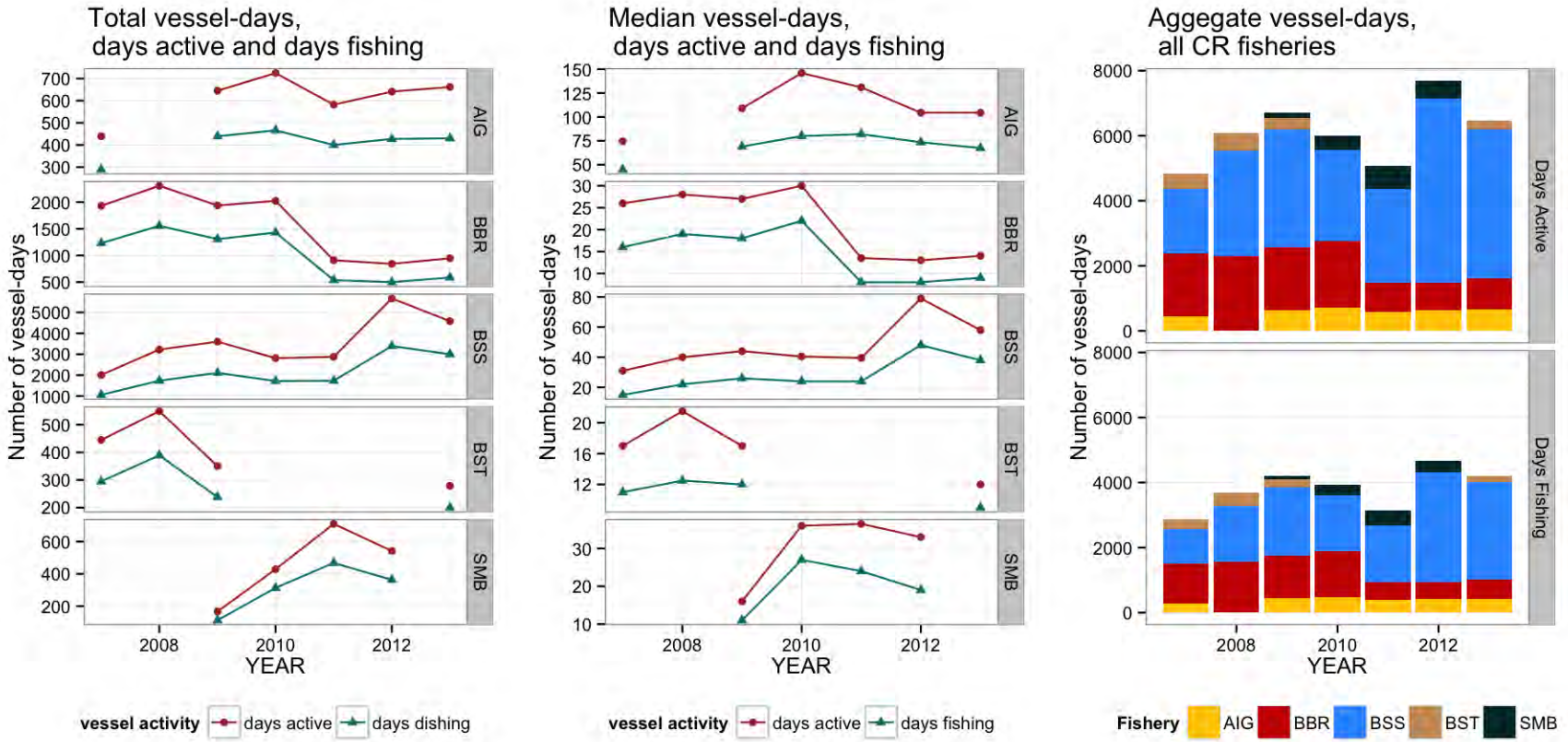
Tabular data available in Tables 4.31 and 4.34.

Figure 3.11: BSAI Crab Fishery Participation and Fleet Composition



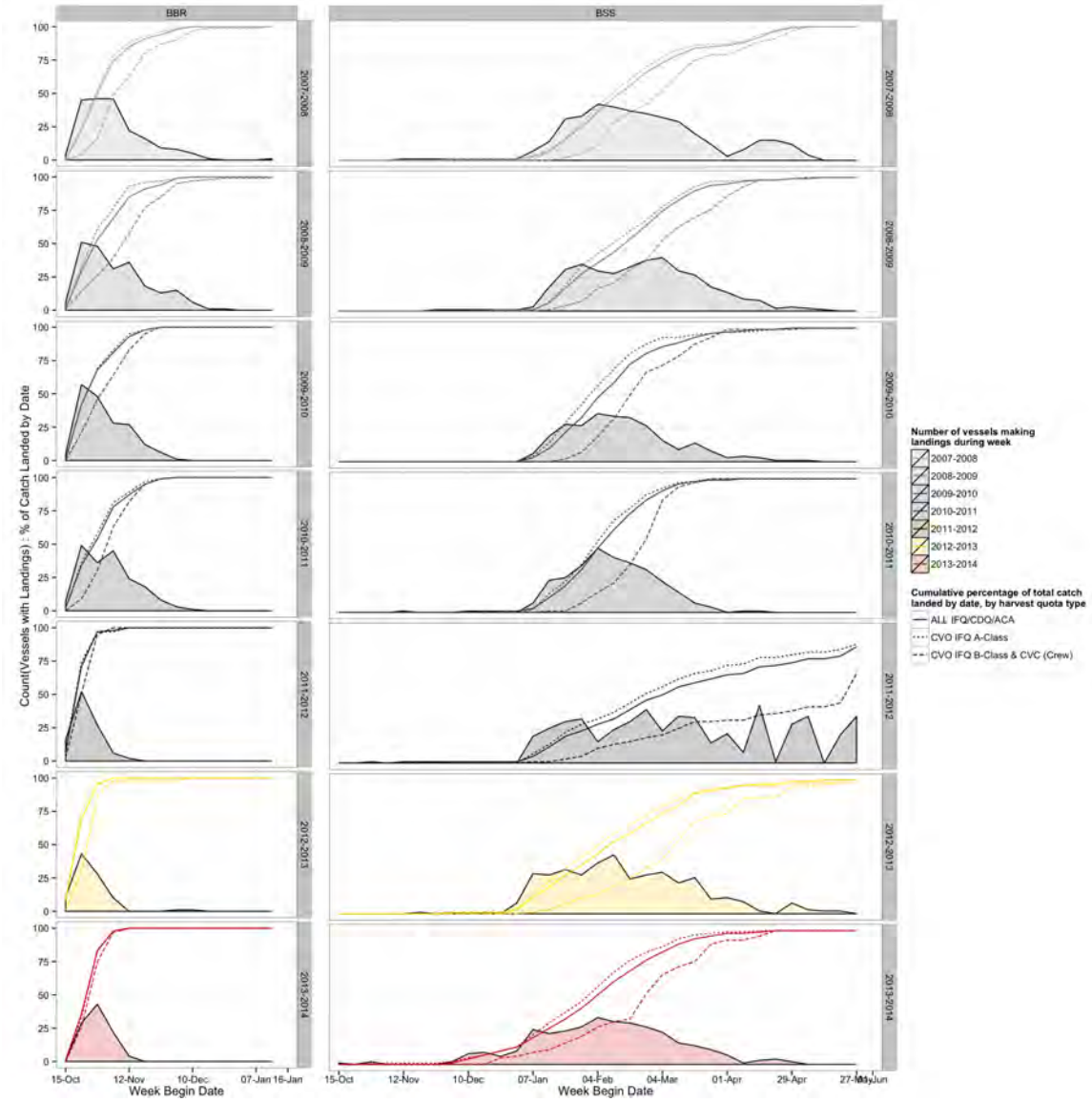

***Source: ADF&G fish tickets, eLandings.*** Tabular data available in Tables 4.2 and 4.3. Gaps in time series for BST, PIG, PIK, SMB, and WAI indicate fishery closure years.

Figure 3.12: Harvest Vessel Activity Days, Selected Fisheries




***Source: ADF&G Shellfish Observer Program, Confidential Interview Form Data.*** Tabular data is presented in Table 4.20. 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.

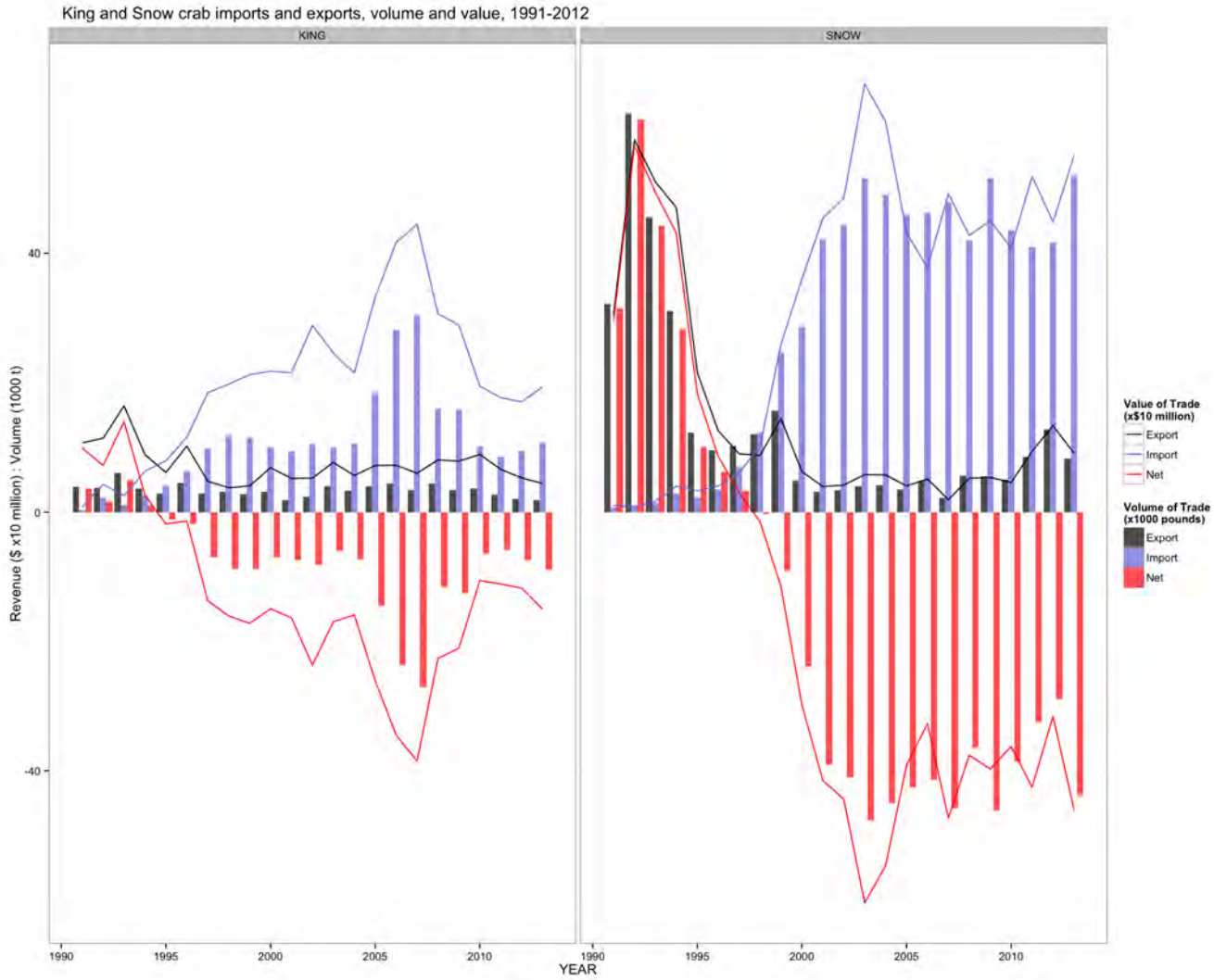
Figure 3.13: Crab Vessel Landing Activity and Cumulative Catch, by Quota Share Class and Week of Season: Bristol Bay Red King and Bering Sea Snow Crab




***Source: ADF&G fish tickets via eLandings; NMFS RAM Division, IFQ accounting database.*** Tabular data available in Tables 4.44 and 4.45.

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 Bristol Bay red king (BBR) and Bering Seas snow (BSS) crab 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 3.14: 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:/wwww.st.nmfs.noaa.gov/st1/trade/`; Tabular data shown in figure available in Table 4.47. 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).

# 4. TABLES REPORTING ECONOMIC DATA FOR THE KING AND TANNER CRAB FISHERIES OF THE BERING SEA AND ALEUTIAN ISLANDS REGIONS

Table 4.1: TACs/GHLs, BSAI Crab Fishery Management Program Allocations and Usage

| | Year | IFQ / general allocation (million lbs) | CDQ/ACA allocation (million lbs) | TAC/GHL (million lbs) | Percent IFQ/general allocation landed | Percent 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% |
| | 13/14 | 7.74 | 0.86 | 8.60 | 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% |
| | 13/14 | 48.58 | 5.40 | 53.98 | 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% |
| | 13/14 | 1.32 | 0.15 | 1.46 | 99% | 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% | 0% |
| | 13/14 | 1.48 | 0.16 | 1.65 | 81% | 73% |
| 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% |
| | 13/14 | 2.98 | 0.33 | 3.31 | * | 100% |

Continued on next page.

Table 4.1: Continued

| | Year | IFQ / general allocation (million lbs) | CDQ/ACA allocation (million lbs) | TAC/GHL (million lbs) | Percent IFQ/general allocation landed | Percent CDQ allocation landed |
|---|---|---|---|---|---|---|
| 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 | 0.40 | 106% | 98% |
| | 2011 | 0.33 | 0.03 | 0.36 | 113% | 100% |
| | 2012 | 0.43 | 0.03 | 0.47 | 102% | 100% |
| | 2013 | 0.46 | 0.04 | 0.46 | 81% | 50% |
| PIG | 2007 | 0.15 | - | 0.15 | 0% | - |
| | 2008 | 0.15 | - | 0.15 | 0% | - |
| | 2009 | 0.15 | - | 0.15 | 0% | - |
| | 2010 | 0.15 | - | 0.15 | * | - |
| | 2011 | 0.15 | - | 0.15 | * | - |
| | 2012 | 0.15 | - | 0.15 | * | - |
| | 2013 | 0.15 | - | 0.15 | * | - |
| SMB | 09/10 | 1.05 | 0.12 | 1.17 | 44% | 0% |
| | 10/11 | 1.44 | 0.16 | 1.60 | 77% | 98% |
| | 11/12 | 2.12 | 0.24 | 2.36 | 80% | 77% |
| | 12/13 | 1.47 | 0.16 | 1.63 | 99% | 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 | * | * |
| | 13/14 | 2.68 | 0.30 | 2.98 | * | * |

**Notes:** 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). Data 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.

**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).

Table 4.2: BSAI Crab Fishery Participation by Calendar Year

| | Type | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALL | CFEC permits fished | 791 | 607 | 562 | 529 | 576 | 570 | 538 | 355 | 272 | 232 | 262 | 242 | 232 | 235 | 284 | 233 |
| | Vessels | 295 | 294 | 278 | 281 | 281 | 279 | 282 | 213 | 129 | 115 | 117 | 113 | 103 | 103 | 114 | 115 |
| | Fish buyers/processors | 54 | 43 | 39 | 36 | 37 | 37 | 34 | 30 | 20 | 27 | 23 | 27 | 24 | 27 | 26 | 28 |
| BBR | CFEC permits fished | 281 | 266 | 255 | 240 | 253 | 264 | 268 | 115 | 100 | 85 | 98 | 86 | 79 | 71 | 74 | 73 |
| | Vessels | 274 | 256 | 244 | 230 | 241 | 250 | 251 | 89 | 81 | 73 | 79 | 70 | 65 | 62 | 64 | 63 |
| | Fish buyers/processors | 28 | 24 | 22 | 23 | 24 | 26 | 25 | 16 | 15 | 18 | 17 | 16 | 17 | 18 | 17 | 17 |
| BSS | CFEC permits fished | 276 | 298 | 244 | 219 | 205 | 202 | 200 | 178 | 106 | 89 | 108 | 103 | 87 | 88 | 109 | 88 |
| | Vessels | 230 | 241 | 231 | 207 | 191 | 190 | 189 | 167 | 78 | 68 | 78 | 77 | 68 | 68 | 72 | 70 |
| | Fish buyers/processors | 44 | 37 | 28 | 23 | 26 | 21 | 23 | 20 | 13 | 18 | 17 | 18 | 13 | 16 | 16 | 15 |
| BST | CFEC permits fished | - | - | - | - | - | - | - | 5 | 56 | 40 | 38 | 24 | 5 | - | - | 25 |
| | Vessels | - | - | - | - | - | - | - | 4 | 45 | 29 | 30 | 18 | 4 | - | - | 22 |
| | Fish buyers/processors | - | - | - | - | - | - | - | 5 | 9 | 9 | 11 | 11 | 7 | - | - | 12 |
| EAG | CFEC permits fished | 16 | 15 | 16 | 19 | 20 | 18 | 19 | 9 | 12 | 7 | 8 | 9 | 8 | 9 | 9 | 8 |
| | Vessels | 14 | 15 | 15 | 19 | 19 | 18 | 19 | 6 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | 3 |
| | Fish buyers/processors | 7 | 7 | 4 | 4 | 4 | 4 | 4 | 4 | 6 | 5 | 6 | 6 | 7 | 10 | 11 | 10 |

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Table 4.2: Continued

| | Type | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NSR | CFEC permits fished | 16 | 13 | 29 | 36 | 54 | 53 | 41 | 44 | 41 | 42 | 34 | 29 | 37 | 38 | 64 | 52 |
| | Vessels | 9 | 11 | 16 | 30 | 33 | 26 | 27 | 31 | 27 | 29 | 23 | 24 | 24 | 25 | 30 | 34 |
| | Fish buyers/processors | 2 | 2 | 7 | 4 | 4 | 4 | 2 | 3 | 2 | 4 | 2 | 3 | 3 | 2 | 3 | 5 |
| PIG | CFEC permits fished | 4 | 4 | 8 | 6 | 9 | 3 | 5 | 4 | - | - | - | - | 1 | 2 | 1 | 1 |
| | Vessels | 3 | 3 | 6 | 6 | 8 | 3 | 5 | 4 | - | - | - | - | 1 | 2 | 1 | 1 |
| | Fish buyers/processors | 3 | 2 | 4 | 3 | 3 | 2 | 2 | 2 | - | - | - | - | 2 | 1 | 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 | - |

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Table 4.2: Continued

| | Type | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WAG | CFEC permits fished | 13 | 15 | 22 | 20 | 13 | 8 | 8 | 7 | 7 | 6 | 6 | 4 | 7 | 6 | 6 | 7 |
| | Vessels | 8 | 12 | 15 | 13 | 8 | 7 | 6 | 4 | 3 | 4 | 3 | 2 | 3 | 3 | 4 | 4 |
| | Fish buyers/processors | 6 | 5 | 7 | 7 | 6 | 5 | 4 | 5 | 3 | 4 | 5 | 6 | 5 | 9 | 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 | - | - | - | - | - | - | - | - | - |

**Notes:** 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.

**Source:** ADF&G fish ticket data, and eLandings

Table 4.3: Fleet Composition by Season, CR Program Fisheries

| | 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 |
| | 2013-2014 | 63 | 62 | 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 |
| | 2013-2014 | 70 | 68 | 2 |

Continued on next page.

Table 4.3: Continued

| | Season | Total vessels | Catcher vessels | Catcher/processors |
|---|---|---|---|---|
| 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 |
| | 2013-2014 | 25 | 24 | 1 |
| 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 | 1 |
| | 2013-2014 | 3 | 3 | 0 |
| PIK | 1998 | 58 | 58 | 0 |
| 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 |

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Table 4.3: Continued

| | Season | Total vessels | Catcher vessels | Catcher/processors |
|---|---|---|---|---|
| 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 |
| | 2013-2014 | 3 | 3 | 0 |
| WAI | 1998-1999 | 1 | 0 | 1 |
| | 2002-2003 | 3 | 2 | 1 |
| | 2003-2004 | 30 | 28 | 2 |

**Notes:** Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2013-equivalent value. Information suppressed for confidentiality where indicated by "*", and data not available where indicated by "-".

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

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database eLandings .

Table 4.4: Deadloss by Quota Type – Catcher Vessels, CR Program Fisheries

| | | Type | Vessels with deadloss | Deadloss (1,000lb) | Percent of fishery-year sold (lb) | Mean deadloss (1,000lb) |
|---|---|---|---|---|---|---|
| AIG | 2006 | CVOA | 6 | 45.64 | 1.48% | 7.61 |
| | | CVC/CPC | 3 | 0.91 | 0.74% | 0.30 |
| | | CVOB/CPO/CDQ/ADAK | 4 | 19.26 | 0.94% | 4.82 |
| | 2007 | CVOA | 4 | 30.64 | 1.04% | 7.66 |
| | | CVC/CPC | 1 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 5 | 5.22 | 0.22% | 1.04 |
| | 2008 | CVOA | 4 | 45.37 | 1.46% | 11.34 |
| | | CVC/CPC | 3 | 1.37 | 0.76% | 0.46 |
| | | CVOB/CPO/CDQ/ADAK | 3 | 6.11 | 0.25% | 2.04 |
| | 2009 | CVOA | 4 | 50.62 | 1.57% | 12.66 |
| | | CVC/CPC | 2 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | 7.95 | 0.37% | 1.99 |
| | 2010 | CVOA | 4 | 84.19 | 2.26% | 21.05 |
| | | CVC/CPC | 4 | 20.23 | 16.33% | 5.06 |
| | | CVOB/CPO/CDQ/ADAK | 4 | 13.76 | 0.62% | 3.44 |
| | 2011 | CVOA | 4 | 53.74 | 1.54% | 13.44 |
| | | CVC/CPC | 2 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | 13.29 | 0.58% | 3.32 |
| | 2012 | CVOA | 4 | 42.26 | 1.21% | 10.57 |
| | | CVC/CPC | 3 | 2.80 | 1.79% | 0.93 |
| | | CVOB/CPO/CDQ/ADAK | 5 | 79.54 | 3.47% | 15.91 |
| | 2013 | CVOA | 5 | 60.05 | 1.63% | 12.01 |
| | | CVC/CPC | 4 | 0.86 | 0.61% | 0.21 |
| | | CVOB/CPO/CDQ/ADAK | 6 | 50.09 | 2.36% | 8.35 |

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Table 4.4: Continued

| | | Type | Vessels with deadloss | Deadloss (1,000lb) | Percent of fishery-year sold (lb) | Mean deadloss (1,000lb) |
|---|---|---|---|---|---|---|
| BBR | 2006 | CVOA | 75 | 90.23 | 0.78% | 1.20 |
| | | CVC/CPC | 17 | 1.45 | 0.36% | 0.09 |
| | | CVOB/CPO/CDQ/ADAK | 33 | 26.05 | 0.76% | 0.79 |
| | 2007 | CVOA | 70 | 115.53 | 0.76% | 1.65 |
| | | CVC/CPC | 19 | 4.51 | 0.84% | 0.24 |
| | | CVOB/CPO/CDQ/ADAK | 39 | 20.35 | 0.45% | 0.52 |
| | 2008 | CVOA | 74 | 150.26 | 0.99% | 2.03 |
| | | CVC/CPC | 22 | 2.02 | 0.39% | 0.09 |
| | | CVOB/CPO/CDQ/ADAK | 42 | 20.78 | 0.46% | 0.49 |
| | 2009 | CVOA | 67 | 98.69 | 0.84% | 1.47 |
| | | CVC/CPC | 16 | 1.31 | 0.30% | 0.08 |
| | | CVOB/CPO/CDQ/ADAK | 34 | 21.74 | 0.61% | 0.64 |
| | 2010 | CVOA | 64 | 94.13 | 0.85% | 1.47 |
| | | CVC/CPC | 9 | 0.90 | 0.23% | 0.10 |
| | | CVOB/CPO/CDQ/ADAK | 30 | 12.35 | 0.38% | 0.41 |
| | 2011 | CVOA | 59 | 28.42 | 0.49% | 0.48 |
| | | CVC/CPC | 6 | 0.14 | 0.07% | 0.02 |
| | | CVOB/CPO/CDQ/ADAK | 20 | 3.51 | 0.20% | 0.18 |
| | 2012 | CVOA | 59 | 27.02 | 0.46% | 0.46 |
| | | CVC/CPC | 5 | 0.36 | 0.18% | 0.07 |
| | | CVOB/CPO/CDQ/ADAK | 18 | 2.67 | 0.15% | 0.15 |
| | 2013 | CVOA | 58 | 56.18 | 0.88% | 0.97 |
| | | CVC/CPC | 6 | 0.40 | 0.19% | 0.07 |
| | | CVOB/CPO/CDQ/ADAK | 17 | 6.18 | 0.32% | 0.36 |

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Table 4.4: Continued

| | | Type | Vessels with deadloss | Deadloss (1,000lb) | Percent of fishery-year sold (lb) | Mean deadloss (1,000lb) |
|---|---|---|---|---|---|---|
| BSS | 2006 | CVOA | 73 | 292.59 | 1.11% | 4.01 |
| | | CVC/CPC | 22 | 9.01 | 0.94% | 0.41 |
| | | CVOB/CPO/CDQ/ADAK | 45 | 69.43 | 0.65% | 1.54 |
| | 2007 | CVOA | 62 | 291.26 | 1.15% | 4.70 |
| | | CVC/CPC | 18 | 7.25 | 0.78% | 0.40 |
| | | CVOB/CPO/CDQ/ADAK | 42 | 101.10 | 1.19% | 2.41 |
| | 2008 | CVOA | 74 | 447.35 | 1.00% | 6.05 |
| | | CVC/CPC | 32 | 10.71 | 0.63% | 0.33 |
| | | CVOB/CPO/CDQ/ADAK | 51 | 93.30 | 0.58% | 1.83 |
| | 2009 | CVOA | 73 | 341.12 | 0.83% | 4.67 |
| | | CVC/CPC | 29 | 11.21 | 0.71% | 0.39 |
| | | CVOB/CPO/CDQ/ADAK | 52 | 82.89 | 0.56% | 1.59 |
| | 2010 | CVOA | 66 | 367.88 | 1.08% | 5.57 |
| | | CVC/CPC | 17 | 5.32 | 0.41% | 0.31 |
| | | CVOB/CPO/CDQ/ADAK | 41 | 163.49 | 1.30% | 3.99 |
| | 2011 | CVOA | 64 | 275.35 | 0.72% | 4.30 |
| | | CVC/CPC | 16 | 4.61 | 0.32% | 0.29 |
| | | CVOB/CPO/CDQ/ADAK | 30 | 72.08 | 0.51% | 2.40 |
| | 2012 | CVOA | 68 | 489.60 | 0.78% | 7.20 |
| | | CVC/CPC | 15 | 15.08 | 0.63% | 1.01 |
| | | CVOB/CPO/CDQ/ADAK | 55 | 132.23 | 0.58% | 2.40 |
| | 2013 | CVOA | 68 | 402.17 | 0.79% | 5.91 |
| | | CVC/CPC | 12 | 5.22 | 0.29% | 0.44 |
| | | CVOB/CPO/CDQ/ADAK | 30 | 86.07 | 0.48% | 2.87 |

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Table 4.4: Continued

| | | Type | Vessels with deadloss | Deadloss (1,000lb) | Percent of fishery-year sold (lb) | Mean deadloss (1,000lb) |
|---|---|---|---|---|---|---|
| BST | 2006 | CVOA | 35 | 4.16 | 0.64% | 0.12 |
| | | CVC/CPC | 5 | 0.11 | 0.62% | 0.02 |
| | | CVOB/CPO/CDQ/ADAK | 13 | 1.85 | 0.57% | 0.14 |
| | 2007 | CVOA | 36 | 27.44 | 1.53% | 0.76 |
| | | CVC/CPC | 8 | 0.21 | 0.60% | 0.03 |
| | | CVOB/CPO/CDQ/ADAK | 15 | 1.89 | 0.44% | 0.13 |
| | 2008 | CVOA | 31 | 17.56 | 1.02% | 0.57 |
| | | CVC/CPC | 7 | 1.16 | 1.98% | 0.17 |
| | | CVOB/CPO/CDQ/ADAK | 14 | 3.79 | 0.68% | 0.27 |
| | 2009 | CVOA | 24 | 12.86 | 0.82% | 0.54 |
| | | CVC/CPC | 7 | 0.44 | 0.97% | 0.06 |
| | | CVOB/CPO/CDQ/ADAK | 17 | 4.13 | 0.77% | 0.24 |
| | 2010 | CVOA | 12 | 2.62 | 0.89% | 0.22 |
| | | CVC/CPC | 4 | 0.20 | 1.60% | 0.05 |
| | | CVOB/CPO/CDQ/ADAK | 8 | 0.73 | 1.07% | 0.09 |
| | 2011 | CVC/CPC | 1 | * | - | * |
| | | CVOB/CPO/CDQ/ADAK | 11 | 0.86 | - | 0.08 |
| | 2012 | CVOA | 1 | * | - | * |
| | | CVC/CPC | 11 | 0.42 | - | 0.04 |
| | | CVOB/CPO/CDQ/ADAK | 8 | 0.45 | - | 0.06 |
| | 2013 | CVOA | 32 | 5.58 | 0.58% | 0.17 |
| | | CVC/CPC | 10 | 0.37 | 1.45% | 0.04 |
| | | CVOB/CPO/CDQ/ADAK | 12 | 0.91 | 0.35% | 0.08 |
| SMB | 2009 | CVOA | 7 | 10.17 | 2.37% | 1.45 |
| | | CVC/CPC | 1 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 1 | * | * | * |
| | 2010 | CVOA | 11 | 9.18 | 0.92% | 0.83 |
| | | CVC/CPC | 1 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 3 | 1.02 | 0.43% | 0.34 |
| | 2011 | CVOA | 18 | 24.72 | 1.68% | 1.37 |
| | | CVC/CPC | 3 | 0.02 | 0.06% | 0.01 |
| | | CVOB/CPO/CDQ/ADAK | 9 | 1.86 | 0.52% | 0.21 |
| | 2012 | CVOA | 16 | 19.57 | 1.59% | 1.22 |
| | | CVC/CPC | 2 | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 7 | 1.48 | 0.45% | 0.21 |

**Notes:** Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2013-equivalent value. Information suppressed for confidentiality where indicated by "*", and data not available where indicated by "-".

[a] 2005 and later crew positions information from eLandings.

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

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

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database eLandings .

Table 4.5: Ex-Vessel Volume, Gross Revenue Value, and Average Price–Harvesting Sector Total, BSAI Crab Fisheries

| | Year | Sold weight (million lbs) | Ex-vessel value ($million) | Weighted average, price ($/lb) | Mean(sd), price ($/lb) |
|---|---|---|---|---|---|
| AIG | 1998 | 5.44 | $16.93 | $3.11 | $3.16(0.22) |
| | 1999 | 5.10 | $24.65 | $4.83 | - |
| | 2000 | 5.95 | $30.32 | $5.10 | - |
| | 2001 | 6.38 | $33.05 | $5.18 | $5.24(0.58) |
| | 2002 | 5.54 | $29.59 | $5.34 | - |
| | 2003 | 5.82 | $31.68 | $5.44 | - |
| | 2004 | 6.02 | $28.18 | $4.68 | $4.67(0.11) |
| | 2005 | 4.44 | $15.49 | $3.49 | $3.46(0.30) |
| | 2006 | 5.24 | $12.62 | $2.41 | $2.57(0.42) |
| | 2007 | 5.44 | $14.62 | $2.69 | $2.72(0.36) |
| | 2008 | 5.73 | $21.75 | $3.80 | * |
| | 2009 | 5.51 | $16.11 | $2.92 | * |
| | 2010 | 6.09 | $25.17 | $4.13 | * |
| | 2011 | 6.00 | $28.55 | $4.76 | * |
| | 2012 | 5.92 | $23.76 | $4.01 | $3.97(0.35) |
| | 2013 | 5.81 | $23.56 | $4.05 | $4.04(0.35) |
| BBR | 1998 | 14.70 | $63.32 | $4.31 | $4.34(0.79) |
| | 1999 | 11.53 | $112.50 | $9.76 | - |
| | 2000 | 8.07 | $57.48 | $7.12 | - |
| | 2001 | 8.30 | $62.05 | $7.48 | $7.48(0.62) |
| | 2002 | 9.48 | $91.31 | $9.63 | - |
| | 2003 | 15.39 | $119.59 | $7.77 | - |
| | 2004 | 15.02 | $101.17 | $6.74 | $6.77(0.33) |
| | 2005 | 18.14 | $108.78 | $6.00 | $5.96(0.18) |
| | 2006 | 15.55 | $74.48 | $4.79 | $4.81(0.23) |
| | 2007 | 20.17 | $109.73 | $5.44 | $5.52(0.65) |
| | 2008 | 20.13 | $121.55 | $6.04 | $5.98(0.34) |
| | 2009 | 15.78 | $87.09 | $5.52 | $5.56(0.20) |
| | 2010 | 14.73 | $118.59 | $8.05 | $8.11(0.70) |
| | 2011 | 7.79 | $83.71 | $10.75 | $10.82(1.44) |
| | 2012 | 7.80 | $64.49 | $8.26 | $8.33(0.42) |
| | 2013 | 8.52 | $60.89 | $7.15 | $7.26(0.50) |
| BSS | 1998 | 249.05 | $228.52 | $0.92 | $0.92(0.06) |
| | 1999 | 192.41 | $294.56 | $1.53 | - |
| | 2000 | 32.81 | $91.18 | $2.78 | - |
| | 2001 | 24.78 | $59.47 | $2.40 | $2.41(0.15) |
| | 2002 | 31.94 | $68.48 | $2.14 | - |
| | 2003 | 27.51 | $76.86 | $2.79 | - |
| | 2004 | 23.69 | $69.26 | $2.92 | $2.93(0.11) |
| | 2005 | 24.86 | $56.54 | $2.27 | $2.40(0.24) |
| | 2006 | 38.02 | $53.07 | $1.40 | $1.41(0.18) |
| | 2007 | 34.76 | $72.95 | $2.10 | $2.09(0.25) |
| | 2008 | 62.23 | $123.89 | $1.99 | $2.09(0.52) |
| | 2009 | 57.68 | $99.13 | $1.72 | $1.74(0.25) |
| | 2010 | 47.84 | $67.10 | $1.40 | $1.41(0.21) |
| | 2011 | 54.05 | $142.38 | $2.63 | $2.66(0.33) |
| | 2012 | 88.23 | $198.85 | $2.25 | $2.29(0.23) |
| | 2013 | 65.49 | $152.15 | $2.32 | $2.39(0.11) |

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Table 4.5: Continued

| | Year | Sold weight (million lbs) | Ex-vessel value ($million) | Weighted average, price ($/lb) | Mean(sd), price ($/lb) |
|---|---|---|---|---|---|
| BST | 2005 | 0.26 | * | * | * |
| | 2006 | 0.99 | $1.91 | $1.93 | $1.83(0.43) |
| | 2007 | 2.25 | $4.97 | $2.21 | $2.19(0.71) |
| | 2008 | 2.33 | $5.11 | $2.19 | $2.16(0.27) |
| | 2009 | 2.14 | $4.91 | $2.30 | $2.27(0.20) |
| | 2010 | 0.37 | * | * | * |
| | 2013 | 1.19 | $2.94 | $2.47 | $2.47(0.68) |
| NSR | 1998 | 0.03 | $0.07 | $2.61 | - |
| | 1999 | 0.03 | $0.15 | $5.06 | - |
| | 2000 | 0.32 | $1.49 | $4.67 | - |
| | 2001 | 0.28 | $1.67 | $6.02 | - |
| | 2002 | 0.26 | $2.43 | $9.37 | - |
| | 2003 | 0.28 | $1.68 | $5.98 | - |
| | 2004 | 0.33 | $1.48 | $4.42 | - |
| | 2005 | 0.40 | $1.82 | $4.58 | - |
| | 2006 | 0.44 | $1.41 | $3.17 | - |
| | 2007 | 0.32 | $1.10 | $3.48 | - |
| | 2008 | 0.40 | $1.67 | $4.18 | - |
| | 2009 | 0.40 | $1.49 | $3.76 | - |
| | 2010 | 0.42 | $1.71 | $4.06 | - |
| | 2011 | 0.40 | $2.17 | $5.37 | - |
| | 2012 | 0.50 | $2.82 | $5.68 | - |
| | 2013 | 0.44 | $2.56 | $5.78 | - |
| PIG | 1998 | * | * | * | - |
| | 1999 | * | * | * | - |
| | 2000 | 0.12 | $0.64 | $5.23 | - |
| | 2001 | * | * | * | - |
| | 2002 | * | * | * | - |
| | 2003 | * | * | * | - |
| | 2004 | * | * | * | - |
| | 2005 | * | * | * | - |
| | 2010 | * | * | * | - |
| | 2011 | * | * | * | - |
| | 2012 | * | * | * | - |
| | 2013 | * | * | * | - |

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Table 4.5: Continued

| | Year | Sold weight (million lbs) | Ex-vessel value ($million) | Weighted average, price ($/lb) | Mean(sd), price ($/lb) |
|---|---|---|---|---|---|
| PIK | 1998 | 1.03 | $3.95 | $3.84 | $3.92(0.62) |
| SMB | 1998 | 2.95 | $9.01 | $3.06 | $3.09(0.24) |
| | 2009 | 0.45 | $1.56 | $3.46 | $3.52(0.30) |
| | 2010 | 1.25 | $6.63 | $5.29 | $5.37(0.28) |
| | 2011 | 1.85 | $10.06 | $5.44 | $5.81(0.62) |
| | 2012 | 1.59 | $6.96 | $4.36 | $4.38(0.26) |
| WAI | 1998 | * | * | * | * |
| | 2002 | 0.50 | $4.82 | $9.60 | - |
| | 2003 | 0.48 | $3.69 | $7.77 | - |

**Notes:** 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 sales revenue to aggregate sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over price observations by vessel or processor (i.e., each price observation is weighted equally), with standard deviation (sd) reported to indicate relative variability over vessel-level observations, noting that large standard deviations are likely indicative of a non-symmetrical distribution.
[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.

**Source:** ADF&G fish ticket data, eLandings, CFEC ex-vessel pricing, ADF&G Commercial Operator's Annual Report, NMFS AFSC BSAI Crab Economic Data Report (EDR) database

Table 4.6: Ex-vessel Price and Share of Fishery-Year Landings by Owner or Leaseholder State of Residence, Catcher Vessels–CR Program Fisheries

| | | State | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| AIG | 98/01/04 | AK | 3(2) | - | - | * | * |
| | | WA | 43(18) | - | - | $4.40 | $4.49(0.97) |
| | | Other | 6(2) | - | - | * | * |
| | 2005 | WA | 8 | * | * | $3.51 | $3.41(0.27) |
| | | Other | 2 | * | * | * | * |
| | 2006 | WA | 5 | * | * | $2.40 | $2.51(0.21) |
| | | 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 | 3 | * | * | * | * |
| | | WA | 2 | * | * | * | * |
| | | Other | 1 | * | * | * | * |
| | 2013 | AK | 3 | * | * | * | * |
| | | WA | 2 | * | * | * | * |
| | | Other | 1 | * | * | * | * |
| SMB | 98/01/04 | AK | 20(20) | - | - | $3.02 | $3.03(0.09) |
| | | WA | 61(61) | - | - | $3.07 | $3.12(0.28) |
| | | Other | 14(14) | - | - | $3.03 | $3.04(0.11) |
| | 2009 | AK | 1 | * | * | * | * |
| | | WA | 5 | * | * | $3.52 | $3.57(0.32) |
| | | Other | 1 | * | * | * | * |
| | 2010 | AK | 3 | * | * | * | * |
| | | WA | 5 | 47% | 49% | $5.49 | $5.49(0.07) |
| | | Other | 2 | * | * | * | * |
| | 2011 | AK | 6 | * | * | $5.71 | $5.95(0.65) |
| | | WA | 9 | 50% | 50% | $5.44 | $5.81(0.56) |
| | | Other | 3 | * | * | * | * |
| | 2012 | AK | 6 | * | * | $4.40 | $4.38(0.24) |
| | | WA | 9 | 50% | 50% | $4.29 | $4.34(0.29) |
| | | Other | 2 | * | * | * | * |



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Table 4.6: Continued

| | | State | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BSS | 98/01/04 | AK | 100(41) | - | - | $1.22 | $2.06(0.89) |
| | | WA | 354(143) | - | - | $1.23 | $2.09(0.86) |
| | | Other | 70(30) | - | - | $1.23 | $2.06(0.86) |
| | 2005 | AK | 29 | 16% | 17% | $2.42 | $2.42(0.04) |
| | | WA | 103 | 73% | 71% | $2.22 | $2.39(0.28) |
| | | Other | 18 | 11% | 12% | $2.43 | $2.44(0.11) |
| | 2006 | AK | 17 | 20% | 20% | $1.37 | $1.39(0.09) |
| | | WA | 48 | 67% | 67% | $1.40 | $1.41(0.21) |
| | | Other | 9 | 13% | 13% | $1.42 | $1.42(0.17) |
| | 2007 | AK | 14 | 23% | 23% | $2.07 | $2.09(0.23) |
| | | WA | 43 | 66% | 66% | $2.11 | $2.10(0.27) |
| | | Other | 7 | 11% | 11% | $2.07 | $2.02(0.16) |
| | 2008 | AK | 15 | 22% | 21% | $1.94 | $1.97(0.31) |
| | | WA | 50 | 66% | 69% | $2.05 | $2.14(0.56) |
| | | Other | 9 | 12% | 11% | $1.74 | $1.94(0.47) |
| | 2009 | AK | 19 | 32% | 33% | $1.75 | $1.79(0.37) |
| | | WA | 45 | 59% | 59% | $1.71 | $1.72(0.18) |
| | | Other | 9 | 9% | 9% | $1.66 | $1.70(0.24) |
| | 2010 | AK | 14 | 23% | 23% | $1.41 | $1.42(0.08) |
| | | WA | 40 | 65% | 65% | $1.41 | $1.41(0.26) |
| | | Other | 12 | 11% | 11% | $1.37 | $1.39(0.11) |
| | 2011 | AK | 15 | 24% | 24% | $2.63 | $2.68(0.16) |
| | | WA | 40 | 62% | 63% | $2.64 | $2.63(0.41) |
| | | Other | 11 | 14% | 13% | $2.61 | $2.70(0.20) |
| | 2012 | AK | 21 | 28% | 28% | $2.22 | $2.24(0.35) |
| | | WA | 44 | 63% | 63% | $2.27 | $2.32(0.16) |
| | | Other | 6 | 9% | 9% | $2.22 | $2.30(0.15) |
| | 2013 | AK | 21 | 29% | 29% | $2.31 | $2.38(0.10) |
| | | WA | 42 | 63% | 63% | $2.33 | $2.39(0.11) |
| | | Other | 6 | 8% | 8% | $2.31 | $2.38(0.09) |

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Table 4.6: Continued

| | | State | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BBR | 98/01/04 | AK | 122(49) | - | - | $6.13 | $6.17(1.47) |
| | | WA | 429(174) | - | - | $6.03 | $6.20(1.46) |
| | | Other | 82(33) | - | - | $5.91 | $6.27(1.41) |
| | 2005 | AK | 19 | 16% | 16% | $5.95 | $5.91(0.21) |
| | | WA | 53 | 69% | 70% | $6.01 | $5.98(0.15) |
| | | Other | 13 | 14% | 14% | $6.00 | $5.94(0.22) |
| | 2006 | AK | 24 | 24% | 23% | $4.76 | $4.79(0.24) |
| | | WA | 48 | 66% | 67% | $4.81 | $4.84(0.22) |
| | | Other | 8 | 10% | 10% | $4.74 | $4.74(0.21) |
| | 2007 | AK | 17 | 22% | 23% | $5.46 | $5.54(1.20) |
| | | WA | 44 | 67% | 68% | $5.44 | $5.51(0.42) |
| | | Other | 9 | 10% | 10% | $5.27 | $5.49(0.25) |
| | 2008 | AK | 17 | 20% | 20% | $6.22 | $6.08(0.60) |
| | | WA | 51 | 71% | 71% | $5.99 | $5.95(0.20) |
| | | Other | 8 | 9% | 9% | $6.03 | $5.97(0.14) |
| | 2009 | AK | 19 | 28% | 28% | $5.47 | $5.53(0.16) |
| | | WA | 40 | 62% | 62% | $5.55 | $5.58(0.17) |
| | | Other | 9 | 10% | 10% | $5.47 | $5.56(0.36) |
| | 2010 | AK | 12 | 25% | 24% | $7.92 | $7.97(0.77) |
| | | WA | 38 | 62% | 63% | $8.15 | $8.24(0.64) |
| | | Other | 13 | 14% | 13% | $7.83 | $7.85(0.69) |
| | 2011 | AK | 12 | 23% | 22% | $10.22 | $10.65(1.18) |
| | | WA | 36 | 60% | 61% | $11.02 | $11.08(1.22) |
| | | Other | 11 | 17% | 17% | $10.51 | $10.21(2.09) |
| | 2012 | AK | 17 | 30% | 31% | $8.35 | $8.38(0.45) |
| | | WA | 40 | 63% | 63% | $8.25 | $8.33(0.37) |
| | | Other | 6 | 7% | 7% | $8.02 | $8.19(0.65) |
| | 2013 | AK | 18 | 34% | 34% | $7.13 | $7.15(0.33) |
| | | WA | 36 | 57% | 57% | $7.18 | $7.37(0.57) |
| | | Other | 7 | 9% | 8% | $7.06 | $6.98(0.39) |

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Table 4.6: Continued

| | | State | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BST | 2005 | AK | 1 | * | * | * | * |
| | | WA | 3 | * | * | * | * |
| | 2006 | AK | 6 | 11% | 12% | $1.98 | $1.81(0.32) |
| | | WA | 30 | 81% | 81% | $1.93 | $1.88(0.46) |
| | | Other | 5 | 7% | 7% | $1.85 | $1.52(0.25) |
| | 2007 | AK | 7 | * | * | $2.13 | $2.12(0.30) |
| | | WA | 17 | 55% | 57% | $2.32 | $2.22(0.86) |
| | | Other | 3 | * | * | * | * |
| | 2008 | AK | 6 | * | * | $1.93 | $1.80(0.50) |
| | | WA | 19 | 61% | 61% | $2.18 | $2.20(0.17) |
| | | Other | 4 | * | * | * | * |
| | 2009 | AK | 5 | * | * | $2.31 | $2.30(0.13) |
| | | WA | 10 | 43% | 41% | $2.20 | $2.24(0.22) |
| | | Other | 2 | * | * | * | * |
| | 2010 | AK | 1 | * | * | * | * |
| | | WA | 1 | * | * | * | * |
| | | Other | 2 | * | * | * | * |
| | 2013 | AK | 6 | * | * | $1.93 | $1.95(0.99) |
| | | WA | 10 | 49% | 51% | $2.58 | $2.59(0.35) |
| | | Other | 3 | * | * | * | * |
| PIK | 98/01/04 | AK | 12(12) | - | - | $3.91 | $4.11(0.86) |
| | | WA | 28(28) | - | - | $4.17 | $4.00(0.78) |
| | | Other | 5(5) | - | - | $3.72 | $3.74(0.07) |
| WAI | 98/01/04 | WA | 2(2) | - | - | * | * |
| | | Other | 1(1) | - | - | * | * |

**Notes:** See footnote on previous table regarding weighted and mean price. 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.

[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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.7: Ex-vessel Price and Share of Fishery-Year Landings by Vessel Length, CR Program Fisheries

| | | Length | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| AIG | 98/01/04 | 85'-99' | 12(5) | - | - | $4.19 | $4.30(0.90) |
| | | 100'-124' | 16(7) | - | - | $4.67 | $4.79(1.06) |
| | | 125' and over | 24(10) | - | - | $4.41 | $4.37(0.85) |
| | 2005 | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 3 | * | * | * | * |
| | | 125' and over | 6 | * | * | $3.49 | $3.51(0.33) |
| | 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 | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 4 | * | * | * | * |
| | | 125' and over | 1 | * | * | * | * |
| | 2013 | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 4 | * | * | * | * |
| | | 125' and over | 1 | * | * | * | * |

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Table 4.7: Continued

| | | Length | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BST | 2005 | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 1 | * | * | * | * |
| | | 125' and over | 2 | * | * | * | * |
| | 2006 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 5 | * | * | $1.88 | $1.78(0.28) |
| | | 100'-124' | 22 | 0.70% | 0.69% | $1.91 | $1.79(0.28) |
| | | 125' and over | 12 | 0.16% | 0.16% | $1.93 | $1.77(0.32) |
| | 2007 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 2 | * | * | * | * |
| | | 100'-124' | 16 | 0.52% | 0.49% | $2.08 | $2.11(0.34) |
| | | 125' and over | 7 | * | * | $2.26 | $2.04(0.53) |
| | 2008 | Under 85' | 3 | * | * | * | * |
| | | 85'-99' | 4 | * | * | * | * |
| | | 100'-124' | 17 | 0.60% | 0.60% | $2.19 | $2.14(0.25) |
| | | 125' and over | 5 | 0.13% | 0.13% | $2.14 | $2.23(0.20) |
| | 2009 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 11 | 0.77% | 0.80% | $2.36 | $2.33(0.20) |
| | | 125' and over | 3 | * | * | * | * |
| | 2010 | Under 85' | 1 | * | * | * | * |
| | | 100'-124' | 3 | * | * | * | * |
| | 2013 | 85'-99' | 7 | * | * | $2.73 | $2.71(0.32) |
| | | 100'-124' | 11 | 0.56% | 0.53% | $2.31 | $2.32(0.80) |
| | | 125' and over | 1 | * | * | * | * |

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Table 4.7: Continued

| | | Length | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BBR | 98/01/04 | Under 85' | 44(23) | - | - | $5.92 | $6.14(1.41) |
| | | 85'-99' | 129(59) | - | - | $6.12 | $6.20(1.48) |
| | | 100'-124' | 298(118) | - | - | $6.01 | $6.23(1.44) |
| | | 125' and over | 162(69) | - | - | $6.04 | $6.17(1.49) |
| | 2005 | Under 85' | 3 | * | * | * | * |
| | | 85'-99' | 12 | * | * | $5.98 | $5.92(0.18) |
| | | 100'-124' | 46 | 0.44% | 0.44% | $5.98 | $5.95(0.21) |
| | | 125' and over | 24 | 0.42% | 0.42% | $6.02 | $5.99(0.11) |
| | 2006 | Under 85' | 3 | * | * | * | * |
| | | 85'-99' | 12 | * | * | $4.79 | $4.90(0.20) |
| | | 100'-124' | 44 | 0.46% | 0.46% | $4.77 | $4.79(0.24) |
| | | 125' and over | 21 | 0.41% | 0.42% | $4.81 | $4.83(0.21) |
| | 2007 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 9 | * | * | $5.36 | $5.24(1.18) |
| | | 100'-124' | 40 | 0.49% | 0.49% | $5.42 | $5.54(0.51) |
| | | 125' and over | 20 | 0.39% | 0.39% | $5.45 | $5.58(0.57) |
| | 2008 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 10 | * | * | $6.41 | $5.89(0.30) |
| | | 100'-124' | 43 | 0.50% | 0.50% | $6.04 | $6.02(0.40) |
| | | 125' and over | 21 | 0.37% | 0.37% | $5.96 | $5.95(0.13) |
| | 2009 | Under 85' | 3 | * | * | * | * |
| | | 85'-99' | 9 | * | * | $5.49 | $5.49(0.22) |
| | | 100'-124' | 35 | 0.46% | 0.46% | $5.53 | $5.59(0.19) |
| | | 125' and over | 21 | 0.39% | 0.39% | $5.52 | $5.56(0.19) |
| | 2010 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 8 | * | * | $7.82 | $8.02(0.60) |
| | | 100'-124' | 33 | 0.45% | 0.45% | $8.01 | $8.05(0.82) |
| | | 125' and over | 21 | 0.44% | 0.44% | $8.13 | $8.23(0.49) |
| | 2011 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 8 | * | * | $9.67 | $10.32(1.04) |
| | | 100'-124' | 29 | 0.39% | 0.39% | $10.89 | $10.90(1.35) |
| | | 125' and over | 21 | 0.48% | 0.48% | $10.87 | $10.92(1.71) |
| | 2012 | Under 85' | 3 | * | * | * | * |
| | | 85'-99' | 22 | * | * | $8.17 | $8.29(0.50) |
| | | 100'-124' | 32 | 0.59% | 0.59% | $8.34 | $8.39(0.36) |
| | | 125' and over | 6 | 0.09% | 0.09% | $8.05 | $8.18(0.41) |
| | 2013 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 21 | 0.26% | 0.26% | $7.07 | $7.22(0.42) |
| | | 100'-124' | 34 | 0.62% | 0.62% | $7.17 | $7.28(0.58) |
| | | 125' and over | 4 | * | * | * | * |

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Table 4.7: Continued

| | | Length | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BSS | 98/01/04 | Under 85' | 25(14) | - | - | $1.19 | $2.12(0.89) |
| | | 85'-99' | 103(51) | - | - | $1.15 | $1.98(0.88) |
| | | 100'-124' | 245(98) | - | - | $1.24 | $2.09(0.85) |
| | | 125' and over | 151(63) | - | - | $1.25 | $2.13(0.88) |
| | 2005 | Under 85' | 5 | 0.02% | 0.02% | $2.40 | $2.40(0.00) |
| | | 85'-99' | 25 | 0.20% | 0.15% | $1.76 | $2.33(0.44) |
| | | 100'-124' | 77 | 0.48% | 0.51% | $2.40 | $2.42(0.21) |
| | | 125' and over | 43 | 0.30% | 0.32% | $2.40 | $2.40(0.06) |
| | 2006 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 8 | * | * | $1.36 | $1.39(0.44) |
| | | 100'-124' | 39 | 0.41% | 0.41% | $1.41 | $1.41(0.11) |
| | | 125' and over | 25 | 0.49% | 0.49% | $1.39 | $1.40(0.15) |
| | 2007 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 7 | * | * | $2.04 | $1.97(0.19) |
| | | 100'-124' | 35 | 0.44% | 0.43% | $2.07 | $2.07(0.25) |
| | | 125' and over | 20 | 0.45% | 0.46% | $2.13 | $2.12(0.27) |
| | 2008 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 9 | * | * | $1.98 | $2.36(1.39) |
| | | 100'-124' | 43 | 0.51% | 0.51% | $2.01 | $2.05(0.20) |
| | | 125' and over | 21 | 0.39% | 0.38% | $1.96 | $2.03(0.29) |
| | 2009 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 8 | * | * | $1.67 | $1.72(0.09) |
| | | 100'-124' | 40 | 0.46% | 0.45% | $1.69 | $1.71(0.21) |
| | | 125' and over | 23 | 0.43% | 0.44% | $1.76 | $1.78(0.36) |
| | 2010 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 9 | * | * | $1.39 | $1.42(0.08) |
| | | 100'-124' | 33 | 0.43% | 0.44% | $1.41 | $1.41(0.28) |
| | | 125' and over | 22 | 0.47% | 0.47% | $1.40 | $1.39(0.13) |
| | 2011 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 9 | * | * | $3.21 | $2.73(0.14) |
| | | 100'-124' | 33 | 0.44% | 0.43% | $2.58 | $2.63(0.40) |
| | | 125' and over | 23 | 0.46% | 0.45% | $2.59 | $2.65(0.29) |
| | 2012 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 26 | * | * | $2.19 | $2.24(0.32) |
| | | 100'-124' | 36 | 0.54% | 0.55% | $2.29 | $2.34(0.13) |
| | | 125' and over | 7 | 0.13% | 0.13% | $2.27 | $2.31(0.14) |
| | 2013 | Under 85' | 2 | * | * | * | * |
| | | 85'-99' | 26 | * | * | $2.34 | $2.40(0.09) |
| | | 100'-124' | 34 | 0.56% | 0.56% | $2.32 | $2.37(0.11) |
| | | 125' and over | 7 | 0.12% | 0.12% | $2.31 | $2.38(0.08) |

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Table 4.7: Continued

| | | Length | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| PIK | 98/01/04 | Under 85' | 9(9) | - | - | $4.21 | $4.37(1.11) |
| | | 85'-99' | 12(12) | - | - | $3.93 | $3.88(0.35) |
| | | 100'-124' | 17(17) | - | - | $3.85 | $3.83(0.46) |
| | | 125' and over | 7(7) | - | - | $4.48 | $4.15(1.18) |
| SMB | 98/01/04 | Under 85' | 2(2) | - | - | * | * |
| | | 85'-99' | 17(17) | - | - | $3.08 | $3.10(0.31) |
| | | 100'-124' | 48(48) | - | - | $3.03 | $3.08(0.24) |
| | | 125' and over | 28(28) | - | - | $3.09 | $3.11(0.17) |
| | 2009 | 100'-124' | 5 | * | * | $3.47 | $3.55(0.26) |
| | | 125' and over | 2 | * | * | * | * |
| | 2010 | 100'-124' | 8 | * | * | $5.26 | $5.34(0.30) |
| | | 125' and over | 2 | * | * | * | * |
| | 2011 | Under 85' | 1 | * | * | * | * |
| | | 85'-99' | 1 | * | * | * | * |
| | | 100'-124' | 9 | 0.71% | 0.69% | $5.32 | $5.66(0.68) |
| | | 125' and over | 7 | * | * | $5.75 | $6.04(0.48) |
| | 2012 | 85'-99' | 5 | * | * | $4.39 | $4.42(0.19) |
| | | 100'-124' | 11 | 0.59% | 0.59% | $4.37 | $4.39(0.29) |
| | | 125' and over | 1 | * | * | * | * |
| WAI | 98/01/04 | 100'-124' | 1(1) | - | - | * | * |
| | | 125' and over | 2(2) | - | - | * | * |

**Notes:** See footnote on previous table regarding weighted and mean price. 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.

[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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.8: Ex-vessel Price and Share of Fishery-Year Landings by Quota Type, Catcher Vessels, CR Program Fisheries

| | | Type | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| AIG | 1998 | N/A | 13 | - | - | $3.11 | $3.16(0.22) |
| | 2001 | N/A | 19 | - | - | $5.18 | $5.24(0.58) |
| | 2004 | N/A | 20 | - | - | $4.68 | $4.67(0.11) |
| | 2005 | ALL | 10 | - | - | $3.49 | $3.46(0.30) |
| | 2006 | ALL | 6 | - | - | $2.41 | $2.57(0.42) |
| | | CVC/CPC | 3 | * | * | * | * |
| | | CVOA | 6 | 75% | 72% | $2.29 | $2.36(0.17) |
| | | CVOB/CPO/CDQ/ADAK | 5 | 23% | 27% | $2.78 | $2.80(0.59) |
| | 2007 | ALL | 6 | - | - | $2.69 | $2.72(0.36) |
| | | CVC/CPC | 3 | * | * | * | * |
| | | CVOA | 5 | 81% | 81% | $2.70 | $2.74(0.34) |
| | | CVOB/CPO/CDQ/ADAK | 6 | 17% | 16% | $2.60 | $2.63(0.43) |
| | 2008 | ALL | 4 | - | - | * | * |
| | | CVC/CPC | 4 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | * | * | * | * |
| | 2009 | ALL | 4 | - | - | * | * |
| | | CVC/CPC | 4 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | * | * | * | * |
| | 2010 | ALL | 4 | - | - | * | * |
| | | CVC/CPC | 4 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | * | * | * | * |
| | 2011 | ALL | 4 | - | - | * | * |
| | | CVC/CPC | 4 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 4 | * | * | * | * |
| | 2012 | ALL | 6 | - | - | $4.01 | $3.97(0.35) |
| | | CVC/CPC | 4 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 6 | 36% | 35% | $3.92 | $3.93(0.28) |
| | 2013 | ALL | 6 | - | - | $4.05 | $4.04(0.35) |
| | | CVC/CPC | 5 | 3% | 3% | $4.01 | $4.00(0.47) |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 6 | 41% | 39% | $3.84 | $3.93(0.31) |

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Table 4.8: Continued

| | | Type | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BBR | 1998 | N/A | 206 | - | - | $4.31 | $4.34(0.79) |
| | 2001 | N/A | 197 | - | - | $7.48 | $7.48(0.62) |
| | 2004 | N/A | 230 | - | - | $6.74 | $6.77(0.33) |
| | 2005 | ALL | 85 | - | - | $6.00 | $5.96(0.18) |
| | 2006 | ALL | 80 | - | - | $4.79 | $4.81(0.23) |
| | | CVC/CPC | 49 | 4% | 3% | $4.74 | $4.83(0.26) |
| | | CVOA | 77 | 77% | 77% | $4.78 | $4.78(0.21) |
| | | CVOB/CPO/CDQ/ADAK | 65 | 19% | 19% | $4.85 | $4.85(0.22) |
| | 2007 | ALL | 70 | - | - | $5.44 | $5.52(0.65) |
| | | CVC/CPC | 41 | 3% | 3% | $5.31 | $5.66(0.65) |
| | | CVOA | 69 | 78% | 78% | $5.43 | $5.45(0.31) |
| | | CVOB/CPO/CDQ/ADAK | 53 | 19% | 19% | $5.43 | $5.50(0.93) |
| | 2008 | ALL | 76 | - | - | $6.04 | $5.98(0.34) |
| | | CVC/CPC | 38 | 2% | 2% | $6.02 | $6.02(0.18) |
| | | CVOA | 73 | 76% | 76% | $6.05 | $5.97(0.46) |
| | | CVOB/CPO/CDQ/ADAK | 56 | 22% | 22% | $5.99 | $5.97(0.20) |
| | 2009 | ALL | 68 | - | - | $5.52 | $5.56(0.20) |
| | | CVC/CPC | 39 | 3% | 3% | $5.59 | $5.63(0.24) |
| | | CVOA | 68 | 77% | 77% | $5.50 | $5.50(0.11) |
| | | CVOB/CPO/CDQ/ADAK | 53 | 20% | 20% | $5.57 | $5.60(0.23) |
| | 2010 | ALL | 63 | - | - | $8.05 | $8.11(0.70) |
| | | CVC/CPC | 33 | 4% | 4% | $7.94 | $8.29(0.63) |
| | | CVOA | 63 | 76% | 76% | $7.97 | $7.95(0.52) |
| | | CVOB/CPO/CDQ/ADAK | 52 | 20% | 21% | $8.36 | $8.19(0.88) |
| | 2011 | ALL | 59 | - | - | $10.75 | $10.82(1.44) |
| | | CVC/CPC | 34 | 2% | 2% | $10.23 | $10.94(1.85) |
| | | CVOA | 58 | 79% | 78% | $10.66 | $10.62(0.96) |
| | | CVOB/CPO/CDQ/ADAK | 48 | 19% | 20% | $11.19 | $10.99(1.60) |
| | 2012 | ALL | 63 | - | - | $8.26 | $8.33(0.42) |
| | | CVC/CPC | 33 | 3% | 3% | $8.50 | $8.46(0.42) |
| | | CVOA | 61 | 77% | 76% | $8.20 | $8.20(0.42) |
| | | CVOB/CPO/CDQ/ADAK | 47 | 21% | 21% | $8.48 | $8.43(0.36) |
| | 2013 | ALL | 61 | - | - | $7.15 | $7.26(0.50) |
| | | CVC/CPC | 30 | 2% | 3% | $7.35 | $7.39(0.35) |
| | | CVOA | 58 | 76% | 76% | $7.08 | $7.06(0.31) |
| | | CVOB/CPO/CDQ/ADAK | 51 | 21% | 22% | $7.38 | $7.42(0.66) |

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Table 4.8: Continued

| | | Type | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BSS | 1998 | N/A | 176 | - | - | $0.92 | $0.92(0.06) |
| | 2001 | N/A | 173 | - | - | $2.40 | $2.41(0.15) |
| | 2004 | N/A | 175 | - | - | $2.92 | $2.93(0.11) |
| | 2005 | N/A | 150 | - | - | $2.27 | $2.40(0.24) |
| | 2006 | ALL | 74 | - | - | $1.40 | $1.41(0.18) |
| | | CVC/CPC | 52 | 3% | 3% | $1.44 | $1.42(0.11) |
| | | CVOA | 73 | 80% | 79% | $1.39 | $1.39(0.14) |
| | | CVOB/CPO/CDQ/ADAK | 63 | 18% | 18% | $1.41 | $1.41(0.26) |
| | 2007 | ALL | 64 | - | - | $2.10 | $2.09(0.25) |
| | | CVC/CPC | 41 | 3% | 3% | $2.03 | $2.07(0.30) |
| | | CVOA | 62 | 80% | 80% | $2.09 | $2.10(0.17) |
| | | CVOB/CPO/CDQ/ADAK | 53 | 17% | 18% | $2.14 | $2.08(0.29) |
| | 2008 | ALL | 74 | - | - | $1.99 | $2.09(0.52) |
| | | CVC/CPC | 42 | 3% | 3% | $2.16 | $2.14(0.05) |
| | | CVOA | 73 | 75% | 75% | $2.00 | $1.97(0.23) |
| | | CVOB/CPO/CDQ/ADAK | 62 | 22% | 22% | $1.95 | $2.18(0.82) |
| | 2009 | ALL | 73 | - | - | $1.72 | $1.74(0.25) |
| | | CVC/CPC | 40 | 2% | 3% | $1.87 | $1.83(0.36) |
| | | CVOA | 73 | 78% | 78% | $1.71 | $1.69(0.18) |
| | | CVOB/CPO/CDQ/ADAK | 59 | 19% | 19% | $1.72 | $1.72(0.23) |
| | 2010 | ALL | 66 | - | - | $1.40 | $1.41(0.21) |
| | | CVC/CPC | 38 | 3% | 3% | $1.30 | $1.41(0.24) |
| | | CVOA | 66 | 73% | 73% | $1.40 | $1.42(0.22) |
| | | CVOB/CPO/CDQ/ADAK | 53 | 24% | 24% | $1.41 | $1.39(0.18) |
| | 2011 | ALL | 66 | - | - | $2.63 | $2.66(0.33) |
| | | CVC/CPC | 37 | 2% | 2% | $2.66 | $2.72(0.35) |
| | | CVOA | 63 | 75% | 74% | $2.61 | $2.54(0.25) |
| | | CVOB/CPO/CDQ/ADAK | 60 | 23% | 23% | $2.71 | $2.73(0.37) |
| | 2012 | ALL | 71 | - | - | $2.25 | $2.29(0.23) |
| | | CVC/CPC | 41 | 3% | 4% | $2.42 | $2.40(0.18) |
| | | CVOA | 68 | 76% | 75% | $2.22 | $2.22(0.11) |
| | | CVOB/CPO/CDQ/ADAK | 64 | 21% | 22% | $2.36 | $2.31(0.32) |
| | 2013 | ALL | 69 | - | - | $2.32 | $2.39(0.11) |
| | | CVC/CPC | 38 | 3% | 3% | $2.46 | $2.46(0.06) |
| | | CVOA | 67 | 74% | 73% | $2.29 | $2.30(0.06) |
| | | CVOB/CPO/CDQ/ADAK | 58 | 23% | 24% | $2.41 | $2.44(0.10) |

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Table 4.8: Continued

| | | Type | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| BST | 2005 | ALL | 4 | - | - | * | * |
| | 2006 | ALL | 41 | - | - | $1.93 | $1.83(0.43) |
| | | CVC/CPC | 12 | 2% | 2% | $1.81 | $1.84(0.31) |
| | | CVOA | 39 | 75% | 74% | $1.90 | $1.80(0.53) |
| | | CVOB/CPO/CDQ/ADAK | 14 | 23% | 24% | $2.01 | $1.90(0.17) |
| | 2007 | ALL | 27 | - | - | $2.21 | $2.19(0.71) |
| | | CVC/CPC | 9 | 1% | 1% | $2.08 | $1.93(0.65) |
| | | CVOA | 28 | 87% | 87% | $2.21 | $2.29(0.85) |
| | | CVOB/CPO/CDQ/ADAK | 14 | 12% | 12% | $2.23 | $2.19(0.36) |
| | 2008 | ALL | 29 | - | - | $2.19 | $2.16(0.27) |
| | | CVC/CPC | 5 | 2% | 2% | $2.25 | $2.25(0.07) |
| | | CVOA | 26 | 73% | 72% | $2.16 | $2.14(0.28) |
| | | CVOB/CPO/CDQ/ADAK | 12 | 26% | 27% | $2.27 | $2.15(0.31) |
| | 2009 | ALL | 17 | - | - | $2.30 | $2.27(0.20) |
| | | CVC/CPC | 9 | 3% | 3% | $2.19 | $2.23(0.18) |
| | | CVOA | 17 | 75% | 74% | $2.27 | $2.24(0.20) |
| | | CVOB/CPO/CDQ/ADAK | 9 | 22% | 23% | $2.38 | $2.36(0.23) |
| | 2010 | ALL | 4 | - | - | * | * |
| | | CVC/CPC | 2 | * | * | * | * |
| | | CVOA | 4 | * | * | * | * |
| | | CVOB/CPO/CDQ/ADAK | 2 | * | * | * | * |
| | 2013 | CVC/CPC | 11 | 3% | 4% | $2.71 | $2.55(0.74) |
| | | CVOA | 17 | 76% | 76% | $2.49 | $2.33(0.69) |
| | | CVOB/CPO/CDQ/ADAK | 15 | 21% | 20% | $2.36 | $2.57(0.64) |

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Table 4.8: Continued

| | | Type | Vessels | Share of ex-vessel volume | Share of ex-vessel revenue | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| SMB | 1998 | N/A | 95 | - | - | $3.06 | $3.09(0.24) |
| | 2009 | ALL | 7 | - | - | $3.46 | $3.52(0.30) |
| | | CVC/CPC | 1 | * | * | * | * |
| | | CVOA | 7 | 95% | 95% | $3.44 | $3.41(0.23) |
| | | CVOB/CPO/CDQ/ADAK | 1 | * | * | * | * |
| | 2010 | ALL | 10 | - | - | $5.29 | $5.37(0.28) |
| | | CVC/CPC | 5 | 2% | 2% | $5.34 | $5.43(0.23) |
| | | CVOA | 10 | 79% | 78% | $5.25 | $5.28(0.36) |
| | | CVOB/CPO/CDQ/ADAK | 8 | 19% | 20% | $5.46 | $5.45(0.18) |
| | 2011 | ALL | 18 | - | - | $5.44 | $5.81(0.62) |
| | | CVC/CPC | 9 | 4% | 4% | $5.70 | $6.27(0.74) |
| | | CVOA | 18 | 79% | 78% | $5.32 | $5.43(0.40) |
| | | CVOB/CPO/CDQ/ADAK | 15 | 17% | 19% | $5.94 | $5.98(0.50) |
| | 2012 | ALL | 17 | - | - | $4.36 | $4.38(0.26) |
| | | CVC/CPC | 12 | 2% | 2% | $4.39 | $4.42(0.28) |
| | | CVOA | 17 | 77% | 77% | $4.35 | $4.33(0.20) |
| | | CVOB/CPO/CDQ/ADAK | 14 | 21% | 21% | $4.41 | $4.42(0.31) |
| WAI | 2001 | N/A | 3 | - | - | * | * |

**Notes:** 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.9: Estimated Finished Production, First Wholesale Value, and Price, CR Program Fisheries.

| | Year | Processing operations | Finished weight (million lbs) | First wholesale value ($million) | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| AIG | 1998 | 7 | 3.37 | $22.86 | $6.78 | $6.93(0.56) |
| | 1999 | 8 | 3.16 | $32.85 | $10.39 | $10.10(2.45) |
| | 2000 | 6 | 3.69 | $30.01 | $8.14 | $9.09(3.11) |
| | 2001 | 5 | 3.96 | $43.57 | $11.02 | $10.95(0.27) |
| | 2002 | 5 | 3.43 | $39.45 | $11.49 | $11.25(1.16) |
| | 2003 | 5 | 3.61 | $42.37 | $11.74 | $11.86(0.51) |
| | 2004 | 5 | 3.73 | $31.46 | $8.43 | $9.10(1.58) |
| | 2005 | 6 | 2.75 | $21.42 | $7.79 | $7.68(0.48) |
| | 2006 | 6 | 3.13 | $17.14 | $5.47 | $5.17(0.46) |
| | 2007 | 6 | 3.42 | $22.19 | $6.49 | $6.43(0.63) |
| | 2008 | 7 | 3.41 | $29.69 | $8.70 | $8.44(0.72) |
| | 2009 | 8 | 3.30 | $22.12 | $6.71 | $7.20(2.08) |
| | 2010 | 8 | 3.17 | $26.54 | $8.38 | $8.87(1.50) |
| | 2011 | 14 | 3.64 | $36.20 | $9.93 | $10.22(2.35) |
| | 2012 | 13 | 3.76 | $29.71 | $7.90 | $8.70(2.57) |
| | 2013 | 12 | 3.69 | $30.74 | $8.33 | $7.54(2.80) |
| BBR | 1998 | 22 | 9.79 | $87.48 | $8.93 | $8.74(1.41) |
| | 1999 | 21 | 7.68 | $134.43 | $17.50 | $17.43(2.09) |
| | 2000 | 20 | 5.38 | $56.69 | $10.54 | $12.89(2.39) |
| | 2001 | 20 | 5.53 | $75.42 | $13.65 | $14.32(1.85) |
| | 2002 | 20 | 6.32 | $112.09 | $17.75 | $17.76(2.35) |
| | 2003 | 25 | 10.25 | $151.90 | $14.82 | $14.57(1.47) |
| | 2004 | 23 | 10.01 | $132.37 | $13.23 | $13.41(0.75) |
| | 2005 | 16 | 12.08 | $136.27 | $11.28 | $11.46(0.99) |
| | 2006 | 15 | 9.17 | $85.29 | $9.30 | $8.98(1.12) |
| | 2007 | 17 | 13.09 | $132.75 | $10.14 | $10.05(0.85) |
| | 2008 | 16 | 13.31 | $149.27 | $11.22 | $10.66(2.88) |
| | 2009 | 15 | 10.40 | $111.96 | $10.76 | $10.36(1.32) |
| | 2010 | 16 | 10.03 | $141.97 | $14.16 | $14.12(1.82) |
| | 2011 | 18 | 5.30 | $103.60 | $19.53 | $18.15(3.66) |
| | 2012 | 16 | 5.27 | $78.70 | $14.93 | $15.14(4.43) |
| | 2013 | 17 | 5.75 | $75.56 | $13.14 | $12.97(3.88) |

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Table 4.9: Continued

| | Year | Processing operations | Finished weight (million lbs) | First wholesale value ($million) | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| BSS | 1998 | 33 | 164.27 | $539.28 | $3.28 | $3.20(0.46) |
| | 1999 | 31 | 126.92 | $571.37 | $4.50 | $4.32(0.89) |
| | 2000 | 24 | 21.64 | $113.24 | $5.23 | $5.99(1.44) |
| | 2001 | 21 | 16.34 | $94.62 | $5.79 | $5.72(0.44) |
| | 2002 | 21 | 21.06 | $116.05 | $5.51 | $5.60(0.68) |
| | 2003 | 19 | 18.15 | $121.20 | $6.68 | $6.67(0.35) |
| | 2004 | 21 | 15.62 | $107.54 | $6.88 | $6.81(0.42) |
| | 2005 | 20 | 16.40 | $84.10 | $5.13 | $4.88(0.66) |
| | 2006 | 13 | 24.92 | $86.02 | $3.45 | $3.44(0.24) |
| | 2007 | 18 | 22.66 | $109.40 | $4.83 | $4.96(0.42) |
| | 2008 | 16 | 41.02 | $184.13 | $4.49 | $4.37(1.24) |
| | 2009 | 16 | 35.97 | $146.88 | $4.08 | $4.08(0.19) |
| | 2010 | 12 | 31.41 | $112.42 | $3.58 | $3.66(0.32) |
| | 2011 | 16 | 37.89 | $215.59 | $5.69 | $5.87(0.76) |
| | 2012 | 15 | 57.79 | $278.85 | $4.82 | $4.57(1.57) |
| | 2013 | 15 | 42.90 | $208.88 | $4.87 | $4.67(1.39) |
| BST | 2005 | 4 | 0.18 | $0.94 | $5.25 | $4.75(0.73) |
| | 2006 | 9 | 0.72 | $3.12 | $4.34 | $4.20(0.35) |
| | 2007 | 9 | 1.46 | $7.78 | $5.33 | $5.31(0.36) |
| | 2008 | 10 | 1.34 | $6.76 | $5.06 | $5.07(0.26) |
| | 2009 | 10 | 1.39 | $6.19 | $4.46 | $4.45(0.81) |
| | 2010 | 7 | * | * | * | * |
| | 2013 | 12 | 0.82 | $5.16 | $6.33 | $6.75(1.37) |

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Table 4.9: Continued

| | Year | Processing operations | Finished weight (million lbs) | First wholesale value ($million) | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| PIK | 1998 | 12 | 0.67 | $6.00 | $9.00 | $8.84(1.07) |
| SMB | 1998 | 13 | 1.77 | $13.74 | $7.78 | $7.88(0.31) |
| | 2009 | 6 | * | * | * | * |
| | 2010 | 8 | 0.91 | $12.02 | $13.15 | $11.39(3.18) |
| | 2011 | 11 | 1.33 | $19.48 | $14.62 | $14.20(2.82) |
| | 2012 | 10 | 1.18 | $14.32 | $12.18 | $11.30(4.41) |
| WAI | 1998 | 1 | * | * | * | * |
| | 2002 | 9 | 0.34 | $6.03 | $17.67 | $17.25(3.43) |
| | 2003 | 9 | 0.32 | $4.79 | $14.83 | $14.56(0.59) |

**Notes:** Data shown by calendar year. Weighted average price is calculated as the ratio of aggregate sales revenue to aggregate sold volume, and thus does not include a measure of distributional variation. Mean price results as shown are calculated as the arithmetic mean over price observations by vessel or processor (i.e., each price observation is weighted equally), with standard deviation (sd) reported to indicate relative variability over vessel-level observations, noting that large standard deviations are likely indicative of a non-symmetrical distribution. For 1998-2005 wholesale value is estimated by multiplying the yearly estimated wholesale production volume with the annual weighted first wholesale value per lb., by species, derived from COAR production reports for processors reporting processing in the given fishery and year. Wholesale value and prices for 2006 and later 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.

For 1998-2005 and 2012 and later, 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 and later, 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. Annual production volume for 2006-2011 is sourced from EDR data.

[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.

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

Table 4.10: Statewide Crab Production, First Wholesale Value and Pricing for Selected Species

| | Year | Processors | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| crab, blue king | 1998 | 19 | 2.08 | $16.20 | $7.78 | $7.78(1.03) |
| | 1999 | 4 | 0.01 | $0.08 | $14.02 | $11.31(*) |
| | 2000 | 2 | * | * | * | * |
| | 2001 | 1 | * | * | * | * |
| | 2002 | 1 | * | * | * | * |
| | 2003 | 1 | * | * | * | * |
| | 2005 | 1 | * | * | * | * |
| | 2009 | 4 | 0.19 | $1.47 | $7.69 | $6.87(*) |
| | 2010 | 7 | 0.67 | $8.52 | $12.78 | $11.29(3.24) |
| | 2011 | 12 | 1.25 | $17.59 | $14.13 | $13.13(5.05) |
| | 2012 | 11 | 1.12 | $14.36 | $12.87 | $11.05(3.10) |
| crab, golden (brown) king | 1998 | 13 | 2.92 | $20.19 | $6.92 | $8.89(2.27) |
| | 1999 | 16 | 3.44 | $35.36 | $10.27 | $9.64(3.99) |
| | 2000 | 16 | 4.92 | $42.00 | $8.54 | $10.15(3.53) |
| | 2001 | 16 | 4.30 | $46.04 | $10.71 | $10.01(3.71) |
| | 2002 | 16 | 3.82 | $43.84 | $11.49 | $12.76(4.97) |
| | 2003 | 16 | 3.93 | $46.54 | $11.85 | $12.69(4.27) |
| | 2004 | 13 | 4.65 | $40.29 | $8.66 | $10.59(3.78) |
| | 2005 | 13 | 2.85 | $22.71 | $7.96 | $9.06(4.39) |
| | 2006 | 14 | 3.65 | $21.18 | $5.81 | $7.70(4.09) |
| | 2007 | 11 | 3.75 | $25.91 | $6.90 | $8.16(3.46) |
| | 2008 | 13 | 3.89 | $31.11 | $7.99 | $8.50(2.93) |
| | 2009 | 15 | 4.09 | $26.42 | $6.46 | $7.70(3.68) |
| | 2010 | 17 | 5.13 | $42.55 | $8.30 | $8.61(2.95) |
| | 2011 | 20 | 4.16 | $47.23 | $11.35 | $11.54(4.34) |
| | 2012 | 21 | 3.95 | $36.15 | $9.16 | $11.51(5.09) |
| | 2013 | 19 | 4.20 | $36.42 | $8.68 | $10.38(4.79) |

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Table 4.10: Continued

| | Year | Processors | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| crab, red king | 1998 | 29 | 9.23 | $82.45 | $8.93 | $8.74(2.17) |
| | 1999 | 31 | 7.05 | $123.28 | $17.49 | $16.07(4.36) |
| | 2000 | 22 | 6.58 | $69.34 | $10.54 | $12.59(3.94) |
| | 2001 | 30 | 6.35 | $86.67 | $13.65 | $12.68(4.39) |
| | 2002 | 32 | 6.93 | $121.34 | $17.51 | $15.76(6.25) |
| | 2003 | 38 | 10.50 | $154.79 | $14.74 | $13.36(4.76) |
| | 2004 | 26 | 9.73 | $129.11 | $13.27 | $12.29(2.97) |
| | 2005 | 23 | 12.50 | $140.27 | $11.22 | $10.92(4.42) |
| | 2006 | 16 | 10.40 | $96.81 | $9.31 | $8.37(3.42) |
| | 2007 | 19 | 13.32 | $138.98 | $10.43 | $9.08(2.80) |
| | 2008 | 17 | 13.18 | $148.89 | $11.30 | $9.92(2.87) |
| | 2009 | 18 | 10.96 | $111.90 | $10.21 | $9.00(3.11) |
| | 2010 | 18 | 9.27 | $137.43 | $14.82 | $12.93(4.44) |
| | 2011 | 25 | 6.03 | $109.82 | $18.22 | $17.15(6.37) |
| | 2012 | 19 | 5.25 | $80.80 | $15.39 | $13.77(4.24) |
| | 2013 | 22 | 6.50 | $81.87 | $12.59 | $12.73(3.07) |
| crab, Tanner, bairdi | 1998 | 16 | 1.65 | $11.95 | $7.23 | $6.99(3.60) |
| | 1999 | 11 | 1.48 | $9.07 | $6.15 | $6.71(2.96) |
| | 2000 | 10 | 1.00 | $8.72 | $8.69 | $7.86(1.92) |
| | 2001 | 17 | 1.27 | $9.91 | $7.83 | $7.18(1.75) |
| | 2002 | 12 | 0.74 | $6.01 | $8.11 | $6.90(2.27) |
| | 2003 | 13 | 0.81 | $7.52 | $9.33 | $8.14(3.05) |
| | 2004 | 12 | 0.94 | $8.92 | $9.50 | $9.07(1.82) |
| | 2005 | 19 | 2.22 | $12.72 | $5.73 | $6.64(3.62) |
| | 2006 | 21 | 2.94 | $14.42 | $4.90 | $4.67(1.49) |
| | 2007 | 18 | 2.49 | $13.47 | $5.40 | $6.14(3.64) |
| | 2008 | 22 | 2.44 | $13.42 | $5.51 | $5.41(1.94) |
| | 2009 | 17 | 2.25 | $10.25 | $4.56 | $5.04(2.19) |
| | 2010 | 17 | 1.90 | $7.99 | $4.20 | $4.51(1.11) |
| | 2011 | 15 | 3.88 | $26.40 | $6.80 | $7.00(1.58) |
| | 2012 | 15 | 3.08 | $19.74 | $6.41 | $7.04(2.71) |
| | 2013 | 20 | 1.89 | $11.70 | $6.18 | $6.88(2.56) |

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Table 4.10: Continued

| | Year | Processors | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|
| | 1998 | 34 | 157.20 | $516.54 | $3.29 | $3.02(0.93) |
| | 1999 | 31 | 116.91 | $526.48 | $4.50 | $3.73(1.39) |
| | 2000 | 23 | 22.78 | $119.33 | $5.24 | $5.36(2.07) |
| | 2001 | 20 | 15.15 | $87.61 | $5.78 | $5.18(1.73) |
| | 2002 | 25 | 20.84 | $114.11 | $5.48 | $4.91(1.45) |
| | 2003 | 19 | 17.38 | $116.10 | $6.68 | $6.75(2.99) |
| | 2004 | 22 | 15.30 | $105.33 | $6.89 | $6.44(1.49) |
| crab, Tanner, | 2005 | 20 | 16.29 | $83.52 | $5.13 | $4.73(1.08) |
| snow (opilio) | 2006 | 13 | 27.89 | $100.62 | $3.61 | $3.56(0.94) |
| | 2007 | 16 | 20.38 | $97.84 | $4.80 | $4.88(1.16) |
| | 2008 | 16 | 31.35 | $147.47 | $4.70 | $4.48(1.05) |
| | 2009 | 16 | 35.89 | $145.38 | $4.05 | $3.92(0.53) |
| | 2010 | 12 | 29.91 | $106.62 | $3.56 | $3.55(1.11) |
| | 2011 | 16 | 35.58 | $196.66 | $5.53 | $5.26(1.36) |
| | 2012 | 15 | 59.05 | $287.97 | $4.88 | $4.62(1.14) |
| | 2013 | 16 | 47.53 | $236.07 | $4.97 | $4.95(2.57) |

**Notes:** 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.

**Source:** ADF&G Commercial Operator's Annual Report

Table 4.11: Statewide Crab Production by Product for Selected Species

| | | Product | Processor | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| King, blue | 2009 | Other | 1 | * | * | * | * |
| | | Sections | 4 | 0.19 | 1.45 | 7.81 | 8.02(*) |
| | | Whole crab | 1 | * | * | * | * |
| | 2010 | Other | 1 | * | * | * | * |
| | | Sections | 7 | 0.65 | 8.40 | 12.96 | 12.36(2.46) |
| | | Whole crab | 1 | * | * | * | * |
| | 2011 | Other | 2 | * | * | * | * |
| | | Sections | 12 | 1.22 | 17.43 | 14.25 | 13.98(5.28) |
| | | Whole crab | 2 | * | * | * | * |
| | 2012 | Other | 2 | * | * | * | * |
| | | Sections | 10 | 1.10 | 14.18 | 12.92 | 11.52(3.52) |
| | | Whole crab | 2 | * | * | * | * |
| King, golden | 2007 | Other | 4 | 0.34 | 2.24 | 6.63 | 9.53(*) |
| | | Sections | 7 | 2.96 | 20.10 | 6.80 | 7.69(2.54) |
| | | Whole crab | 6 | 0.46 | 3.57 | 7.81 | 7.84(1.25) |
| | 2008 | Other | 4 | 0.42 | 3.25 | 7.78 | 9.33(*) |
| | | Sections | 8 | 2.96 | 23.93 | 8.08 | 9.14(2.04) |
| | | Whole crab | 8 | 0.51 | 3.93 | 7.66 | 7.25(1.27) |
| | 2009 | Other | 3 | * | * | * | * |
| | | Sections | 10 | 3.31 | 21.02 | 6.36 | 8.04(3.13) |
| | | Whole crab | 8 | 0.78 | 5.33 | 6.84 | 6.55(1.69) |
| | 2010 | Other | 3 | * | * | * | * |
| | | Sections | 11 | 4.04 | 35.60 | 8.81 | 9.85(1.38) |
| | | Whole crab | 12 | 1.08 | 6.88 | 6.34 | 7.25(1.49) |
| | 2011 | Other | 3 | * | * | * | * |
| | | Sections | 14 | 3.40 | 39.41 | 11.60 | 12.33(4.40) |
| | | Whole crab | 10 | 0.76 | 7.77 | 10.21 | 10.04(1.17) |
| | 2012 | Other | 4 | 0.01 | 0.05 | 9.49 | 12.88(*) |
| | | Sections | 15 | 3.32 | 29.17 | 8.79 | 11.56(4.85) |
| | | Whole crab | 11 | 0.62 | 6.92 | 11.10 | 10.92(2.80) |
| | 2013 | Other | 6 | 0.01 | 0.04 | 7.82 | 10.65(7.03) |
| | | Sections | 14 | 3.51 | 30.29 | 8.64 | 10.29(4.73) |
| | | Whole crab | 10 | 0.69 | 6.09 | 8.88 | 10.36(3.51) |

Continued on next page.

Table 4.11: Continued

| | | Product | Processor | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| King, red | 2007 | Other | 8 | 0.10 | 0.35 | 3.64 | 3.71(1.32) |
| | | Sections | 19 | 12.86 | 135.46 | 10.53 | 10.60(0.98) |
| | | Whole crab | 10 | 0.36 | 3.17 | 8.81 | 9.00(2.12) |
| | 2008 | Other | 7 | 0.16 | 0.76 | 4.80 | 4.58(1.57) |
| | | Sections | 17 | 12.58 | 143.07 | 11.37 | 11.25(1.31) |
| | | Whole crab | 8 | 0.44 | 5.06 | 11.43 | 9.94(2.55) |
| | 2009 | Other | 8 | 0.12 | 0.48 | 4.14 | 4.37(1.85) |
| | | Sections | 17 | 10.34 | 109.77 | 10.62 | 10.41(2.22) |
| | | Whole crab | 11 | 0.51 | 1.65 | 3.25 | 8.72(2.66) |
| | 2010 | Other | 8 | 0.14 | 0.62 | 4.49 | 6.11(2.73) |
| | | Sections | 17 | 8.91 | 133.89 | 15.02 | 15.32(2.81) |
| | | Whole crab | 11 | 0.22 | 2.92 | 13.33 | 12.56(3.35) |
| | 2011 | Other | 11 | 0.08 | 0.48 | 6.11 | 11.56(10.64) |
| | | Sections | 23 | 5.72 | 105.41 | 18.42 | 19.86(3.27) |
| | | Whole crab | 15 | 0.23 | 3.93 | 17.41 | 15.77(4.21) |
| | 2012 | Other | 6 | 0.03 | 0.21 | 7.07 | 6.76(2.41) |
| | | Sections | 18 | 4.93 | 76.37 | 15.50 | 16.04(2.62) |
| | | Whole crab | 10 | 0.29 | 4.22 | 14.31 | 12.65(3.39) |
| | 2013 | Other | 7 | 0.04 | 0.41 | 10.06 | 10.30(2.79) |
| | | Sections | 19 | 6.15 | 77.72 | 12.63 | 13.94(2.36) |
| | | Whole crab | 13 | 0.31 | 3.75 | 12.07 | 11.59(3.39) |

Continued on next page.

Table 4.11: Continued

| | | Product | Processor | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| Tanner, bairdi | 2007 | Other | 1 | * | * | * | * |
| | | Sections | 18 | 2.46 | 13.33 | 5.43 | 5.88(1.09) |
| | | Whole crab | 4 | 0.01 | 0.02 | 3.93 | 7.52(*) |
| | 2008 | Other | 4 | 0.04 | 0.18 | 4.05 | 5.96(*) |
| | | Sections | 22 | 2.39 | 13.23 | 5.54 | 5.70(1.29) |
| | | Whole crab | 4 | 0.00 | 0.01 | 3.76 | 3.16(*) |
| | 2009 | Other | 4 | 0.02 | 0.08 | 3.23 | 6.30(*) |
| | | Sections | 16 | 2.20 | 10.14 | 4.61 | 5.09(1.44) |
| | | Whole crab | 3 | * | * | * | * |
| | 2010 | Other | 1 | * | * | * | * |
| | | Sections | 16 | 1.45 | 6.59 | 4.55 | 4.81(0.88) |
| | | Whole crab | 6 | 0.44 | 1.34 | 3.05 | 3.60(1.42) |
| | 2011 | Other | 4 | 0.10 | 0.58 | 6.07 | 7.95(*) |
| | | Sections | 14 | 3.49 | 23.46 | 6.73 | 7.11(1.16) |
| | | Whole crab | 5 | 0.30 | 2.36 | 7.83 | 5.70(2.07) |
| | 2012 | Other | 1 | * | * | * | * |
| | | Sections | 13 | 2.73 | 16.88 | 6.19 | 6.76(1.39) |
| | | Whole crab | 6 | 0.35 | 2.85 | 8.09 | 6.31(2.09) |
| | 2013 | Other | 4 | 0.00 | 0.06 | 13.10 | 11.01(*) |
| | | Sections | 19 | 1.60 | 9.59 | 5.98 | 6.24(1.05) |
| | | Whole crab | 4 | 0.29 | 2.05 | 7.15 | 6.50(*) |

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Table 4.11: Continued

| | | Product | Processor | Finished weight (million lbs) | First wholesale value | Weighted average price ($/lb) | Mean(sd) price ($/lb) |
|---|---|---|---|---|---|---|---|
| Tanner, opilio (snow) | 2007 | Other | 2 | * | * | * | * |
| | | Sections | 16 | 20.19 | 97.24 | 4.82 | 4.92(0.24) |
| | | Whole crab | 1 | * | * | * | * |
| | 2008 | Other | 3 | * | * | * | * |
| | | Sections | 16 | 29.60 | 139.65 | 4.72 | 4.80(0.31) |
| | | Whole crab | 1 | * | * | * | * |
| | 2009 | Other | 1 | * | * | * | * |
| | | Sections | 16 | 35.60 | 144.69 | 4.06 | 4.07(0.21) |
| | 2010 | Other | 1 | * | * | * | * |
| | | Sections | 12 | 29.80 | 106.28 | 3.57 | 3.64(1.11) |
| | | Whole crab | 1 | * | * | * | * |
| | 2011 | Other | 1 | * | * | * | * |
| | | Sections | 16 | 35.30 | 195.30 | 5.53 | 5.23(1.41) |
| | | Whole crab | 1 | * | * | * | * |
| | 2012 | Other | 1 | * | * | * | * |
| | | Sections | 15 | 58.86 | 287.71 | 4.89 | 4.74(0.90) |
| | | Whole crab | 2 | * | * | * | * |
| | 2013 | Other | 1 | * | * | * | * |
| | | Sections | 16 | 47.50 | 236.07 | 4.97 | 4.77(1.64) |
| | | Whole crab | 1 | * | * | * | * |

**Notes:** 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.

**Source:** ADF&G Commercial Operator's Annual Report

Table 4.12: Captain and Crew Share Payments, and Crab-Equivalent Crew Pay, CR Program Fisheries

| | | | Crew share payment ($million) | | | Captain share payment ($million) | | CV Crew payment, crab equivalent (1000 lbs) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Obs | Per vessel, median | Total | Per vessel, median | Total | Obs | Per vessel, median | Total |
| AIG | both sectors | 2009 | 5 | $0.42 | $2.10 | $0.23 | $1.24 | 4 | * | * |
| | | 2010 | 5 | $0.66 | $3.29 | $0.29 | $1.87 | 4 | * | * |
| | | 2011 | 5 | $0.67 | $3.98 | $0.36 | $2.16 | 4 | * | * |
| | | 2012 | 6 | $0.64 | $3.53 | $0.32 | $1.82 | 5 | 175.67 | 739.97 |
| | | 2013 | 6 | $0.53 | $3.31 | $0.27 | $1.50 | 6 | 137.26 | 821.72 |
| | CP | 98/01/04 | 4(2) | * | * | * | * | - | - | - |
| | | 2005 | 1 | * | * | * | * | - | - | - |
| | | 2006 | 1 | * | * | * | * | - | - | - |
| | | 2007 | 1 | * | * | * | * | - | - | - |
| | | 2008 | 1 | * | * | * | * | - | - | - |
| | CV | 98/01/04 | 50(21) | $0.16 | $4.37 | $0.08 | $2.11 | 50(21) | 40.24 | 1,002.58 |
| | | 2005 | 10 | $0.17 | $2.04 | $0.07 | $1.11 | 10 | 46.18 | 583.75 |
| | | 2006 | 6 | $0.12 | $0.95 | $0.07 | $0.52 | 6 | 58.24 | 386.17 |
| | | 2007 | 6 | $0.19 | $1.24 | $0.09 | $0.61 | 6 | 66.47 | 466.01 |
| | | 2008 | 4 | * | * | * | * | 4 | * | * |

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Table 4.12: Continued

| | | | Crew share payment ($million) | | | Captain share payment ($million) | | CV Crew payment, crab equivalent (1000 lbs) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Obs | Per vessel, median | Total | Per vessel, median | Total | Obs | Per vessel, median | Total |
| BBR | both sectors | 2009 | 70 | $0.13 | $10.54 | $0.07 | $4.99 | 68 | 24.50 | 1,848.95 |
| | | 2010 | 65 | $0.20 | $13.55 | $0.10 | $6.45 | 63 | 24.96 | 1,630.31 |
| | | 2011 | 62 | $0.16 | $10.69 | $0.08 | $4.96 | 59 | 14.07 | 942.64 |
| | | 2012 | 66 | $0.10 | $8.12 | $0.05 | $3.66 | 62 | 13.55 | 958.50 |
| | | 2013 | 63 | $0.09 | $7.46 | $0.05 | $3.55 | 61 | 13.13 | 1,021.99 |
| | CP | 98/01/04 | 20(9) | $0.10 | $0.78 | $0.03 | $0.25 | - | - | - |
| | | 2005 | 3 | * | * | * | * | - | - | - |
| | | 2006 | 3 | * | * | * | * | - | - | - |
| | | 2007 | 3 | * | * | * | * | - | - | - |
| | | 2008 | 3 | * | * | * | * | - | - | - |
| | CV | 98/01/04 | 626(249) | $0.07 | $15.50 | $0.03 | $7.49 | 618(249) | 10.88 | 2,551.38 |
| | | 2005 | 84 | $0.13 | $13.52 | $0.07 | $7.11 | 84 | 22.81 | 2,261.70 |
| | | 2006 | 79 | $0.11 | $9.58 | $0.06 | $4.85 | 79 | 23.45 | 2,002.05 |
| | | 2007 | 70 | $0.16 | $13.01 | $0.08 | $6.48 | 70 | 27.60 | 2,391.78 |
| | | 2008 | 76 | $0.18 | $15.43 | $0.08 | $6.97 | 76 | 29.74 | 2,568.73 |

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Table 4.12: Continued

| | | | Crew share payment ($million) | | | Captain share payment ($million) | | CV Crew payment, crab equivalent (1000 lbs) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Obs | Per vessel, median | Total | Per vessel, median | Total | Obs | Per vessel, median | Total |
| BSS | both sectors | 2009 | 77 | $0.16 | $14.36 | $0.08 | $6.36 | 73 | 97.27 | 7,687.66 |
| | | 2010 | 68 | $0.13 | $9.65 | $0.06 | $4.33 | 66 | 88.79 | 6,625.45 |
| | | 2011 | 68 | $0.28 | $19.94 | $0.13 | $8.93 | 66 | 104.28 | 7,350.30 |
| | | 2012 | 72 | $0.38 | $27.29 | $0.18 | $12.38 | 70 | 164.03 | 11,875.33 |
| | | 2013 | 71 | $0.28 | $21.93 | $0.14 | $9.98 | 69 | 119.71 | 9,131.56 |
| | CP | 98/01/04 | 18(8) | $0.30 | $1.92 | $0.10 | $0.62 | - | - | - |
| | | 2005 | 6 | $0.08 | $0.64 | $0.04 | $0.22 | - | - | - |
| | | 2006 | 4 | * | * | * | * | - | - | - |
| | | 2007 | 4 | * | * | * | * | - | - | - |
| | | 2008 | 4 | * | * | * | * | - | - | - |
| | CV | 98/01/04 | 517(210) | $0.09 | $22.38 | $0.05 | $10.79 | 510(210) | 33.92 | 18,059.94 |
| | | 2005 | 150 | $0.08 | $12.12 | $0.04 | $6.23 | 150 | 31.02 | 5,335.74 |
| | | 2006 | 74 | $0.08 | $6.63 | $0.04 | $3.32 | 74 | 56.65 | 4,787.81 |
| | | 2007 | 65 | $0.13 | $9.84 | $0.07 | $4.68 | 64 | 63.39 | 4,701.20 |
| | | 2008 | 74 | $0.22 | $17.52 | $0.11 | $8.34 | 74 | 108.04 | 8,833.86 |

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Table 4.12: Continued

| | | | Crew share payment ($million) | | | Captain share payment ($million) | | CV Crew payment, crab equivalent (1000 lbs) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Obs | Per vessel, median | Total | Per vessel, median | Total | Obs | Per vessel, median | Total |
| BST | both sectors | 2009 | 14 | $0.03 | $0.60 | $0.02 | $0.37 | 13 | 13.71 | 256.98 |
| | | 2010 | 4 | * | * | * | * | 4 | * | * |
| | | 2013 | 19 | $0.01 | $0.44 | $0.01 | $0.21 | 18 | 6.92 | 198.93 |
| | CP | 2006 | 1 | * | * | * | * | - | - | - |
| | | 2007 | 1 | * | * | * | * | - | - | - |
| | | 2008 | 1 | * | * | * | * | - | - | - |
| | CV | 2005 | 4 | * | * | * | * | 4 | * | * |
| | | 2006 | 25 | $0.00 | $0.26 | $0.00 | $0.14 | 25 | 2.46 | 135.42 |
| | | 2007 | 21 | $0.02 | $0.68 | $0.01 | $0.35 | 21 | 9.22 | 308.06 |
| | | 2008 | 26 | $0.02 | $0.57 | $0.01 | $0.33 | 26 | 6.73 | 259.61 |
| PIK | CV | 98/01/04 | 42(42) | $0.01 | $0.63 | $0.01 | $0.32 | 42(42) | 3.22 | 163.87 |
| SMB | CP | 98/01/04 | 2(2) | * | * | * | * | - | - | - |
| | CV | 98/01/04 | 92(92) | $0.01 | $1.40 | $0.01 | $0.76 | 88(88) | 4.09 | 429.84 |
| | | 2009 | 7 | $0.02 | $0.17 | $0.01 | $0.07 | 7 | 5.97 | 49.67 |
| | | 2010 | 11 | $0.07 | $0.94 | $0.04 | $0.49 | 10 | 13.60 | 163.26 |
| | | 2011 | 17 | $0.06 | $1.27 | $0.03 | $0.59 | 17 | 10.69 | 232.83 |
| | | 2012 | 17 | $0.04 | $0.86 | $0.02 | $0.39 | 17 | 10.16 | 197.23 |

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Table 4.12: Continued

| | | | Crew share payment ($million) | | | Captain share payment ($million) | | CV Crew payment, crab equivalent (1000 lbs) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | Obs | Per vessel, median | Total | Per vessel, median | Total | Obs | Per vessel, median | Total |
| WAI | CP | 98/01/04 | 2(1) | * | * | * | * | - | - | - |
| | CV | 98/01/04 | 3(3) | * | * | * | * | 3(3) | * | * |

**Notes:** 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.13: Harvesting Sector Employment, CR Program Fisheries

| | | | Vessels | Crew positions | | Crew participants | |
|---|---|---|---|---|---|---|---|
| | | Year | | Total | Mean per vessel (sd) | Total | Mean per vessel (sd) |
| AIG | CP | 98/01/04 | 4(2) | - | - | * | * |
| | | 2005 | 1 | * | * | * | * |
| | | 2006 | 1 | * | * | * | * |
| | | 2007 | 1 | * | * | * | * |
| | | 2008 | 1 | * | * | * | * |
| | CV | 98/01/04 | 52(22) | 115 | 6.65(0.99) | 131 | 7.56(2.09) |
| | | 2005 | 10 | 58 | 5.80(1.14) | 72 | 7.20(2.58) |
| | | 2006 | 6 | 38 | 6.33(0.52) | 48 | 7.92(2.58) |
| | | 2007 | 6 | 38 | 6.33(*) | 40 | 6.67(*) |
| | | 2008 | 4 | * | * | * | * |
| | CVCP | 2009 | 5 | 35 | 7.00(*) | 43 | 8.60(*) |
| | | 2010 | 5 | 35 | 7.00(*) | 43 | 8.50(*) |
| | | 2011 | 5 | 36 | 7.20(*) | 38 | 7.60(*) |
| | | 2012 | 6 | 46 | 7.67(1.21) | - | - |
| | | 2013 | 6 | 44 | 7.33(1.03) | - | - |
| BBR | CP | 98/01/04 | 20(9) | - | - | 70 | 10.49(2.11) |
| | | 2005 | 3 | * | * | * | * |
| | | 2006 | 3 | * | * | * | * |
| | | 2007 | 3 | * | * | * | * |
| | | 2008 | 3 | * | * | * | * |
| | CV | 98/01/04 | 633(250) | 1,233 | 5.85(0.92) | 1,304 | 6.18(1.16) |
| | | 2005 | 84 | 472 | 5.61(0.82) | 493 | 5.87(1.04) |
| | | 2006 | 79 | 445 | 5.63(0.83) | 465 | 5.89(1.06) |
| | | 2007 | 70 | 407 | 5.81(0.79) | 419 | 5.99(0.86) |
| | | 2008 | 76 | 452 | 5.95(0.91) | 473 | 6.22(1.11) |
| | CVCP | 2009 | 70 | 443 | 6.33(2.41) | 435 | 6.21(1.01) |
| | | 2010 | 65 | 422 | 6.48(2.93) | 412 | 6.34(1.22) |
| | | 2011 | 62 | 413 | 6.66(3.23) | 401 | 6.47(1.24) |
| | | 2012 | 64 | 428 | 6.68(2.69) | - | - |
| | | 2013 | 63 | 418 | 6.63(2.53) | - | - |
| BSS | CP | 98/01/04 | 18(8) | - | - | 78 | 12.93(5.31) |
| | | 2005 | 6 | 69 | 11.50(4.81) | 59 | 9.83(1.47) |
| | | 2006 | 4 | * | * | * | * |
| | | 2007 | 4 | * | * | * | * |
| | | 2008 | 4 | * | * | * | * |
| | CV | 98/01/04 | 524(210) | 1,049 | 6.01(0.89) | 1,139 | 6.52(1.45) |
| | | 2005 | 150 | 856 | 5.70(0.72) | 857 | 5.71(0.73) |
| | | 2006 | 74 | 418 | 5.65(0.78) | 448 | 6.05(1.19) |
| | | 2007 | 65 | 377 | 5.79(0.79) | 400 | 6.15(1.08) |
| | | 2008 | 74 | 447 | 6.03(0.79) | 489 | 6.61(1.41) |
| | CVCP | 2009 | 77 | 536 | 6.96(4.12) | 522 | 6.78(1.82) |
| | | 2010 | 68 | 444 | 6.53(2.61) | 442 | 6.50(1.26) |
| | | 2011 | 68 | 453 | 6.66(2.87) | 463 | 6.81(1.70) |
| | | 2012 | 72 | 502 | 6.97(3.61) | - | - |
| | | 2013 | 70 | 476 | 6.79(3.13) | - | - |

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Table 4.13: Continued

| | | | Vessels | Crew positions | | Crew participants | |
|---|---|---|---|---|---|---|---|
| | | Year | | Total | Mean per vessel (sd) | Total | Mean per vessel (sd) |
| BST | CP | 2006 | 1 | * | * | * | * |
| | | 2007 | 1 | * | * | * | * |
| | | 2008 | 1 | * | * | * | * |
| | CV | 2005 | 4 | * | * | * | * |
| | | 2006 | 25 | 140 | 5.60(1.00) | 143 | 5.72(1.02) |
| | | 2007 | 22 | 118 | 5.36(0.66) | 131 | 5.95(0.84) |
| | | 2008 | 26 | 146 | 5.62(0.75) | 162 | 6.23(1.31) |
| | CVCP | 2009 | 14 | 102 | 7.29(5.20) | 96 | 6.86(2.54) |
| | | 2010 | 4 | * | * | * | * |
| | | 2013 | 22 | 156 | 7.09(3.52) | - | - |
| PIK | CV | 98/01/04 | 43(43) | 207 | 4.81(0.88) | 219 | 5.09(0.87) |
| SMB | CP | 98/01/04 | 2(2) | - | - | * | * |
| | CV | 98/01/04 | 94(94) | 489 | 5.20(0.80) | 516 | 5.49(0.84) |
| | | 2009 | 7 | 39 | 5.57(0.79) | 40 | 5.71(0.76) |
| | | 2010 | 11 | 63 | 5.73(0.65) | 66 | 6.00(0.89) |
| | | 2011 | 17 | 112 | 6.56(1.12) | 118 | 6.94(1.39) |
| | | 2012 | 17 | 106 | 6.24(0.97) | - | - |
| WAI | CP | 98/01/04 | 2(1) | - | - | * | * |
| | CV | 98/01/04 | 3(3) | * | * | * | * |

**Notes:** 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database, 2005 and later crew positions information from eLandings.

Table 4.14: Participating Licensed Crew Members and Gear Operators by Alaska Residence, CR ProgramFisheries

| | Crew license holders | | | | Gear operators | | | Crew and gear operators |
|---|---|---|---|---|---|---|---|---|
| Year | Alaska non-resident | Alaska resident | Unknown | Total | Alaska non-resident | Alaska resident | Total | Total |
| 1998 | - | - | - | - | 243 | 106 | 349 | - |
| 1999 | - | - | - | - | 246 | 105 | 351 | - |
| 2000 | - | - | - | - | 208 | 90 | 298 | - |
| 2001 | - | - | - | - | 210 | 78 | 288 | - |
| 2002 | - | - | - | - | 204 | 77 | 281 | - |
| 2003 | - | - | - | - | 199 | 82 | 281 | - |
| 2004 | - | - | - | - | 197 | 81 | 278 | - |
| 2005 | - | - | - | - | 137 | 56 | 193 | - |
| 2006 | 332 | 192 | 10 | 534 | 95 | 37 | 132 | 666 |
| 2007 | 338 | 190 | 2 | 530 | 74 | 26 | 100 | 630 |
| 2008 | 416 | 212 | 3 | 631 | 90 | 29 | 119 | 750 |
| 2009 | 381 | 187 | 1 | 569 | 84 | 26 | 110 | 679 |
| 2010 | 345 | 166 | 4 | 515 | 71 | 28 | 99 | 614 |
| 2011 | 347 | 181 | 2 | 530 | 68 | 25 | 93 | 623 |
| 2012 | 403 | 203 | 5 | 611 | 82 | 30 | 112 | 723 |
| 2013 | 376 | 188 | 12 | 576 | 69 | 24 | 93 | 669 |

**Notes:** 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.

**Source:** ADF&G commercial crewmember license files, ,ADF&G fish ticket data,eLandings,

Table 4.15: Active CFEC Gear Operator Permit Holders: Count of Permit Holders Reported on Crab FisheryLandings and Share of CR Fishery Ex-vessel Value Landed on Associated Vessels, by State of Residence

| | | Non-Alaska residents[ab] | | Alaska residents | |
|---|---|---|---|---|---|
| | Year | Permit holders | Associated share of landed ex-vessel value | Permit holders | Associated share of landed ex-vessel value |
| 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 | * |
| | 2013 | 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 |
| | 2013 | 48 | 78 | 16 | 22 |

Continued on next page.

Table 4.15: Continued

| | Year | Non-Alaska residents[ab] | | Alaska residents | |
|---|---|---|---|---|---|
| | | Permit holders | Associated share of landed ex-vessel value | Permit holders | Associated share of landed ex-vessel value |
| 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 |
| | 2013 | 55 | 79 | 20 | 21 |
| 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 | * |
| | 2013 | 13 | 63 | 8 | 37 |
| 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 | 1998 | 1 | 100 | 0 | 0 |
| | 2002 | 26 | 82 | 7 | 18 |
| | 2003 | 26 | 88 | 4 | 12 |

**Notes:** Data shown by calendar year.

[a] Count of unique holders of CFEC Gear Operator permits recorded on ADFfish 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.

**Source:** ADF&G fish ticket data, eLandings, CFEC ex-vessel pricing, and ADF&G Commercial Operator's Annual Report

Table 4.16: Processing Labor Payments, CR Program Fisheries

| | | | Processors | Labor Payments ($1,000) | | Processing wages, median | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | per position | per hour | per finished pound |
| AIG | Both sectors | 2009 | 5 | $971 | $152 | $1,260 | * | * |
| | | 2010 | 4 | * | * | * | * | * |
| | | 2011 | 7 | $1,135 | $77 | $360 | $10.23 | $0.18 |
| | | 2012 | 8 | $1,126 | $60 | - | $10.38 | - |
| | | 2013 | 6 | $607 | $61 | - | $9.93 | - |
| | CP | 98/01/04 | 4(2) | * | * | * | - | * |
| | | 2005 | 2 | * | * | * | - | * |
| | | 2006 | 1 | * | * | * | - | * |
| | | 2007 | 1 | * | * | * | - | * |
| | | 2008 | 1 | * | * | * | - | * |
| | SF | 98/01/04 | 13(7) | $833 | $174 | $1,635 | $13.72 | $0.27 |
| | | 2005 | 4 | * | * | * | * | * |
| | | 2006 | 6 | $558 | $21 | $1,226 | $11.84 | $0.15 |
| | | 2007 | 5 | $841 | $67 | $1,482 | $11.58 | $0.20 |
| | | 2008 | 6 | $605 | $104 | * | $12.80 | $0.25 |
| BBR | Both sectors | 2009 | 12 | $2,490 | $144 | $2,615 | $11.67 | $0.25 |
| | | 2010 | 13 | $2,485 | $201 | $2,481 | $10.29 | $0.23 |
| | | 2011 | 14 | $1,243 | $75 | $1,004 | $10.40 | $0.21 |
| | | 2012 | 12 | $1,196 | $69 | - | $10.99 | - |
| | | 2013 | 10 | $1,181 | $93 | - | $9.98 | - |
| | CP | 98/01/04 | 18(10) | $326 | $50 | $4,421 | - | $0.57 |
| | | 2005 | 4 | * | * | * | - | * |
| | | 2006 | 3 | * | * | * | - | * |
| | | 2007 | 3 | * | * | * | - | * |
| | | 2008 | 3 | * | * | * | - | * |
| | SF | 98/01/04 | 40(20) | $1,918 | $123 | $1,430 | $14.73 | $0.27 |
| | | 2005 | 11 | $2,604 | $234 | $2,116 | $12.72 | $0.24 |
| | | 2006 | 11 | $2,254 | $181 | $1,610 | $12.05 | $0.25 |
| | | 2007 | 11 | $3,131 | $257 | $2,209 | $12.65 | $0.24 |
| | | 2008 | 11 | $3,066 | $311 | $2,989 | $12.29 | $0.27 |

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Table 4.16: Continued

| | | | Processors | Labor Payments ($1,000) | | Processing wages, median | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | per position | per hour | per finished pound |
| BSS | Both sectors | 2009 | 14 | $7,655 | $351 | $8,495 | $11.76 | $0.23 |
| | | 2010 | 11 | $5,833 | $386 | $4,965 | $10.49 | $0.23 |
| | | 2011 | 14 | $6,154 | $357 | $4,017 | $10.56 | $0.22 |
| | | 2012 | 13 | $12,160 | $620 | - | $10.55 | - |
| | | 2013 | 12 | $7,956 | $480 | - | $10.00 | - |
| | CP | 98/01/04 | 17(8) | $854 | $134 | $10,055 | - | $0.34 |
| | | 2005 | 6 | $318 | $40 | $4,745 | - | $0.29 |
| | | 2006 | 4 | * | * | * | - | * |
| | | 2007 | 4 | * | * | * | - | * |
| | | 2008 | 4 | * | * | * | - | * |
| | SF | 98/01/04 | 50(24) | $15,873 | $510 | $3,111 | $14.09 | $0.29 |
| | | 2005 | 13 | $3,835 | $315 | $1,761 | $12.64 | $0.26 |
| | | 2006 | 10 | $5,183 | $587 | $3,374 | $11.90 | $0.24 |
| | | 2007 | 10 | $5,643 | $518 | $3,929 | $12.38 | $0.29 |
| | | 2008 | 12 | $9,754 | $559 | $4,526 | $11.96 | $0.25 |

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Table 4.16: Continued

| | | | Processors | Labor Payments ($1,000) | | Processing wages, median | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | per position | per hour | per finished pound |
| BST | Both sectors | 2009 | 8 | $325 | $37 | $279 | $11.25 | $0.23 |
| | | 2010 | 5 | $66 | $7 | $146 | $10.50 | * |
| | | 2013 | 7 | $161 | $16 | - | $9.59 | - |
| | CP | 2006 | 1 | * | * | * | - | * |
| | | 2007 | 1 | * | * | * | - | * |
| | | 2008 | 1 | * | * | * | - | * |
| | SF | 2005 | 7 | $101 | $6 | $104 | $12.33 | $0.31 |
| | | 2006 | 8 | $162 | $15 | $219 | $11.87 | $0.23 |
| | | 2007 | 7 | $399 | $51 | $858 | $11.59 | $0.25 |
| | | 2008 | 8 | $480 | $51 | $619 | $12.01 | $0.31 |
| PIK | SF | 98/01/04 | 13(13) | $291 | $20 | $550 | $13.29 | $0.29 |
| SMB | CP | 98/01/04 | 1(1) | * | * | * | - | * |
| | SF | 98/01/04 | 10(10) | $712 | $39 | $629 | $12.64 | $0.27 |
| | | 2009 | 2 | * | * | * | * | * |
| | | 2010 | 5 | $177 | $4 | $74 | $10.24 | $0.22 |
| | | 2011 | 6 | $150 | $8 | $125 | $9.42 | $0.19 |
| | | 2012 | 6 | $246 | $7 | - | $9.91 | - |

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Table 4.16: Continued

| | | | Processors | Labor Payments ($1,000) | | Processing wages, median | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | per position | per hour | per finished pound |
| WAI | CP | 98/01/04 | 2(1) | * | * | * | - | * |
| | SF | 98/01/04 | 1(1) | * | * | * | * | * |

**Notes:** 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.

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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.17: Processing Employment, CR Program Fisheries

| | | | Processors | Processing positions | | Processing labor hours | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | Total (1,000) | Median per plant (1,000) | Median per position |
| AIG | CP | 98/01/04 | 4(2) | * | * | - | - | - |
| | | 2005 | 2 | * | * | - | - | - |
| | | 2006 | 1 | * | * | - | - | - |
| | | 2007 | 1 | * | * | - | - | - |
| | | 2008 | 1 | * | * | - | - | - |
| | 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 | - | - | 53 | 2.60 | - |
| | | 2013 | 6 | - | - | 61 | 5.96 | - |
| BBR | CP | 98/01/04 | 18(10) | 69 | 10 | - | - | - |
| | | 2005 | 4 | * | * | - | - | - |
| | | 2006 | 3 | * | * | - | - | - |
| | | 2007 | 3 | * | * | - | - | - |
| | | 2008 | 3 | * | * | - | - | - |
| | SF | 98/01/04 | 40(20) | 1,400 | 84 | 142 | 9.96 | 99 |
| | | 2005 | 11 | 1,024 | 82 | 202 | 12.12 | 148 |
| | | 2006 | 11 | 1,027 | 72 | 180 | 10.76 | 118 |
| | | 2007 | 11 | 965 | 85 | 261 | 25.22 | 216 |
| | | 2008 | 11 | 873 | 81 | 245 | 12.58 | 299 |
| | SFCP | 2009 | 12 | 1,132 | 82 | 199 | 16.06 | 152 |
| | | 2010 | 13 | 1,106 | 75 | 212 | 20.09 | 237 |
| | | 2011 | 14 | 1,272 | 77 | 104 | 6.71 | 77 |
| | | 2012 | 12 | - | - | 100 | 6.51 | - |
| | | 2013 | 10 | - | - | 104 | 10.00 | - |
| BSS | CP | 98/01/04 | 17(8) | 82 | 15 | - | - | - |
| | | 2005 | 6 | 62 | 10 | - | - | - |
| | | 2006 | 4 | * | * | - | - | - |
| | | 2007 | 4 | * | * | - | - | - |
| | | 2008 | 4 | * | * | - | - | - |
| | SF | 98/01/04 | 50(24) | 2,481 | 124 | 1,134 | 36.21 | 248 |
| | | 2005 | 13 | 1,487 | 110 | 302 | 23.68 | 190 |
| | | 2006 | 10 | 1,061 | 72 | 445 | 49.45 | 269 |
| | | 2007 | 10 | 1,140 | 106 | 442 | 41.29 | 324 |
| | | 2008 | 12 | 1,170 | 85 | 712 | 30.52 | 539 |
| | SFCP | 2009 | 14 | 1,302 | 83 | 600 | 58.41 | 413 |
| | | 2010 | 11 | 1,189 | 85 | 534 | 50.90 | 390 |
| | | 2011 | 14 | 1,601 | 97 | 555 | 45.69 | 337 |
| | | 2012 | 13 | - | - | 1,087 | 77.94 | - |
| | | 2013 | 12 | - | - | 774 | 63.55 | - |


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Table 4.17: Continued

| | | | Processors | Processing positions | | Processing labor hours | | |
|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median per plant | Total (1,000) | Median per plant (1,000) | Median per position |
| BST | CP | 2006 | 1 | * | * | - | - | - |
| | | 2007 | 1 | * | * | - | - | - |
| | | 2008 | 1 | * | * | - | - | - |
| | 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 |
| | | 2013 | 7 | - | - | 17 | 1.86 | - |
| PIK | SF | 98/01/04 | 13(13) | 669 | 28 | 25 | 1.03 | 62 |
| SMB | CP | 98/01/04 | 1(1) | * | * | - | - | - |
| | 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 | - | - | 21 | 0.76 | - |
| WAI | CP | 98/01/04 | 2(1) | * | * | - | - | - |
| | SF | 98/01/04 | 1(1) | * | * | * | * | * |

**Notes:** 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 fishing activity in the SMB fishery from 2009 to 2012.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.18: Shoreside and Floating Processor Employee Residence, CR Program Fisheries

| Year | Processors | Alaska | Washington-Oregon-Idaho | U.S. Other | Non-U.S. | Total |
|---|---|---|---|---|---|---|
| 2005 | 17 | 605 | 987 | 1,243 | 37 | 2,872 |
| 2006 | 13 | 898 | 882 | 878 | 2 | 2,660 |
| 2007 | 14 | 738 | 970 | 1,477 | 7 | 3,192 |
| 2008 | 13 | 927 | 960 | 2,018 | 4 | 3,909 |
| 2009 | 12 | 800 | 774 | 1,515 | 23 | 3,112 |
| 2010 | 12 | 767 | 868 | 1,321 | 367 | 3,323 |
| 2011 | 13 | 800 | 815 | 1,193 | 8 | 2,816 |
| 2012 | 13 | 647 | 1,087 | 1,545 | 12 | 3,291 |
| 2013 | 15 | 932 | 938 | 1,259 | 4 | 3,133 |

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.19: Catcher Vessel Harvest Revenue Net and Gross Share Distribution, CR Program Fisheries

| | | | Net share distribution | | Gross share distribution | |
|---|---|---|---|---|---|---|
| | | Share | Vessels | Median share | Vessels | Median share |
| ALL | 98/01/04 | Owner | 660(257) | 60% | - | - |
| | | Captain/crew | - | - | 640(250) | 35% |
| AIG | 2005 | Owner | 10 | 65% | - | - |
| | | Labor total | 10 | 35% | 10 | 21% |
| | | Crew | 10 | 23% | 10 | 14% |
| | | Captain | 10 | 14% | 10 | 8% |
| | 2006 | Owner | 6 | 64% | - | - |
| | | Labor total | 6 | 36% | 6 | 17% |
| | | Crew | 6 | 25% | 6 | 11% |
| | | Captain | 6 | 13% | 6 | 6% |
| | 2007 | Owner | 6 | 60% | - | - |
| | | Labor total | 6 | 40% | 6 | 18% |
| | | Crew | 6 | 25% | 6 | 12% |
| | | Captain | 6 | 13% | 6 | 6% |
| | 2008 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 4 | * |
| | | Crew | 4 | * | 4 | * |
| | | Captain | 4 | * | 4 | * |
| | 2009 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 4 | * |
| | | Crew | 4 | * | 4 | * |
| | | Captain | 4 | * | 4 | * |
| | 2010 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 4 | * |
| | | Crew | 4 | * | 4 | * |
| | | Captain | 4 | * | 4 | * |
| | 2011 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 4 | * |
| | | Crew | 4 | * | 4 | * |
| | | Captain | 4 | * | 4 | * |
| | 2012 | Labor total | - | - | 5 | 18% |
| | | Crew | - | - | 5 | 13% |
| | | Captain | - | - | 5 | 5% |
| | 2013 | Labor total | - | - | 6 | 18% |
| | | Crew | - | - | 6 | 13% |
| | | Captain | - | - | 6 | 5% |

Continued on next page.

Table 4.19: Continued

| | | | Net share distribution | | Gross share distribution | |
|---|---|---|---|---|---|---|
| | | Share | Vessels | Median share | Vessels | Median share |
| BBR | 2005 | Owner | 82 | 61% | - | - |
| | | Labor total | 82 | 39% | 83 | 23% |
| | | Crew | 82 | 25% | 83 | 15% |
| | | Captain | 82 | 13% | 83 | 8% |
| | 2006 | Owner | 78 | 61% | - | - |
| | | Labor total | 78 | 39% | 77 | 23% |
| | | Crew | 78 | 26% | 77 | 15% |
| | | Captain | 78 | 13% | 77 | 8% |
| | 2007 | Owner | 69 | 60% | - | - |
| | | Labor total | 69 | 40% | 70 | 21% |
| | | Crew | 69 | 26% | 70 | 14% |
| | | Captain | 69 | 14% | 70 | 7% |
| | 2008 | Owner | 75 | 61% | - | - |
| | | Labor total | 75 | 39% | 75 | 21% |
| | | Crew | 75 | 26% | 75 | 13% |
| | | Captain | 75 | 14% | 75 | 7% |
| | 2009 | Owner | 67 | 60% | - | - |
| | | Labor total | 67 | 40% | 67 | 20% |
| | | Crew | 67 | 26% | 67 | 12% |
| | | Captain | 67 | 12% | 67 | 6% |
| | 2010 | Owner | 62 | 60% | - | - |
| | | Labor total | 62 | 40% | 61 | 18% |
| | | Crew | 62 | 27% | 61 | 12% |
| | | Captain | 62 | 13% | 61 | 6% |
| | 2011 | Owner | 59 | 60% | - | - |
| | | Labor total | 59 | 40% | 58 | 19% |
| | | Crew | 59 | 27% | 58 | 13% |
| | | Captain | 59 | 12% | 58 | 7% |
| | 2012 | Labor total | - | - | 60 | 20% |
| | | Crew | - | - | 60 | 14% |
| | | Captain | - | - | 60 | 6% |
| | 2013 | Labor total | - | - | 60 | 18% |
| | | Crew | - | - | 60 | 12% |
| | | Captain | - | - | 60 | 6% |

Continued on next page.

Table 4.19: Continued

| | | | Net share distribution | | Gross share distribution | |
|---|---|---|---|---|---|---|
| | | Share | Vessels | Median share | Vessels | Median share |
| BSS | 2005 | Owner | 150 | 60% | - | - |
| | | Labor total | 150 | 40% | 147 | 35% |
| | | Crew | 150 | 26% | 147 | 23% |
| | | Captain | 150 | 14% | 147 | 12% |
| | 2006 | Owner | 73 | 61% | - | - |
| | | Labor total | 73 | 39% | 73 | 22% |
| | | Crew | 73 | 26% | 73 | 15% |
| | | Captain | 73 | 13% | 73 | 7% |
| | 2007 | Owner | 63 | 61% | - | - |
| | | Labor total | 63 | 39% | 63 | 23% |
| | | Crew | 63 | 26% | 63 | 15% |
| | | Captain | 63 | 13% | 63 | 8% |
| | 2008 | Owner | 73 | 61% | - | - |
| | | Labor total | 73 | 39% | 73 | 23% |
| | | Crew | 73 | 26% | 73 | 15% |
| | | Captain | 73 | 13% | 73 | 8% |
| | 2009 | Owner | 74 | 61% | - | - |
| | | Labor total | 74 | 39% | 72 | 22% |
| | | Crew | 74 | 26% | 72 | 15% |
| | | Captain | 74 | 12% | 72 | 7% |
| | 2010 | Owner | 65 | 60% | - | - |
| | | Labor total | 65 | 40% | 65 | 22% |
| | | Crew | 65 | 27% | 65 | 15% |
| | | Captain | 65 | 13% | 65 | 7% |
| | 2011 | Owner | 64 | 60% | - | - |
| | | Labor total | 64 | 40% | 65 | 21% |
| | | Crew | 64 | 27% | 65 | 14% |
| | | Captain | 64 | 12% | 65 | 7% |
| | 2012 | Labor total | - | - | 69 | 21% |
| | | Crew | - | - | 69 | 14% |
| | | Captain | - | - | 69 | 7% |
| | 2013 | Labor total | - | - | 68 | 20% |
| | | Crew | - | - | 68 | 13% |
| | | Captain | - | - | 68 | 6% |

Continued on next page.

Table 4.19: Continued

| | | | Net share distribution | | Gross share distribution | |
|---|---|---|---|---|---|---|
| | | Share | Vessels | Median share | Vessels | Median share |
| BST | 2005 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 3 | * |
| | | Crew | 4 | * | 3 | * |
| | | Captain | 4 | * | 3 | * |
| | 2006 | Owner | 31 | 60% | - | - |
| | | Labor total | 31 | 40% | 24 | 27% |
| | | Crew | 31 | 26% | 24 | 17% |
| | | Captain | 31 | 14% | 24 | 9% |
| | 2007 | Owner | 24 | 60% | - | - |
| | | Labor total | 24 | 40% | 20 | 23% |
| | | Crew | 24 | 26% | 20 | 15% |
| | | Captain | 24 | 14% | 20 | 8% |
| | 2008 | Owner | 25 | 60% | - | - |
| | | Labor total | 25 | 40% | 24 | 22% |
| | | Crew | 25 | 26% | 24 | 15% |
| | | Captain | 25 | 14% | 24 | 8% |
| | 2009 | Owner | 15 | 60% | - | - |
| | | Labor total | 15 | 40% | 13 | 21% |
| | | Crew | 15 | 26% | 13 | 15% |
| | | Captain | 15 | 12% | 13 | 7% |
| | 2010 | Owner | 4 | * | - | - |
| | | Labor total | 4 | * | 4 | * |
| | | Crew | 4 | * | 4 | * |
| | | Captain | 4 | * | 4 | * |
| | 2013 | Labor total | - | - | 18 | 24% |
| | | Crew | - | - | 18 | 17% |
| | | Captain | - | - | 18 | 8% |

Continued on next page.

Table 4.19: Continued

| | | | Net share distribution | | Gross share distribution | |
|---|---|---|---|---|---|---|
| | | Share | Vessels | Median share | Vessels | Median share |
| SMB | 2009 | Owner | 7 | 60% | - | - |
| | | Labor total | 7 | 40% | 7 | 17% |
| | | Crew | 7 | 26% | 7 | 13% |
| | | Captain | 7 | 14% | 7 | 6% |
| | 2010 | Owner | 11 | 60% | - | - |
| | | Labor total | 11 | 40% | 10 | 20% |
| | | Crew | 11 | 27% | 10 | 14% |
| | | Captain | 11 | 14% | 10 | 6% |
| | 2011 | Owner | 18 | 60% | - | - |
| | | Labor total | 18 | 40% | 17 | 22% |
| | | Crew | 18 | 30% | 17 | 14% |
| | | Captain | 18 | 12% | 17 | 5% |
| | 2012 | Labor total | - | - | 17 | 18% |
| | | Crew | - | - | 17 | 13% |
| | | Captain | - | - | 17 | 6% |

**Notes:** 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.20: Harvesting Sector Activity Days, CR Program Fisheries

| | | | Vessels | Days active–total (median)[b] | | Days fishing–total (median)[c] | |
|---|---|---|---|---|---|---|---|
| | | Year | | EDR | CIF | EDR | CIF |
| AIG | CP | 98/01/04 | 4(2) | * | - | - | - |
| | | 2005 | 2 | * | - | * | - |
| | | 2006 | 1 | * | - | * | - |
| | | 2007 | 1 | * | * | * | * |
| | | 2008 | 1 | * | * | * | * |
| | CV | 98/01/04 | 52(22) | 1,203(40) | - | - | - |
| | | 2005 | 10 | 589(54) | - | 411(38) | - |
| | | 2006 | 6 | 571(102) | - | 410(67) | - |
| | | 2007 | 6 | 471(75) | 439(74) | 349(55) | 289(45) |
| | | 2008 | 4 | * | * | * | * |
| | CVCP | 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 | - | 641(104) | - | 427(74) |
| | | 2013 | 6 | - | 662(104) | - | 430(68) |
| BBR | CP | 98/01/04 | 20(9) | 59(7) | - | - | - |
| | | 2005 | 5 | 162(23) | - | 98(19) | - |
| | | 2006 | 3 | * | - | * | - |
| | | 2007 | 3 | * | * | * | * |
| | | 2008 | 3 | * | * | * | * |
| | CV | 98/01/04 | 631(250) | 2,611(10) | - | - | - |
| | | 2005 | 85 | 2,253(25) | - | 1,374(13) | - |
| | | 2006 | 79 | 1,766(21) | - | 1,062(12) | - |
| | | 2007 | 71 | 2,274(30) | 1,930(26) | 1,442(19) | 1,230(16) |
| | | 2008 | 76 | 2,459(29) | 2,306(28) | 1,702(20) | 1,555(19) |
| | CVCP | 2009 | 70 | 2,126(29) | 1,936(27) | 1,408(19) | 1,306(18) |
| | | 2010 | 65 | 2,321(34) | 2,023(30) | 1,604(22) | 1,429(22) |
| | | 2011 | 62 | 1,150(17) | 910(14) | 701(10) | 538(8) |
| | | 2012 | 64 | - | 843(13) | - | 499(8) |
| | | 2013 | 63 | - | 947(14) | - | 587(9) |
| BSS | CP | 98/01/04 | 18(8) | 239(39) | - | - | - |
| | | 2005 | 6 | 189(28) | - | 80(8) | - |
| | | 2006 | 4 | * | - | * | - |
| | | 2007 | 4 | * | * | * | * |
| | | 2008 | 4 | * | * | * | * |
| | CV | 98/01/04 | 522(210) | 6,331(25) | - | - | - |
| | | 2005 | 150 | 2,710(16) | - | 1,275(7) | - |
| | | 2006 | 74 | 2,926(34) | - | 1,930(22) | - |
| | | 2007 | 63 | 2,321(36) | 2,009(31) | 1,491(21) | 1,057(15) |
| | | 2008 | 74 | 3,610(48) | 3,223(40) | 2,408(30) | 1,737(22) |
| | CVCP | 2009 | 77 | 3,869(49) | 3,602(44) | 2,600(32) | 2,111(26) |
| | | 2010 | 68 | 3,032(42) | 2,812(40) | 2,110(29) | 1,718(24) |
| | | 2011 | 68 | 3,303(46) | 2,878(40) | 2,217(30) | 1,734(24) |
| | | 2012 | 72 | - | 5,665(79) | - | 3,391(48) |
| | | 2013 | 71 | - | 4,581(58) | - | 2,998(38) |

Continued on next page.

Table 4.20: Continued

| | | Year | Vessels | Days active–total (median)[b] EDR | Days active–total (median)[b] CIF | Days fishing–total (median)[c] EDR | Days fishing–total (median)[c] CIF |
|---|---|---|---|---|---|---|---|
| BST | CP | 2005 | 1 | * | - | * | - |
| | | 2006 | 1 | * | - | * | - |
| | | 2007 | 1 | * | * | * | * |
| | | 2008 | 1 | * | * | * | * |
| | CV | 2005 | 4 | * | - | * | - |
| | | 2006 | 25 | 416(13) | - | 283(10) | - |
| | | 2007 | 24 | 555(22) | 445(17) | 410(16) | 295(11) |
| | | 2008 | 26 | 557(18) | 549(22) | 390(10) | 389(12) |
| | CVCP | 2009 | 17 | 467(22) | 350(17) | 321(15) | 238(12) |
| | | 2010 | 4 | * | * | * | * |
| | | 2013 | 18 | - | 279(12) | - | 200(9) |
| PIK | CV | 98/01/04 | 43(43) | 762(15) | - | - | - |
| SMB | CP | 98/01/04 | 2(2) | * | - | - | - |
| | CV | 98/01/04 | 93(93) | 1,630(17) | - | - | - |
| | | 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(36) | 473(26) | 468(24) |
| | | 2012 | 17 | - | 542(33) | - | 363(19) |
| WAI | CP | 98/01/04 | 2(1) | * | - | - | - |
| | CV | 98/01/04 | 3(3) | * | - | - | - |

**Notes:** 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 ADFShellfish 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.
WAI data for 2001 includes activity in Petrel Bank test fishery.

**Source:** ADF&G Shellfish Observer Program, Confidential Interview Form (CIF) data, eLandings, NMFS AFSC BSAI Crab Economic Data Report (EDR) database

Table 4.21: Processor Non-Processing Salary and Wages, CR Program Fisheries

| | | Processors | Salary cost ($1,000) | | | Salaried employees | | |
|---|---|---|---|---|---|---|---|---|
| | Year | | Obs | Total | Per plant, median | Total | Cost per employee ($1000), median | Per plant, median |
| CP | 98/01/04 | 17(9) | 17 | $400.50 | $47.30 | 17 | $19.30 | 2.0 |
| | 2005 | 8 | 7 | $1,158.50 | $49.40 | 44 | $12.30 | 3.0 |
| | 2006 | 4 | 4 | * | * | * | * | * |
| | 2007 | 4 | 4 | * | * | * | * | * |
| | 2008 | 4 | 4 | * | * | * | * | * |
| | 2009 | 5 | 3 | * | * | * | * | * |
| | 2010 | 3 | 2 | * | * | * | * | * |
| | 2011 | 3 | 3 | * | * | * | * | * |
| SF | 98/01/04 | 65(32) | 65 | $9,560.70 | $193.40 | 1,096 | $10.30 | 17.0 |
| | 2005 | 17 | 17 | $11,447.30 | $77.40 | 1,592 | $5.30 | 20.0 |
| | 2006 | 13 | 13 | $13,927.40 | $375.90 | 2,031 | $4.60 | 20.0 |
| | 2007 | 14 | 14 | $6,049.30 | $257.50 | 691 | $8.70 | 15.0 |
| | 2008 | 13 | 13 | $12,124.80 | $305.90 | 1,056 | $11.30 | 16.0 |
| | 2009 | 17 | 11 | $8,454.90 | $568.80 | 900 | $10.40 | 29.0 |
| | 2010 | 17 | 12 | $6,340.50 | $108.70 | 786 | $6.00 | 22.0 |
| | 2011 | 17 | 13 | $6,900.60 | $385.80 | 1,148 | $5.90 | 25.0 |
| | 2012 | 13 | 13 | $53,542.53 | $1,030.83 | 1,428 | $41.23 | 33.0 |
| | 2013 | 12 | 12 | $56,290.72 | $1,231.34 | 1,459 | $39.55 | 28.5 |

**Notes:** 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 shows number of active processing observations that reported salary data in EDR; difference from Processors column 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.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.22: Food and Provisions Costs, CR Program Fisheries

| | | Year | Total Costs ($1,000) | Median Costs ($1,000) | Vessels/plants |
|---|---|---|---|---|---|
| CP | ALL | 98/01/04 | $377 | $41 | 25(10) |
| | | 2005 | $205 | $22 | 7 |
| | | 2006 | * | * | 4 |
| | | 2007 | * | * | 4 |
| | | 2008 | * | * | 4 |
| | | 2009 | * | * | 4 |
| | | 2010 | * | * | 2 |
| | | 2011 | * | * | 2 |
| | AIG | 2012 | * | * | 1 |
| | BBR | 2012 | * | * | 2 |
| | | 2013 | * | * | 2 |
| | BSS | 2012 | * | * | 2 |
| | | 2013 | * | * | 2 |
| | BST | 2013 | * | * | 1 |
| CV | ALL | 98/01/04 | $2,738 | $9 | 622(249) |
| | | 2005 | $1,473 | $5 | 149 |
| | | 2006 | $711 | $8 | 66 |
| | | 2007 | $687 | $11 | 57 |
| | | 2008 | $1,394 | $14 | 65 |
| | | 2009 | $840 | $12 | 56 |
| | | 2010 | $1,045 | $14 | 47 |
| | | 2011 | $769 | $12 | 50 |
| | AIG | 2012 | $130 | $20 | 5 |
| | | 2013 | $142 | $19 | 6 |
| | BBR | 2012 | $312 | $4 | 60 |
| | | 2013 | $312 | $4 | 57 |
| | BSS | 2012 | $1,083 | $14 | 68 |
| | | 2013 | $691 | $10 | 66 |
| | BST | 2013 | $62 | $3 | 15 |
| | SMB | 2012 | $120 | $6 | 16 |
| SFP | ALL | 98/01/04 | $3,018 | $144 | 49(24) |
| | | 2005 | $1,044 | $89 | 13 |
| | | 2006 | $1,108 | $115 | 10 |
| | | 2007 | $1,240 | $107 | 12 |
| | | 2008 | $1,412 | $89 | 9 |
| | | 2009 | $876 | $122 | 7 |
| | | 2010 | $1,687 | $112 | 11 |
| | | 2011 | $1,547 | $108 | 11 |

**Notes:** Data shown for all BSAI crab fisheries by calendar year. All dollar values are adjusted for inflation to 2013-equivalent value. Information suppressed for confidentiality where indicated by "*", and data not available where indicated by "-".

[a] Beginning in 2012, vessel food and provisions expenses are reported on a by-fishery basis, and collection from shoreside processors was discontinued.

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.23: Fishery Expenditures -Vessel Fuel Costs, CR Program Fisheries

| | | Fuel expenses | | Gallons purchased | | Fuel price |
|---|---|---|---|---|---|---|
| | Year | Total ($1,000) | Median ($1,000) | Total (1,000s) | Median (1,000s) | Average |
| AIG | 2012 | $1,266 | $238 | 355 | 70 | $3.57 |
| | 2013 | $1,660 | $302 | 455 | 85 | $3.65 |
| BBR | 2012 | $3,045 | $34 | 731 | 8 | $4.17 |
| | 2013 | $3,330 | $37 | 813 | 9 | $4.10 |
| BSS | 2012 | $14,240 | $164 | 3,431 | 38 | $4.15 |
| | 2013 | $10,923 | $115 | 2,645 | 28 | $4.13 |
| BST | 2013 | $519 | $22 | 137 | 6 | $3.78 |
| SMB | 2012 | $1,275 | $83 | 296 | 19 | $4.31 |

**Source:** NMFS AFSC BSAI Crab Economic Data Report (EDR) database .

Table 4.24: Average Monthly Fuel Prices For Selected Ports

| | Port | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1999 | Dutch Harbor | - | $1.35 | $1.29 | $1.51 | $1.46 | $1.47 | $1.63 | $1.69 | $1.71 | $1.68 | $1.67 | $1.66 |
| | Kodiak | - | $1.21 | $1.21 | $1.44 | $1.54 | $1.54 | $1.65 | $1.66 | $1.68 | $1.68 | $1.71 | $1.71 |
| | Seattle | $0.83 | $0.91 | $0.83 | $1.31 | $0.99 | $1.19 | $1.39 | $1.21 | $1.40 | $1.34 | $1.27 | $1.32 |
| 2000 | Dutch Harbor | $1.64 | $1.78 | $2.16 | $2.16 | $1.94 | - | $1.97 | $1.99 | $2.11 | $2.32 | $2.39 | $2.39 |
| | Kodiak | $1.65 | $1.79 | $2.09 | $2.09 | $2.04 | $1.98 | $2.04 | $2.04 | $2.15 | $2.27 | $2.40 | $2.40 |
| | Seattle | $1.43 | $1.47 | $1.63 | $1.63 | $1.42 | $1.43 | $1.64 | $1.48 | $2.08 | $2.08 | $1.98 | $2.13 |
| 2001 | Adak | - | - | $2.40 | $2.24 | $2.24 | $2.17 | $2.24 | $2.06 | $2.06 | $2.17 | - | $1.98 |
| | Dutch Harbor | $2.48 | $2.34 | $2.34 | $2.20 | $2.17 | $2.16 | $2.17 | $2.04 | $2.13 | $2.15 | $2.04 | $1.91 |
| | Kodiak | $2.49 | $2.40 | $2.28 | $2.13 | $2.12 | $2.13 | $2.13 | $2.09 | $2.13 | $2.02 | $1.96 | $1.75 |
| | Seattle | $2.04 | $1.72 | $1.63 | $1.69 | $1.69 | $1.64 | $1.51 | $1.45 | $1.76 | $1.35 | $1.33 | $1.05 |
| 2002 | Adak | $1.97 | $1.97 | $1.97 | $1.97 | $2.11 | - | - | $1.97 | $2.10 | $2.25 | - | - |
| | Dutch Harbor | $1.80 | $1.54 | $1.53 | $1.69 | $1.77 | $1.77 | $1.77 | $1.77 | $1.85 | $1.92 | $1.97 | $2.00 |
| | Kodiak | $1.73 | $1.62 | $1.61 | $1.65 | $1.71 | $1.71 | $1.98 | $1.69 | $1.79 | $1.83 | $1.83 | $1.83 |
| | Seattle | $1.18 | $1.08 | $1.33 | $1.47 | $1.55 | $1.53 | $1.55 | $1.52 | $1.75 | $1.56 | $1.73 | $1.54 |
| 2003 | Adak | $2.21 | $2.21 | - | $2.54 | $2.44 | $2.44 | $2.36 | $2.36 | $2.36 | $2.36 | $2.36 | $2.36 |
| | Dutch Harbor | $1.96 | $2.05 | $2.22 | $2.36 | $2.24 | $2.20 | $2.20 | $2.20 | $2.28 | $2.28 | $2.28 | $2.28 |
| | Kodiak | $1.81 | $1.88 | $2.10 | $2.30 | $2.14 | $2.08 | $2.08 | $2.09 | $2.06 | $2.26 | $2.06 | $2.06 |
| | Seattle | $1.73 | $1.76 | $2.55 | $2.10 | $1.80 | $1.75 | $1.91 | $1.89 | $1.87 | $1.79 | $1.82 | $1.84 |
| 2004 | Adak | $2.31 | $2.31 | $2.31 | - | $2.52 | $2.81 | $2.81 | $2.81 | - | $2.95 | $3.03 | $3.03 |
| | Dutch Harbor | $2.15 | $2.15 | $2.36 | $2.30 | $2.37 | $2.56 | $2.56 | $2.66 | $2.67 | $2.80 | $2.88 | $2.88 |
| | Kodiak | $1.95 | $1.98 | $2.13 | $2.16 | $2.35 | $2.54 | $2.57 | $2.57 | $2.57 | $2.64 | $2.83 | $2.85 |
| | Seattle | $1.85 | $2.03 | $2.13 | $2.19 | $2.54 | $2.45 | $2.39 | $2.42 | $2.43 | $2.86 | $2.89 | $2.42 |
| 2005 | Adak | $2.80 | $2.80 | $2.87 | $2.95 | - | $3.54 | $3.07 | $3.14 | $3.35 | $3.54 | $3.54 | $3.54 |
| | Dutch Harbor | $2.67 | $2.67 | $2.78 | $2.87 | $2.94 | $2.94 | $2.94 | $3.07 | $3.35 | $3.37 | $3.45 | $3.43 |
| | Kodiak | $2.56 | $2.56 | $2.62 | $2.82 | $2.98 | $2.98 | $2.97 | $2.98 | $3.31 | $3.58 | $3.52 | $3.47 |
| | Seattle | $2.22 | $2.45 | $2.98 | $3.05 | $2.99 | $2.77 | $2.97 | $3.17 | $3.83 | $3.77 | $3.38 | $2.96 |

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Table 4.24: Continued

| | Port | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | Adak | - | $3.21 | $3.21 | - | $4.26 | $3.53 | $3.53 | $3.53 | $3.74 | $3.74 | $3.68 | $3.68 |
| | Dutch Harbor | $3.09 | $3.08 | $3.08 | $3.08 | $3.31 | $3.39 | $3.38 | $3.46 | $3.57 | $3.40 | $3.23 | $3.20 |
| | Kodiak | $3.11 | $3.12 | $3.12 | $3.15 | $3.36 | $3.37 | $3.37 | $3.44 | $3.62 | $3.44 | $3.18 | $3.25 |
| | Seattle | $2.90 | $2.74 | $3.16 | $3.04 | $3.53 | $3.63 | $3.48 | $3.71 | $3.78 | $3.07 | $3.09 | $3.38 |
| 2007 | Adak | $3.66 | $3.66 | $3.38 | $3.26 | $3.50 | $3.50 | $3.50 | $3.50 | $3.50 | $3.59 | $3.66 | $3.92 |
| | Dutch Harbor | $3.13 | $3.08 | $3.04 | $3.06 | $3.22 | $3.33 | $3.33 | $3.35 | $3.44 | $3.46 | $3.66 | $3.90 |
| | Kodiak | $3.11 | $3.08 | $3.05 | $3.04 | $3.17 | $3.29 | $3.29 | $3.29 | $3.48 | $3.42 | $3.60 | $3.68 |
| | Seattle | $3.26 | $3.19 | $3.04 | $3.31 | $3.41 | $3.41 | $3.48 | $3.54 | $3.39 | $3.65 | $4.18 | $3.96 |
| 2008 | Adak | $3.72 | $3.72 | $3.81 | $4.19 | - | $4.83 | $5.24 | $5.41 | $5.41 | $5.41 | $5.41 | $5.41 |
| | Dutch Harbor | $3.48 | $3.50 | $3.74 | $4.35 | - | $5.04 | $5.21 | $5.37 | $5.19 | $5.01 | $4.59 | $4.48 |
| | Kodiak | $3.51 | $3.56 | $3.68 | $4.41 | - | $4.95 | $5.11 | $5.40 | $5.23 | $4.93 | $4.63 | $3.83 |
| | Seattle | $3.88 | $3.70 | $4.11 | $4.37 | - | $5.17 | $5.14 | $5.02 | $4.74 | $3.65 | $3.42 | $2.83 |
| 2009 | Adak | $5.51 | $3.96 | $3.84 | $3.72 | $3.72 | $3.42 | $3.42 | $3.42 | - | $3.54 | $3.54 | $3.54 |
| | Dutch Harbor | $3.62 | $3.21 | $3.03 | $3.03 | $3.03 | $3.03 | $3.30 | $3.26 | $3.30 | $3.44 | $3.44 | $3.49 |
| | Kodiak | $3.42 | $3.25 | $3.07 | $2.95 | $2.95 | $3.07 | $3.19 | $3.19 | $3.23 | $3.42 | $3.28 | $3.31 |
| | Seattle | $2.71 | $2.56 | $2.38 | $2.48 | $2.69 | $2.84 | $2.84 | $2.89 | $3.21 | $3.07 | $3.20 | $3.19 |
| 2010 | Adak | $3.26 | $3.26 | - | $3.26 | $3.41 | $3.41 | $3.41 | $3.41 | $3.48 | $3.48 | $3.65 | $3.65 |
| | Dutch Harbor | $3.17 | $3.22 | $3.17 | $3.24 | $3.33 | $3.31 | $3.41 | $3.33 | $3.33 | $3.33 | $3.49 | $3.49 |
| | Kodiak | $3.05 | $3.21 | $3.15 | $3.26 | $3.43 | $3.37 | $3.27 | $3.26 | $3.26 | $3.29 | $3.43 | $3.43 |
| | Seattle | $3.08 | $2.92 | $3.00 | $3.22 | $3.44 | $3.18 | $3.02 | $3.15 | $3.27 | $3.16 | $3.41 | $3.35 |
| 2011 | Adak | $3.45 | $3.63 | $3.81 | $4.12 | $4.43 | $4.28 | - | $4.33 | $4.23 | $4.23 | $4.35 | $4.54 |
| | Dutch Harbor | $3.31 | $3.41 | $3.51 | $3.88 | $3.95 | $3.98 | $3.98 | $3.98 | $3.98 | $3.98 | $3.98 | $3.98 |
| | Kodiak | $3.25 | $3.35 | $3.39 | $3.87 | $3.95 | $4.04 | $4.00 | $4.01 | $3.95 | $4.01 | $3.99 | $4.01 |
| | Seattle | $3.26 | $3.44 | $3.87 | $4.09 | $4.18 | $4.07 | $3.77 | $3.88 | $4.09 | $3.78 | $3.88 | $3.80 |
| 2012 | Adak | $4.54 | - | - | - | $4.50 | $4.50 | $4.50 | $4.50 | $4.50 | $4.50 | $4.50 | $4.50 |
| | Dutch Harbor | $3.98 | $3.98 | $4.19 | $4.19 | $4.28 | $4.26 | $4.08 | $3.98 | $4.08 | $4.14 | $4.14 | $4.14 |
| | Kodiak | $3.88 | $3.93 | $4.01 | $4.20 | $4.28 | $4.23 | $4.06 | $3.91 | $4.03 | $4.18 | $4.12 | $4.12 |
| | Seattle | $3.66 | $3.78 | $4.12 | $4.27 | $4.23 | $3.70 | $3.40 | $3.89 | $4.24 | $3.94 | $3.92 | $3.81 |

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Table 4.24: Continued

| | Port | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2013 | Adak | - | $4.35 | $4.35 | - | $4.39 | $4.39 | - | $4.39 | $4.39 | $4.39 | $4.39 | $4.39 |
| | Dutch Harbor | $4.00 | $3.95 | $4.01 | $4.00 | $3.99 | $4.00 | $4.00 | $4.01 | $4.03 | $4.00 | $3.99 | $3.93 |
| | Kodiak | $3.94 | $3.94 | $4.00 | $3.99 | $3.99 | $4.01 | $3.97 | $4.01 | $4.03 | $4.03 | $3.96 | $3.95 |
| | Seattle | $3.58 | $3.71 | $3.72 | $3.71 | $3.55 | $3.58 | $3.53 | $3.71 | $3.74 | $3.62 | $3.60 | $3.67 |
| 2014 | Adak | - | - | - | - | - | - | - | - | - | - | - | - |
| | Dutch Harbor | - | - | - | - | - | - | - | - | - | - | - | - |
| | Kodiak | - | - | - | - | - | - | - | - | - | - | - | - |
| | Seattle | - | - | - | - | - | - | - | - | - | - | - | - |

**Notes:**

**Source:** Pacific States Marine Fisheries Commission EFIN monthly marine fuel price data [http://www.psmfc.org/efin/data/fuel.html#FUEL_AK].

Table 4.25: Crab Harvest Quota Lease Activity, Volume, Cost, and Average Lease Prices and Rates; CR Program Fisheries

| | | | Vessels[a] | Pounds Leased (1000lbs) | | | Cost ($1000) | | | Average Lease Price ($/pound)[b] | | Average Lease Rate (Percent of ex-vessel value)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median | Mean | Total | Median | Mean | Median | Mean | Median |
| AIG | CDQ + ACA | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 2 | * | * | * | * | * | * | * | * | * |
| | CVC + CPC | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 5 | 151.06 | 27.36 | 25.18 | 306.44 | 44.72 | $51.07 | $1.86 | $1.89 | 0.41% |
| | CVO A | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 5 | 2,026.23 | 327.87 | 405.25 | 3,586.87 | 573.10 | $717.38 | $1.50 | $1.65 | 0.35% |
| | CVO B + CPO | 2012 | 4 | * | * | * | * | * | * | * | * | * |
| | | 2013 | 6 | 1,284.80 | 83.15 | 142.76 | 1,828.34 | 227.00 | $203.15 | $1.48 | $1.72 | 0.35% |
| BBR | CDQ + ACA | 2012 | 5 | 368.62 | 70.68 | 73.72 | 2,254.79 | 447.32 | $450.96 | $5.58 | $6.14 | 0.64% |
| | | 2013 | 8 | 713.42 | 77.40 | 89.18 | 3,440.46 | 364.23 | $430.06 | $4.86 | $4.81 | 0.65% |
| | CVC + CPC | 2012 | 36 | 171.60 | 4.24 | 4.52 | 927.41 | 21.93 | $24.41 | $5.39 | $5.43 | 0.63% |
| | | 2013 | 37 | 198.96 | 4.52 | 4.85 | 973.43 | 21.61 | $23.74 | $4.77 | $4.92 | 0.66% |
| | CVO A | 2012 | 50 | 3,618.97 | 65.48 | 72.38 | 18,415.90 | 315.77 | $368.32 | $5.34 | $5.48 | 0.64% |
| | | 2013 | 51 | 4,425.51 | 78.75 | 86.78 | 20,263.19 | 343.39 | $397.32 | $4.49 | $4.64 | 0.64% |
| | CVO B + CPO | 2012 | 42 | 539.10 | 7.60 | 11.72 | 3,011.82 | 43.02 | $66.93 | $5.52 | $5.90 | 0.65% |
| | | 2013 | 45 | 777.86 | 10.07 | 15.56 | 3,700.31 | 47.23 | $74.01 | $4.74 | $4.64 | 0.65% |
| BSS | CDQ + ACA | 2012 | 11 | 6,463.57 | 563.35 | 587.60 | 7,534.51 | 684.46 | $684.96 | $1.16 | $1.17 | 0.49% |
| | | 2013 | 11 | 6,409.21 | 563.98 | 582.66 | 7,985.71 | 747.64 | $725.97 | $1.24 | $1.24 | 0.54% |
| | CVC + CPC | 2012 | 39 | 1,879.88 | 47.96 | 45.85 | 2,073.23 | 52.03 | $51.83 | $1.13 | $1.15 | 0.46% |
| | | 2013 | 41 | 1,767.02 | 35.03 | 40.16 | 2,080.07 | 39.90 | $47.27 | $1.13 | $1.23 | 0.46% |
| | CVO A | 2012 | 55 | 42,796.16 | 640.32 | 778.11 | 43,992.07 | 678.51 | $799.86 | $1.03 | $1.03 | 0.46% |
| | | 2013 | 56 | 34,352.58 | 486.63 | 613.44 | 36,888.66 | 514.12 | $658.73 | $1.06 | $1.07 | 0.46% |
| | CVO B + CPO | 2012 | 47 | 6,989.61 | 83.97 | 131.88 | 8,070.30 | 103.66 | $152.27 | $1.12 | $1.19 | 0.46% |
| | | 2013 | 50 | 7,740.91 | 78.48 | 133.46 | 9,536.70 | 94.59 | $164.43 | $1.16 | $1.18 | 0.47% |

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Table 4.25: Continued

| | | | Vessels[a] | Pounds Leased (1000lbs) | | | Cost ($1000) | | | Average Lease Price ($/pound)[b] | | Average Lease Rate (Percent of ex-vessel value)[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Year | | Total | Median | Mean | Total | Median | Mean | Median | Mean | Median |
| BST | CDQ + ACA | 2013 | 5 | 88.01 | 24.87 | 17.60 | 74.27 | 15.64 | $14.85 | $1.00 | $1.04 | 0.34% |
| | CVC + CPC | 2013 | 10 | 41.62 | 1.10 | 3.20 | 31.56 | 1.16 | $2.43 | $0.79 | $0.74 | 0.28% |
| | CVO A | 2013 | 16 | 776.65 | 52.73 | 48.54 | 543.84 | 25.23 | $33.99 | $0.73 | $0.66 | 0.28% |
| | CVO B + CPO | 2013 | 13 | 130.35 | 6.21 | 8.15 | 119.31 | 4.50 | $7.46 | $0.79 | $0.84 | 0.28% |
| SMB | CDQ + ACA | 2012 | 3 | * | * | * | * | * | * | * | * | * |
| | CVC + CPC | 2012 | 9 | 94.70 | 2.48 | 10.52 | 46.53 | 5.54 | $5.17 | $1.47 | $1.66 | 0.34% |
| | CVO A | 2012 | 17 | 1,149.28 | 49.07 | 67.61 | 1,683.09 | 68.36 | $99.01 | $1.42 | $1.66 | 0.32% |
| | CVO B + CPO | 2012 | 10 | 143.73 | 11.56 | 11.06 | 214.51 | 18.54 | $16.50 | $1.47 | $1.52 | 0.33% |

**Notes:** Other fishery data is not shown due to insufficient observations. Lease data shown represent arms length lease transactions reported by quota purchasers in the EDR.

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), and 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.

[a] 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.

[b] 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.

[c] 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.

**Source:** NMFS AFSC BSAI Crab Economic Data (preliminary findings for 2013 subject to revision following completion of data validation).

Table 4.26: Counts Of QS/PQS Sales and IFQ/IPQ Lease Transfers, All CR Program Fisheries

| | Transfer | 05/06 | 06/07 | 07/08 | 08/09 | 09/10 | 10/11 | 11/12 | 12/13 | 13/14 |
|---|---|---|---|---|---|---|---|---|---|---|
| Harvest | Cooperative lease | 144 | 171 | 211 | 229 | 190 | 247 | 163 | 180 | 281 |
| | Noncooperative lease | 113 | 39 | 16 | - | - | - | 4 | - | - |
| | QS sale | 199 | 329 | 292 | 209 | 221 | 192 | 126 | 211 | 215 |
| Processing | PQS sale | 7 | 7 | 12 | 42 | 4 | - | - | 3 | 4 |
| | PQS lease | 40 | 39 | 32 | 45 | 31 | 25 | 28 | 35 | 30 |

**Notes:** Data shown by calendar year.

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files

Table 4.27: IFQ Fisheries Estimated Weighted Mean Price Per Crab Quota Unit for QS and PQS Sale Transfers

| | | CVC QS | | | | CVO QS | | | | Processor QS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit |
| BBR | 05/06 | 21(19,14) | 1,221.05 | 56.18 | $1.15 | 14(6,10) | 7,139.91 | 115.40 | $0.69 | - | - | - | - |
| | 06/07 | 24(20,17) | 1,130.33 | 40.08 | $0.79 | 27(17,11) | 24,420.20 | 404.43 | $1.15 | - | - | - | - |
| | 07/08 | 10(8,5) | 525.49 | 56.28 | $0.87 | 21(11,13) | 7,144.78 | 288.73 | $1.46 | - | - | - | - |
| | 08/09 | 9(7,7) | 482.47 | 53.64 | $0.91 | 25(16,19) | 13,988.27 | 274.01 | $1.39 | 4(4,3) | 31,159.18 | 4,680.19 | $0.10 |
| | 09/10 | 9(6,7) | 427.85 | 38.27 | $0.87 | 12(10,11) | 4,525.84 | 374.91 | $1.18 | 1(1,1) | * | * | * |
| | 10/11 | 5(5,5) | 292.57 | 45.87 | $0.71 | 33(15,22) | 14,596.18 | 194.71 | $0.95 | - | - | - | - |
| | 11/12 | 3(3,2) | * | * | * | 3(3,3) | 2,229.68 | 987.57 | $1.20 | - | - | - | - |
| | 12/13 | 4(3,3) | 127.72 | 34.93 | $0.71 | 21(9,16) | 7,044.13 | 141.43 | $0.83 | - | - | - | - |
| | 13/14 | 9(8,7) | 282.72 | 34.00 | $0.80 | 7(6,4) | 5,423.95 | 1,051.28 | $0.95 | - | - | - | - |
| BSS | 05/06 | 25(14,12) | 2,793.09 | 109.80 | $0.28 | 22(9,12) | 24,619.41 | 442.13 | $0.47 | - | - | - | - |
| | 06/07 | 35(17,15) | 2,864.46 | 64.53 | $0.25 | 36(17,8) | 48,984.24 | 603.67 | $0.34 | - | - | - | - |
| | 07/08 | 12(5,5) | 821.97 | 50.65 | $0.37 | 26(10,13) | 24,751.78 | 1,000.26 | $0.67 | - | - | - | - |
| | 08/09 | 10(5,6) | 757.82 | 48.14 | $0.49 | 15(9,11) | 12,649.18 | 382.28 | $0.58 | 2(2,2) | * | * | * |
| | 09/10 | 15(6,8) | 1,121.20 | 49.19 | $0.33 | 14(8,10) | 6,452.42 | 365.95 | $0.47 | 2(1,1) | * | * | * |
| | 10/11 | 11(6,6) | 851.94 | 80.89 | $0.39 | 56(17,24) | 34,571.82 | 248.49 | $0.53 | - | - | - | - |
| | 11/12 | 2(1,1) | * | * | * | 21(10,12) | 12,597.57 | 289.40 | $0.60 | - | - | - | - |
| | 12/13 | 9(4,5) | 920.85 | 84.74 | $0.95 | 40(9,18) | 16,222.63 | 178.61 | $0.95 | - | - | - | - |
| | 13/14 | 12(6,6) | 674.45 | 33.76 | $0.73 | 50(15,18) | 20,655.73 | 120.52 | $1.07 | 1(1,1) | * | * | * |
| BST | 05/06 | 14(13,11) | 400.79 | 29.96 | $0.23 | 10(8,9) | 5,203.13 | 406.87 | $0.36 | - | - | - | - |
| | 06/07 | 3(3,3) | 138.40 | 48.31 | $0.09 | - | - | - | - | - | - | - | - |
| EAG | 05/06 | 2(2,1) | * | * | * | 2(1,1) | * | * | * | 1(1,1) | * | * | * |
| | 07/08 | 2(2,2) | * | * | * | - | - | - | - | - | - | - | - |
| | 08/09 | 4(4,3) | 59.91 | 12.80 | $3.13 | 1(1,1) | * | * | * | 3(2,2) | * | * | * |
| | 09/10 | 1(1,1) | * | * | * | 5(2,5) | * | * | * | - | - | - | - |
| | 10/11 | 3(2,3) | * | * | * | - | - | - | - | - | - | - | - |
| | 13/14 | - | - | - | - | 9(2,9) | * | * | * | - | - | - | - |

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Table 4.27: Continued

| | Year | CVC QS | | | | CVO QS | | | | Processor QS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit |
| EBT | 06/07 | 17(14,14) | 394.01 | 21.63 | $0.05 | 17(13,8) | 6,577.53 | 416.69 | $0.10 | - | - | - | - |
| | 07/08 | 5(4,3) | 178.14 | 35.14 | $0.10 | 9(7,8) | 3,030.92 | 388.26 | $0.18 | - | - | - | - |
| | 08/09 | 4(4,4) | 165.75 | 42.94 | $0.65 | 14(8,9) | 6,246.18 | 373.38 | $0.17 | 5(5,4) | 12,152.78 | 1,645.50 | $0.05 |
| | 09/10 | 3(2,3) | * | * | * | 5(4,5) | 832.23 | 171.59 | $0.05 | - | - | - | - |
| | 10/11 | 3(3,3) | 83.85 | 33.89 | $0.05 | 6(6,2) | * | * | * | - | - | - | - |
| | 11/12 | - | - | - | - | 2(2,2) | * | * | * | - | - | - | - |
| | 12/13 | 2(2,2) | * | * | * | 12(5,10) | 2,824.76 | 44.15 | $0.11 | - | - | - | - |
| | 13/14 | 6(5,6) | 127.32 | 26.55 | $0.06 | 10(5,6) | 1,411.57 | 120.99 | $0.05 | - | - | - | - |
| PIK | 07/08 | - | - | - | - | 8(2,3) | * | * | * | - | - | - | - |
| | 08/09 | 4(2,1) | * | * | * | - | - | - | - | - | - | - | - |
| | 10/11 | 1(1,1) | * | * | * | 6(3,1) | * | * | * | - | - | - | - |
| | 12/13 | 2(1,1) | * | * | * | 4(1,2) | * | * | * | - | - | - | - |
| SMB | 05/06 | 1(1,1) | * | * | * | 2(1,2) | * | * | * | - | - | - | - |
| | 06/07 | 4(3,3) | 40.32 | 10.23 | $0.30 | 6(1,3) | * | * | * | - | - | - | - |
| | 07/08 | 4(2,1) | * | * | * | 10(3,4) | 876.90 | 91.10 | $0.43 | - | - | - | - |
| | 08/09 | 2(1,1) | * | * | * | - | - | - | - | - | - | - | - |
| | 09/10 | 2(1,1) | * | * | * | 4(2,2) | * | * | * | - | - | - | - |
| | 10/11 | 3(2,2) | * | * | * | 1(1,1) | * | * | * | - | - | - | - |
| | 11/12 | 2(2,1) | * | * | * | 2(2,2) | * | * | * | - | - | - | - |
| | 12/13 | 2(1,1) | * | * | * | 23(8,12) | 1,002.73 | 20.65 | $0.91 | 3(2,1) | * | * | * |
| | 13/14 | 6(3,3) | 36.29 | 5.62 | $0.59 | 2(1,1) | * | * | * | - | - | - | - |
| WAG | 05/06 | 2(1,1) | * | * | * | 1(1,1) | * | * | * | - | - | - | - |
| | 07/08 | 2(1,1) | * | * | * | - | - | - | - | - | - | - | - |
| | 08/09 | 1(1,1) | * | * | * | - | - | - | - | 8(4,3) | 18,921.69 | 979.27 | $0.07 |
| | 10/11 | - | - | - | - | 2(1,1) | * | * | * | - | - | - | - |
| | 11/12 | - | - | - | - | 2(1,1) | * | * | * | - | - | - | - |
| | 12/13 | - | - | - | - | 2(1,1) | * | * | * | - | - | - | - |
| | 13/14 | - | - | - | - | 1(1,1) | * | * | * | - | - | - | - |

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Table 4.27: Continued

| | | CVC QS | | | | CVO QS | | | | Processor QS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Year | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit | Transfers (transferors, transferees) | Total units transferred (1,000) | Median units per transfer (1,000s) | Median price per QS unit |
| WAI | 13/14 | - | - | - | - | 2(2,1) | * | * | * | - | - | - | - |
| WBT | 06/07 | 16(13,13) | 372.39 | 21.89 | $0.05 | 22(18,9) | 8,511.78 | 358.84 | $0.06 | - | - | - | - |
| | 07/08 | 5(4,3) | 178.14 | 35.14 | $0.06 | 8(6,7) | 2,948.05 | 388.26 | $0.12 | - | - | - | - |
| | 08/09 | 4(4,4) | 165.75 | 42.94 | $0.11 | 14(8,9) | 6,246.18 | 373.38 | $0.12 | 5(5,4) | 12,152.78 | 1,645.50 | $0.00 |
| | 09/10 | 2(2,2) | * | * | * | 5(4,5) | 832.23 | 171.59 | $0.02 | - | - | - | - |
| | 10/11 | 3(3,3) | 83.85 | 33.89 | $0.05 | 5(5,2) | * | * | * | - | - | - | - |
| | 11/12 | - | - | - | - | 1(1,1) | * | * | * | - | - | - | - |
| | 12/13 | 2(2,2) | * | * | * | 11(5,9) | 884.76 | 36.26 | $0.08 | - | - | - | - |
| | 13/14 | 6(5,6) | 127.32 | 26.55 | $0.05 | 10(5,6) | 1,411.58 | 120.99 | $0.05 | - | - | - | - |

**Notes:**

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

Table 4.28: CR Program Computation Quota Share (QS) and IFQ Ratio

| | 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 | 387,828,995 | 12,000,335 | 399,829,330 | 56.5713 |
| | BSS | 970,675,714 | 30,207,732 | 1,000,883,446 | 16.7610 |
| | EAG | 9,700,156 | 299,989 | 10,000,145 | 3.3569 |
| | SMB | 29,119,073 | 910,327 | 30,029,400 | 20.4699 |
| | WAG | 38,800,000 | 1,200,058 | 40,000,058 | 14.9143 |
| 2013/2014 | BBR | 387,828,995 | 12,000,335 | 399,829,330 | 51.6575 |
| | BSS | 970,675,714 | 30,207,732 | 1,000,883,446 | 20.6008 |
| | EAG | 9,700,156 | 299,989 | 10,000,145 | 3.3569 |
| | EBT | 194,308,390 | 6,002,104 | 200,310,494 | 152.1307 |
| | WAG | 38,800,000 | 1,200,058 | 40,000,058 | 14.9143 |
| | WBT | 194,308,390 | 5,941,499 | 200,249,889 | 135.2583 |
| 2014/2015 | BBR | 387,828,995 | 12,000,335 | 399,829,330 | 44.4878 |
| | BSS | 970,675,714 | 30,200,191 | 1,000,875,905 | 16.3662 |
| | EAG | 9,700,156 | 299,989 | 10,000,145 | 3.3569 |
| | EBT | 194,308,390 | 5,848,302 | 200,156,692 | 26.2260 |
| | SMB | 29,008,038 | 867,016 | 29,875,054 | 50.6786 |
| | WAG | 38,800,000 | 1,200,058 | 40,000,058 | 14.9143 |
| | WBT | 194,308,390 | 5,787,697 | 200,096,087 | 33.5591 |

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

Table 4.29: Comparison of QS Sale Price to IFQ Lease Price

| | | CVC QS | | | | | CVO QS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Season | Average price/QS unit | Ratio QS units:IFQ pounds | QS Price/IFQ Pound | Average IFQ Lease Price | IFQ/QS Price Ratio | Average price/QS unit | Ratio QS units:IFQ pounds | QS Price/IFQ Pound | Average IFQ Lease Price | IFQ/QS Price Ratio |
| BBR | 2012/2013 | $0.69 | 56.57 | $39.03 | $5.44 | 0.14 | $0.80 | 56.57 | $45.26 | $5.65 | 0.12 |
| | 2013/2014 | $0.80 | 51.66 | $41.33 | $4.91 | 0.12 | $0.95 | 51.66 | $49.07 | $4.61 | 0.09 |
| BSS | 2011/2012 | - | - | - | - | - | $0.58 | 12.51 | $7.26 | $1.10 | 0.15 |
| | 2012/2013 | $0.92 | 16.76 | $15.42 | $1.22 | 0.08 | $0.92 | 16.76 | $15.42 | $1.12 | 0.07 |
| EBT | 2013/2014 | $0.06 | 152.13 | $8.37 | $0.79 | 0.09 | $0.05 | 152.13 | $7.61 | $0.74 | 0.10 |
| SMB | 2012/2013 | - | - | - | - | - | $0.88 | 20.47 | $18.01 | $1.60 | 0.09 |

**Notes:** Average price/QS unit is calculated as the median price of quota share sales as reported by QS transfer applicants to NMFS AKRO RAM division; Ratio of QS units/IFQ pounds is the season-specific conversion factor used by RAM in determining annual IFQ issuance in pounds per QS share; QS Price/IFQ Pound is the ratio of the preceding quotients, used to convert the QS price from price/QS unit to price/IFQ pound, to facilitate comparison of QS price to IFQ price on the same per-unit basis.

**Source:** NMFS AKRO RAM division Quota share transfer data; NMFS AFSC BSAI Crab Economic Data Report (EDR) database.

Table 4.30: IFQ Fisheries Owner-and Crew-Type Quota Share Holdings

| | | Crew QS | | | Owner QS | | |
|---|---|---|---|---|---|---|---|
| | Season | QS holders | Median holding | Max holding | QS holders | Median holding | Max holding |
| BBR | Initial allocation | 181 | 0.52% | 1.23% | 252 | 0.36% | 2.24% |
| | 2012/2013 | 137 | 0.56% | 2.00% | 258 | 0.29% | 5.00% |
| | 2013/2014 | 132 | 0.56% | 2.00% | 255 | 0.29% | 5.00% |
| BSS | Initial allocation | 155 | 0.64% | 1.59% | 241 | 0.39% | 2.35% |
| | 2012/2013 | 124 | 0.69% | 1.99% | 261 | 0.27% | 5.00% |
| | 2013/2014 | 124 | 0.69% | 1.99% | 260 | 0.26% | 5.00% |
| EAG | Initial allocation | 13 | 8.20% | 12.79% | 15 | 5.90% | 20.11% |
| | 2012/2013 | 10 | 8.55% | 20.14% | 16 | 4.92% | 20.00% |
| | 2013/2014 | 10 | 8.55% | 20.14% | 24 | 1.85% | 20.00% |
| EBT | Initial allocation | 166 | 0.56% | 1.99% | 256 | 0.30% | 3.87% |
| | 2012/2013 | 148 | 0.58% | 1.99% | 246 | 0.27% | 4.97% |
| | 2013/2014 | 146 | 0.58% | 1.99% | 240 | 0.28% | 4.97% |
| PIK | Initial allocation | 40 | 2.47% | 4.81% | 112 | 0.53% | 3.41% |
| | 2012/2013 | 39 | 2.60% | 4.81% | 119 | 0.50% | 6.96% |
| | 2013/2014 | 40 | 2.54% | 4.81% | 116 | 0.53% | 6.96% |

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Table 4.30: Continued

| | Season | Crew QS | | | Owner QS | | |
|---|---|---|---|---|---|---|---|
| | | QS holders | Median holding | Max holding | QS holders | Median holding | Max holding |
| SMB | Initial allocation | 73 | 1.35% | 3.10% | 137 | 0.62% | 4.43% |
| | 2012/2013 | 66 | 1.45% | 3.29% | 143 | 0.53% | 5.00% |
| | 2013/2014 | 66 | 1.41% | 3.33% | 138 | 0.54% | 5.00% |
| WAG | Initial allocation | 9 | 6.17% | 41.74% | 15 | 1.78% | 45.73% |
| | 2012/2013 | 8 | 7.45% | 41.74% | 14 | 1.69% | 45.73% |
| | 2013/2014 | 8 | 7.45% | 41.74% | 13 | 1.81% | 45.73% |
| WAI | Initial allocation | 4 | 20.84% | 49.46% | 30 | 0.65% | 45.16% |
| | 2012/2013 | 4 | 20.84% | 49.46% | 40 | 0.50% | 45.16% |
| | 2013/2014 | 4 | 20.84% | 49.46% | 37 | 0.65% | 45.16% |
| WBT | Initial allocation | 166 | 0.56% | 1.99% | 256 | 0.30% | 3.87% |
| | 2012/2013 | 148 | 0.58% | 1.99% | 247 | 0.27% | 4.97% |
| | 2013/2014 | 146 | 0.58% | 1.99% | 241 | 0.27% | 4.97% |

**Notes:**

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files .

Table 4.31: IFQ Fisheries Owner and Crew Quota Share Holdings by Fishery and Sector

| | | | Crew QS | | | | Owner QS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Season | QS holders | Median holding | Max holding | Mean holding in fishery-owner-QS type pool (sd) | QS holders | Median holding | Max holding | Mean holding in fishery-owner-QS type pool (sd) |
| BBR | CP | Initial allocation | 8 | 11.16% | 35.13% | 12.5(12.15)% | 13 | 8.40% | 21.62% | 7.69(5.52)% |
| | | 2012/2013 | 9 | 10.01% | 35.13% | 11.11(11.89)% | 11 | 7.03% | 21.62% | 9.09(6.67)% |
| | | 2013/2014 | 9 | 10.01% | 35.13% | 11.11(11.89)% | 11 | 7.03% | 21.62% | 9.09(6.67)% |
| | CV | Initial allocation | 178 | 0.52% | 1.17% | 0.56(0.22)% | 242 | 0.37% | 2.17% | 0.41(0.3)% |
| | | 2012/2013 | 134 | 0.57% | 2.07% | 0.75(0.5)% | 251 | 0.31% | 4.90% | 0.4(0.44)% |
| | | 2013/2014 | 129 | 0.58% | 2.07% | 0.78(0.52)% | 248 | 0.31% | 4.90% | 0.4(0.47)% |
| BSS | CP | Initial allocation | 8 | 11.79% | 27.11% | 12.5(7.31)% | 14 | 7.78% | 13.53% | 7.14(3.66)% |
| | | 2012/2013 | 7 | 11.33% | 33.82% | 14.29(9.52)% | 22 | 2.31% | 24.29% | 4.55(5.65)% |
| | | 2013/2014 | 7 | 11.33% | 33.82% | 14.29(9.52)% | 21 | 2.65% | 24.29% | 4.76(5.71)% |
| | CV | Initial allocation | 152 | 0.66% | 1.39% | 0.66(0.24)% | 231 | 0.41% | 2.58% | 0.43(0.32)% |
| | | 2012/2013 | 122 | 0.72% | 2.11% | 0.82(0.48)% | 247 | 0.31% | 4.44% | 0.4(0.44)% |
| | | 2013/2014 | 122 | 0.71% | 2.11% | 0.82(0.51)% | 248 | 0.30% | 4.44% | 0.4(0.48)% |
| EAG | CP | Initial allocation | - | - | - | - | 2 | 50.00% | 84.59% | 50(48.92)% |
| | | 2012/2013 | - | - | - | - | 1 | 100.00% | 100.00% | 100(0)% |
| | | 2013/2014 | - | - | - | - | 5 | 7.24% | 49.66% | 20(18.99)% |
| | CV | Initial allocation | 13 | 8.20% | 12.79% | 7.69(3.28)% | 13 | 6.90% | 21.12% | 7.69(5.49)% |
| | | 2012/2013 | 10 | 8.55% | 20.14% | 10(6.88)% | 15 | 5.25% | 21.02% | 6.67(5.49)% |
| | | 2013/2014 | 10 | 8.55% | 20.14% | 10(6.88)% | 20 | 4.06% | 21.02% | 5(5.35)% |
| EBT | CP | Initial allocation | 15 | 5.37% | 18.32% | 6.67(4.74)% | 13 | 6.97% | 16.79% | 7.69(5.11)% |
| | | 2012/2013 | 15 | 5.37% | 18.32% | 6.67(4.74)% | 13 | 6.39% | 16.79% | 7.69(5.21)% |
| | | 2013/2014 | 16 | 5.29% | 18.32% | 6.25(4.87)% | 12 | 8.44% | 16.79% | 8.33(5.57)% |
| | CV | Initial allocation | 160 | 0.58% | 2.08% | 0.63(0.38)% | 246 | 0.32% | 2.94% | 0.41(0.38)% |
| | | 2012/2013 | 142 | 0.62% | 2.17% | 0.7(0.48)% | 238 | 0.29% | 4.56% | 0.42(0.47)% |
| | | 2013/2014 | 141 | 0.61% | 2.17% | 0.71(0.52)% | 233 | 0.29% | 4.56% | 0.43(0.48)% |

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Table 4.31: Continued

| | | | Crew QS | | | | Owner QS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Season | QS holders | Median holding | Max holding | Mean holding in fishery-owner-QS type pool (sd) | QS holders | Median holding | Max holding | Mean holding in fishery-owner-QS type pool (sd) |
| PIK | CP | Initial allocation | - | - | - | - | 1 | 100.00% | 100.00% | 100(0)% |
| | | 2012/2013 | - | - | - | - | 1 | 100.00% | 100.00% | 100(0)% |
| | | 2013/2014 | - | - | - | - | 1 | 100.00% | 100.00% | 100(0)% |
| | CV | Initial allocation | 40 | 2.47% | 4.81% | 2.5(1.05)% | 111 | 0.55% | 3.42% | 0.9(0.86)% |
| | | 2012/2013 | 39 | 2.60% | 4.81% | 2.56(1.17)% | 118 | 0.50% | 6.99% | 0.85(0.94)% |
| | | 2013/2014 | 40 | 2.54% | 4.81% | 2.5(1.17)% | 115 | 0.55% | 6.99% | 0.87(0.94)% |
| SMB | CP | Initial allocation | - | - | - | - | 5 | 15.46% | 43.40% | 20(13.24)% |
| | | 2012/2013 | - | - | - | - | 5 | 15.46% | 43.40% | 20(13.24)% |
| | | 2013/2014 | - | - | - | - | 5 | 15.46% | 43.40% | 20(13.24)% |
| | CV | Initial allocation | 73 | 1.35% | 3.10% | 1.37(0.44)% | 133 | 0.65% | 4.52% | 0.75(0.62)% |
| | | 2012/2013 | 66 | 1.45% | 3.29% | 1.52(0.58)% | 139 | 0.56% | 5.10% | 0.72(0.69)% |
| | | 2013/2014 | 66 | 1.41% | 3.33% | 1.52(0.65)% | 135 | 0.56% | 5.10% | 0.74(0.71)% |
| WAG | CP | Initial allocation | 2 | 50.00% | 98.19% | 50(68.14)% | 2 | 50.00% | 98.94% | 50(69.21)% |
| | | 2012/2013 | 2 | 50.00% | 98.19% | 50(68.14)% | 3 | 1.06% | 98.93% | 33.33(56.81)% |
| | | 2013/2014 | 2 | 50.00% | 98.19% | 50(68.14)% | 3 | 1.06% | 98.93% | 33.33(56.81)% |
| | CV | Initial allocation | 8 | 9.67% | 37.75% | 12.5(10.75)% | 13 | 3.31% | 45.51% | 7.69(11.98)% |
| | | 2012/2013 | 7 | 10.96% | 37.75% | 14.29(11.66)% | 11 | 3.31% | 45.51% | 9.09(13.72)% |
| | | 2013/2014 | 7 | 10.96% | 37.75% | 14.29(11.66)% | 11 | 3.31% | 45.51% | 9.09(13.72)% |
| WAI | CP | Initial allocation | 1 | 100.00% | 100.00% | 100(0)% | 2 | 50.00% | 96.86% | 50(66.26)% |
| | | 2012/2013 | 1 | 100.00% | 100.00% | 100(0)% | 2 | 50.00% | 96.86% | 50(66.26)% |
| | | 2013/2014 | 1 | 100.00% | 100.00% | 100(0)% | 2 | 50.00% | 96.86% | 50(66.26)% |
| | CV | Initial allocation | 4 | 16.53% | 57.26% | 25(22.34)% | 29 | 1.01% | 22.09% | 3.45(5.32)% |
| | | 2012/2013 | 4 | 16.53% | 57.26% | 25(22.34)% | 39 | 0.63% | 18.78% | 2.56(4.44)% |
| | | 2013/2014 | 4 | 16.53% | 57.26% | 25(22.34)% | 36 | 1.04% | 18.78% | 2.78(4.56)% |
| WBT | CP | Initial allocation | 15 | 5.37% | 18.32% | 6.67(4.74)% | 13 | 6.97% | 16.79% | 7.69(5.11)% |
| | | 2012/2013 | 15 | 5.37% | 18.32% | 6.67(4.74)% | 13 | 6.39% | 16.79% | 7.69(5.21)% |
| | | 2013/2014 | 16 | 5.29% | 18.32% | 6.25(4.87)% | 12 | 8.44% | 16.79% | 8.33(5.57)% |
| | CV | Initial allocation | 160 | 0.58% | 2.08% | 0.63(0.38)% | 246 | 0.32% | 2.94% | 0.41(0.38)% |
| | | 2012/2013 | 142 | 0.62% | 2.17% | 0.7(0.48)% | 239 | 0.29% | 4.56% | 0.42(0.47)% |
| | | 2013/2014 | 141 | 0.61% | 2.17% | 0.71(0.52)% | 234 | 0.29% | 4.56% | 0.43(0.48)% |

**Notes:**

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files

Table 4.32: Crew-Type Crab Quota Share Allocation Held by Active CFEC-Licensed Gear Operators, IFQ Fisheries

| | Category | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 |
|---|---|---|---|---|---|---|---|---|---|---|
| CPC | Total QS holders at season end | 24 | 24 | 24 | 24 | 25 | 27 | 28 | 28 | 29 |
| | QS holders active as gear operators during season | 13 | 10 | 12 | 13 | 9 | 12 | 12 | 11 | 11 |
| | Percent QS holders active as gear operators during season | 54 | 42 | 50 | 54 | 36 | 44 | 43 | 39 | 38 |
| | Percent season-end quota pool held by active gear operators | 69 | 69 | 60 | 60 | 43 | 51 | 51 | 49 | 49 |
| CVC | Total QS holders at season end | 218 | 208 | 205 | 200 | 201 | 198 | 197 | 196 | 197 |
| | QS holders active as gear operators during season | 94 | 81 | 83 | 80 | 72 | 70 | 71 | 64 | 63 |
| | Percent QS holders active as gear operators during season | 43 | 39 | 40 | 40 | 36 | 35 | 36 | 33 | 32 |
| | Percent season-end quota pool held by active gear operators | 53 | 51 | 51 | 49 | 49 | 47 | 45 | 43 | 42 |

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Table 4.32: Continued

| | Category | 2005/2006 | 2006/2007 | 2007/2008 | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 |
|---|---|---|---|---|---|---|---|---|---|---|
| Combined | Total QS holders at season end | 224 | 214 | 211 | 206 | 207 | 204 | 203 | 202 | 203 |
| | QS holders active as gear operators during season | 95 | 82 | 84 | 82 | 72 | 71 | 72 | 65 | 64 |
| | Percent QS holders active as gear operators during season | 42 | 38 | 40 | 40 | 35 | 35 | 35 | 32 | 32 |
| | Percent season-end quota pool held by active gear operators | 54 | 52 | 51 | 50 | 49 | 48 | 46 | 43 | 42 |

**Notes:** 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.

**Source:** eLandings,CFEC Gear Operator Permit registry, NMFS AKRO RAM division Quota Share and Processor Quota Share holder files and IFQ accounting database.

Table 4.33: IFQ Fisheries Owner and Crew Quota Share Holdings by QS Holder Location

| | | Owner QS, Alaska | | Owner QS, WA-OR-ID | | Owner QS, Other Location | | Crew QS, Alaska | | Crew QS, WA-OR-ID | | Crew QS, Other Location | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Season | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held |
| BBR | Initial allocation | 41 | 16% | 203 | 82% | 8 | 2% | 44 | 19% | 127 | 74% | 10 | 6% |
| | 2012/2013 | 57 | 26% | 190 | 71% | 11 | 2% | 32 | 21% | 95 | 71% | 10 | 8% |
| | 2013/2014 | 55 | 27% | 189 | 70% | 11 | 2% | 30 | 21% | 89 | 69% | 13 | 10% |
| BSS | Initial allocation | 40 | 16% | 195 | 82% | 6 | 2% | 35 | 19% | 111 | 76% | 9 | 5% |
| | 2012/2013 | 56 | 29% | 193 | 68% | 12 | 3% | 30 | 22% | 85 | 73% | 9 | 5% |
| | 2013/2014 | 52 | 30% | 196 | 67% | 12 | 3% | 28 | 21% | 84 | 71% | 12 | 8% |
| EAG | Initial allocation | 1 | 2% | 14 | 98% | 0 | 0% | 1 | 2% | 11 | 94% | 1 | 4% |
| | 2012/2013 | 4 | 31% | 12 | 69% | 0 | 0% | 0 | 0% | 10 | 100% | 0 | 0% |
| | 2013/2014 | 5 | 31% | 18 | 69% | 1 | 0% | 0 | 0% | 10 | 100% | 0 | 0% |
| EBT | Initial allocation | 40 | 16% | 209 | 82% | 7 | 2% | 40 | 20% | 117 | 75% | 9 | 5% |
| | 2012/2013 | 56 | 28% | 178 | 69% | 12 | 3% | 34 | 21% | 100 | 70% | 14 | 9% |
| | 2013/2014 | 52 | 29% | 175 | 68% | 13 | 3% | 33 | 21% | 96 | 69% | 17 | 11% |
| PIK | Initial allocation | 22 | 25% | 86 | 72% | 4 | 3% | 16 | 34% | 19 | 55% | 5 | 11% |
| | 2012/2013 | 35 | 39% | 79 | 56% | 5 | 5% | 15 | 33% | 17 | 50% | 7 | 17% |
| | 2013/2014 | 34 | 38% | 77 | 56% | 5 | 5% | 17 | 36% | 17 | 50% | 6 | 14% |

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Table 4.33: Continued

| | Season | Owner QS, Alaska | | Owner QS, WA-OR-ID | | Owner QS, Other Location | | Crew QS, Alaska | | Crew QS, WA-OR-ID | | Crew QS, Other Location | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held | QS holders | Percent of fishery quota pool held |
| SMB | Initial allocation | 20 | 19% | 113 | 80% | 4 | 1% | 17 | 24% | 53 | 72% | 3 | 4% |
| | 2012/2013 | 33 | 29% | 105 | 68% | 5 | 3% | 17 | 24% | 44 | 69% | 5 | 7% |
| | 2013/2014 | 32 | 32% | 102 | 66% | 4 | 2% | 17 | 24% | 43 | 68% | 6 | 8% |
| WAG | Initial allocation | 1 | 2% | 14 | 98% | 0 | 0% | 0 | 0% | 8 | 94% | 1 | 6% |
| | 2012/2013 | 5 | 63% | 9 | 37% | 0 | 0% | 0 | 0% | 8 | 100% | 0 | 0% |
| | 2013/2014 | 5 | 63% | 8 | 37% | 0 | 0% | 0 | 0% | 8 | 100% | 0 | 0% |
| WAI | Initial allocation | 6 | 3% | 24 | 97% | 0 | 0% | 0 | 0% | 4 | 100% | 0 | 0% |
| | 2012/2013 | 13 | 51% | 27 | 49% | 0 | 0% | 0 | 0% | 4 | 100% | 0 | 0% |
| | 2013/2014 | 13 | 52% | 23 | 48% | 1 | 0% | 0 | 0% | 4 | 100% | 0 | 0% |
| WBT | Initial allocation | 40 | 16% | 209 | 82% | 7 | 2% | 40 | 20% | 117 | 75% | 9 | 5% |
| | 2012/2013 | 57 | 28% | 178 | 69% | 12 | 3% | 34 | 21% | 100 | 70% | 14 | 9% |
| | 2013/2014 | 53 | 29% | 175 | 68% | 13 | 3% | 33 | 21% | 96 | 69% | 17 | 11% |

**Notes:**

**Source:** source

Table 4.34: Crab Processor Quota Share Allocation Holdings, by IFQ Fishery

| | Season | PQS holders | Median holding | Max holding | Mean holding in fishery PQS pool (sd) |
|---|---|---|---|---|---|
| BBR | Initial allocation | 17 | 1.64% | 22.98% | 5.88(7.07)% |
| | 2012/2013 | 16 | 4.39% | 22.98% | 6.25(6.5)% |
| | 2013/2014 | 16 | 4.39% | 22.98% | 6.25(6.48)% |
| BSS | Initial allocation | 20 | 2.08% | 25.18% | 5(6.73)% |
| | 2012/2013 | 19 | 3.42% | 25.18% | 5.26(6.81)% |
| | 2013/2014 | 18 | 3.76% | 25.18% | 5.56(6.9)% |
| EAG | Initial allocation | 9 | 3.55% | 45.36% | 11.11(15.37)% |
| | 2012/2013 | 10 | 5.24% | 45.36% | 10(13.84)% |
| | 2013/2014 | 10 | 5.24% | 45.36% | 10(13.84)% |
| EBT | Initial allocation | 23 | 0.83% | 24.26% | 4.35(6.51)% |
| | 2012/2013 | 21 | 1.85% | 24.26% | 4.76(6.51)% |
| | 2013/2014 | 21 | 1.85% | 24.26% | 4.76(6.51)% |
| PIK | Initial allocation | 14 | 3.17% | 24.49% | 7.14(8.09)% |
| | 2012/2013 | 13 | 3.87% | 24.49% | 7.69(8.19)% |
| | 2013/2014 | 13 | 3.87% | 24.49% | 7.69(8.19)% |
| SMB | Initial allocation | 12 | 5.06% | 32.67% | 8.33(10.56)% |
| | 2012/2013 | 11 | 4.34% | 32.67% | 9.09(10.3)% |
| | 2013/2014 | 11 | 4.34% | 32.67% | 9.09(10.26)% |
| WAG | Initial allocation | 9 | 1.03% | 62.98% | 11.11(21.23)% |
| | 2012/2013 | 10 | 3.41% | 29.98% | 10(12.04)% |
| | 2013/2014 | 10 | 3.41% | 29.98% | 10(12.04)% |
| WAI | Initial allocation | 9 | 1.03% | 62.98% | 11.11(21.23)% |
| | 2012/2013 | 8 | 4.03% | 32.99% | 12.5(14.67)% |
| | 2013/2014 | 8 | 4.03% | 32.99% | 12.5(14.67)% |
| WBT | Initial allocation | 23 | 0.83% | 24.26% | 4.35(6.51)% |
| | 2012/2013 | 21 | 1.85% | 24.26% | 4.76(6.51)% |
| | 2013/2014 | 21 | 1.85% | 24.26% | 4.76(6.51)% |

**Notes:** 2012/2013 and 2013/2014 holdings as of fishery season end. Includes QS and PQS held by wholly owned direct subsidiaries of CDQ groups.

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files .

Table 4.35: 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 | |
|---|---|---|---|---|---|---|---|---|---|
| | Season | CDQ Groups | Share of QS held | CDQ Groups | Share of QS held | CDQ Groups | Share of QS held | CDQ Groups | Share of QS held |
| BBR | Initial allocation | 1 | 4.29% | 3 | 1.23% | 4 | 1.37% | - | - |
| | 2012/2013 | 3 | 21.55% | 5 | 11.21% | 5 | 11.68% | 2 | 3.92% |
| | 2013/2014 | 3 | 21.55% | 5 | 12.37% | 5 | 12.79% | 2 | 4.15% |
| BSS | Initial allocation | 1 | 3.86% | 3 | 1.42% | 4 | 1.64% | - | - |
| | 2012/2013 | 3 | 27.38% | 6 | 11.65% | 6 | 13.07% | 3 | 11.51% |
| | 2013/2014 | 4 | 32.07% | 6 | 13.31% | 6 | 15.01% | 3 | 11.13% |
| EAG | 2012/2013 | - | - | 3 | 29.17% | 3 | 27.80% | 2 | 8.16% |
| | 2013/2014 | - | - | 3 | 29.17% | 3 | 27.80% | 2 | 8.16% |
| EBT | Initial allocation | 1 | 3.39% | 3 | 1.42% | 4 | 1.55% | - | - |
| | 2012/2013 | 3 | 26.52% | 6 | 9.98% | 6 | 11.10% | 2 | 7.74% |
| | 2013/2014 | 4 | 40.80% | 6 | 10.72% | 6 | 12.75% | 2 | 7.74% |
| PIK | Initial allocation | - | - | 1 | 2.34% | 1 | 2.33% | - | - |
| | 2012/2013 | - | - | 5 | 12.18% | 5 | 12.12% | 1 | 2.46% |
| | 2013/2014 | - | - | 5 | 12.95% | 5 | 12.88% | 1 | 2.46% |
| SMB | Initial allocation | - | - | 2 | 1.14% | 2 | 1.11% | - | - |
| | 2012/2013 | 1 | 43.40% | 4 | 8.71% | 5 | 9.38% | 2 | 5.90% |
| | 2013/2014 | 2 | 56.55% | 4 | 11.45% | 5 | 12.32% | 2 | 12.96% |
| WAG | 2012/2013 | 1 | 96.19% | 3 | 27.83% | 4 | 59.35% | 1 | 29.98% |
| | 2013/2014 | 1 | 96.19% | 3 | 27.83% | 4 | 59.35% | 1 | 29.98% |
| WAI | Initial allocation | - | - | 1 | 0.16% | 1 | 0.10% | - | - |
| | 2012/2013 | 1 | 95.82% | 5 | 15.38% | 5 | 46.16% | - | - |
| | 2013/2014 | 1 | 95.82% | 5 | 16.95% | 5 | 47.13% | - | - |
| WBT | Initial allocation | 1 | 3.39% | 3 | 1.42% | 4 | 1.55% | - | - |
| | 2012/2013 | 3 | 26.52% | 6 | 9.98% | 6 | 11.10% | 2 | 7.74% |
| | 2013/2014 | 4 | 40.80% | 6 | 10.72% | 6 | 12.75% | 2 | 7.74% |

**Notes:** 2012/2013 and 2013/2014 holdings as of fishery season end. Includes QS and PQS held by wholly owned direct subsidiaries of CDQ groups.

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files .

Table 4.36: Initial Crab QS/PQS Issuees With Holdings At Season End, by Share Type and IFQ Fishery

| | Quota | Initial issuance | 12/13 | 13/14 | Net change from initial issuance | Net change from previous year |
|---|---|---|---|---|---|---|
| BBR | CPC | 8 | 6 | 6 | -2 | 0 |
| | CPO | 13 | 8 | 8 | -5 | 0 |
| | CVC | 178 | 113 | 107 | -71 | -6 |
| | CVO | 242 | 182 | 178 | -64 | -4 |
| | All harvester QS | 426 | 302 | 292 | -134 | -10 |
| | Processor QS | 17 | 10 | 10 | -7 | 0 |
| BSS | CPC | 8 | 6 | 5 | -3 | -1 |
| | CPO | 14 | 9 | 8 | -6 | -1 |
| | CVC | 152 | 100 | 97 | -55 | -3 |
| | CVO | 231 | 173 | 168 | -63 | -5 |
| | All harvester QS | 389 | 278 | 269 | -120 | -9 |
| | Processor QS | 20 | 13 | 12 | -8 | -1 |
| BST | CPC | 15 | - | - | - | - |
| | CPO | 14 | - | - | - | - |
| | CVC | 170 | - | - | - | - |
| | CVO | 248 | - | - | - | - |
| | All harvester QS | 426 | - | - | - | - |
| | Processor QS | 23 | - | - | - | - |
| BTE | CPC | 15 | 15 | 14 | -1 | -1 |
| | CPO | 13 | 9 | 8 | -5 | -1 |
| | CVC | 160 | 130 | 127 | -33 | -3 |
| | CVO | 246 | 189 | 185 | -61 | -4 |
| | All harvester QS | 413 | 328 | 320 | -93 | -8 |
| | Processor QS | 23 | 16 | 16 | -7 | 0 |
| BTW | CPC | 15 | 15 | 14 | -1 | -1 |
| | CPO | 13 | 9 | 8 | -5 | -1 |
| | CVC | 160 | 130 | 127 | -33 | -3 |
| | CVO | 246 | 190 | 186 | -60 | -4 |
| | All harvester QS | 413 | 329 | 321 | -92 | -8 |
| | Processor QS | 23 | 16 | 16 | -7 | 0 |

Continued on next page.

Table 4.36: Continued

| | Quota | Initial issuance | 12/13 | 13/14 | Net change from initial issuance | Net change from previous year |
|---|---|---|---|---|---|---|
| EAG | CPO | 2 | 0 | 0 | -2 | 0 |
| | CVC | 13 | 6 | 6 | -7 | 0 |
| | CVO | 13 | 9 | 8 | -5 | -1 |
| | All harvester QS | 28 | 15 | 14 | -14 | -1 |
| | Processor QS | 9 | 6 | 6 | -3 | 0 |
| PIK | CPO | 1 | 1 | 1 | 0 | 0 |
| | CVC | 40 | 35 | 35 | -5 | 0 |
| | CVO | 111 | 87 | 86 | -25 | -1 |
| | All harvester QS | 148 | 119 | 118 | -30 | -1 |
| | Processor QS | 14 | 11 | 11 | -3 | 0 |
| SMB | CPO | 5 | 5 | 4 | -1 | -1 |
| | CVC | 73 | 55 | 51 | -22 | -4 |
| | CVO | 133 | 95 | 94 | -39 | -1 |
| | All harvester QS | 210 | 154 | 148 | -62 | -6 |
| | Processor QS | 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 | 8 | -5 | -1 |
| | All harvester QS | 24 | 16 | 15 | -9 | -1 |
| | Processor QS | 9 | 6 | 6 | -3 | 0 |

Continued on next page.

Table 4.36: Continued

| | Quota | Initial issuance | 12/13 | 13/14 | Net change from initial issuance | Net change from previous year |
|---|---|---|---|---|---|---|
| WAI | CPC | 1 | 1 | 1 | 0 | 0 |
| | CPO | 2 | 2 | 2 | 0 | 0 |
| | CVC | 4 | 4 | 4 | 0 | 0 |
| | CVO | 29 | 22 | 20 | -9 | -2 |
| | All harvester QS | 34 | 27 | 25 | -9 | -2 |
| | Processor QS | 9 | 5 | 5 | -4 | 0 |
| Unique QS/PQS holders across all fisheries | All harvester QS | 532 | 421 | 415 | -117 | -6 |

**Notes:**
Initial issuees received QS for the first crab season under the CR program, 2005/06. In the Tanner crab fishery, BST quota was initially issued; 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.
Initial issuance shows the number of QS recipients as of the beginning of the 2005/06 crab season; 12/13 and 13/14 show the number of original QS issuees remaining of the 2012/13 and 2013/14 season end.

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files

Table 4.37: IFQ Fisheries New Holders Of QS and PQS Relative To Initial Allocation and Prior Season End

| | | Owner QS, New in fishery | | Owner QS, New in all fisheries | | Crew QS, New in fishery | | Crew QS, New in all fisheries | | PQS, New in fishery | | PQS, New in all fisheries | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Relation | Entrants | Share of QS type acquired | Entrants | Share of QS type acquired | Entrants | Share of QS type acquired | Entrants | Share of QS type acquired | Entrants | Share of QS type acquired | Entrants | Share of QS type acquired |
| BBR | 2012 season end | 4 | 1% | 4 | 1% | 2 | 1% | 2 | 1% | - | - | - | - |
| | Initial allocation | 69 | 25% | 59 | 21% | 22 | 20% | 14 | 14% | 6 | 23% | 5 | 22% |
| BSS | 2012 season end | 7 | 1% | 7 | 1% | 4 | 2% | 2 | 0% | - | - | - | - |
| | Initial allocation | 85 | 23% | 75 | 21% | 25 | 20% | 18 | 15% | 6 | 20% | 5 | 20% |
| EAG | 2012 season end | 9 | 11% | 7 | 10% | - | - | - | - | - | - | - | - |
| | Initial allocation | 16 | 49% | 12 | 44% | 4 | 23% | 1 | 13% | 4 | 20% | 3 | 20% |
| EBT | 2012 season end | 3 | 0% | 3 | 0% | 3 | 1% | 2 | 1% | - | - | - | - |
| | Initial allocation | 47 | 18% | 47 | 18% | 14 | 9% | 12 | 8% | 5 | 11% | 4 | 11% |
| PIK | 2012 season end | 1 | 1% | - | - | 1 | 1% | - | - | - | - | - | - |
| | Initial allocation | 29 | 28% | 18 | 20% | 5 | 14% | 1 | 3% | 2 | 16% | 1 | 2% |
| SMB | 2012 season end | 1 | 1% | 1 | 1% | 4 | 4% | 3 | 3% | - | - | - | - |
| | Initial allocation | 41 | 23% | 31 | 17% | 15 | 24% | 9 | 15% | 5 | 24% | 4 | 17% |
| WAG | Initial allocation | 4 | 17% | 3 | 5% | 2 | 18% | 1 | 12% | 4 | 53% | 3 | 53% |
| WAI | Initial allocation | 16 | 19% | 7 | 5% | - | - | - | - | 3 | 62% | 2 | 35% |
| WBT | 2012 season end | 3 | 0% | 3 | 0% | 3 | 1% | 2 | 1% | - | - | - | - |
| | Initial allocation | 47 | 18% | 47 | 18% | 14 | 9% | 12 | 8% | 5 | 11% | 4 | 11% |

**Notes:** Entrants and Share of QS type acquired columns show the change in entry to the respective quota pools, relative to the reference period (Initial allocation = 2005/06) as of the beginning of the 2013/14 crab season.

**Source:** NMFS AKRO RAM division, Quota shareholder files.

Table 4.38: IFQ Fisheries Landings by Season

| | Season | IFQ permit holders | RCR permit holders | Landings | IFQ pounds (million) | Sold pounds (million) | Personal use pounds (1,000) | Deadloss pounds (1,000) |
|---|---|---|---|---|---|---|---|---|
| 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 | 132.0 |
| | 2008/2009 | 25 | 16 | 252 | 18.3 | 18.1 | 21.0 | 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 | 7.0 | 15.1 | 30.2 |
| | 2012/2013 | 9 | 15 | 219 | 7.1 | 7.0 | 15.2 | 28.8 |
| | 2013/2014 | 10 | 15 | 250 | 7.7 | 7.7 | 18.7 | 60.6 |
| 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 | 500.0 |
| | 2010/2011 | 10 | 14 | 466 | 48.8 | 48.5 | 3.3 | 314.0 |
| | 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 |
| | 2013/2014 | 10 | 13 | 573 | 48.6 | 48.2 | 1.5 | 354.5 |
| BST | 2005/2006 | 34 | 9 | 73 | 0.8 | 0.8 | 2.9 | 14.6 |
| EAG | 2005/2006 | 6 | 5 | 32 | 2.6 | 2.5 | 0.1 | 23.8 |
| | 2006/2007 | 4 | 6 | 32 | 2.7 | 2.7 | 0.0 | 31.3 |
| | 2007/2008 | 4 | 4 | 36 | 2.7 | 2.7 | 0.0 | 21.0 |
| | 2008/2009 | 3 | 5 | 29 | 2.8 | 2.8 | 0.0 | 24.1 |
| | 2009/2010 | 2 | 6 | 32 | * | * | * | * |
| | 2010/2011 | 2 | 7 | 30 | * | * | * | * |
| | 2011/2012 | 2 | 9 | 45 | * | * | * | * |
| | 2012/2013 | 2 | 10 | 46 | * | * | * | * |
| | 2013/2014 | 2 | 9 | 39 | * | * | * | * |
| 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 |
| | 2013/2014 | 5 | 13 | 107 | 1.3 | 1.3 | 2.1 | 6.2 |
| 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 |
| WAG | 2005/2006 | 3 | 5 | 42 | 2.4 | 2.4 | 3.5 | 26.3 |
| | 2006/2007 | 3 | 5 | 31 | 2.0 | 2.0 | 0.0 | 19.8 |
| | 2007/2008 | 3 | 4 | 34 | 2.2 | 2.2 | 0.0 | 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 | * | * | * | * |
| | 2013/2014 | 2 | 6 | 42 | * | * | * | * |

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Table 4.38: Continued

| | Season | IFQ permit holders | RCR permit holders | Landings | IFQ pounds (million) | Sold pounds (million) | Personal use pounds (1,000) | Deadloss pounds (1,000) |
|---|---|---|---|---|---|---|---|---|
| | 2006/2007 | 14 | 10 | 60 | 0.6 | 0.6 | 0.0 | 18.5 |
| | 2007/2008 | 8 | 8 | 44 | 0.5 | 0.5 | 1.1 | 4.1 |
| WBT | 2008/2009 | 10 | 7 | 50 | 0.1 | 0.1 | 0.1 | 2.6 |
| | 2009/2010 | 4 | 1 | 22 | * | * | * | * |
| | 2013/2014 | 8 | 13 | 186 | 1.2 | 1.2 | 0.0 | 15.0 |

**Notes:** 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.

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files and IFQ accounting database .

Table 4.39: Fleet Harvest Statistics by Calendar Year

| | Year | Vessels | Sold weight (million lbs) | Median vessel weight sold (1,000lbs) | Median vessel harvest as percent of fishery-year commercial lbs | Gini ratio |
|---|---|---|---|---|---|---|
| AIG | 1998 | 16 | 5.44 | 302.09 | 5.55% | 0.42 |
| | 1999 | 16 | 5.10 | 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 | 1,246.72 | 21.77% | 0.18 |
| | 2009 | 5 | 5.51 | 1,109.87 | 20.13% | 0.19 |
| | 2010 | 5 | 6.09 | 1,410.32 | 23.15% | 0.20 |
| | 2011 | 5 | 6.00 | 1,324.31 | 22.09% | 0.21 |
| | 2012 | 6 | 5.92 | 1,007.69 | 17.01% | 0.34 |
| | 2013 | 6 | 5.81 | 871.77 | 15.00% | 0.39 |
| BBR | 1998 | 274 | 14.70 | 49.34 | 0.34% | 0.30 |
| | 1999 | 256 | 11.53 | 37.92 | 0.33% | 0.29 |
| | 2000 | 244 | 8.07 | 28.46 | 0.35% | 0.31 |
| | 2001 | 230 | 8.30 | 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% | 0.30 |
| | 2012 | 64 | 7.80 | 108.53 | 1.39% | 0.30 |
| | 2013 | 63 | 8.52 | 122.03 | 1.43% | 0.29 |

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Table 4.39: Continued

| | Year | Vessels | Sold weight (million lbs) | Median vessel weight sold (1,000lbs) | Median vessel harvest as percent of fishery-year commercial lbs | Gini ratio |
|---|---|---|---|---|---|---|
| BSS | 1998 | 230 | 249.05 | 1,050.76 | 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% | 0.40 |
| | 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 | 57.68 | 599.96 | 1.04% | 0.32 |
| | 2010 | 68 | 47.84 | 642.93 | 1.34% | 0.32 |
| | 2011 | 68 | 54.05 | 693.58 | 1.28% | 0.30 |
| | 2012 | 72 | 88.23 | 1,126.73 | 1.28% | 0.30 |
| | 2013 | 70 | 65.49 | 890.11 | 1.36% | 0.28 |
| 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 |
| | 2013 | 22 | 1.19 | 39.63 | 3.33% | 0.52 |
| 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 | 117.30 | 9.36% | 0.34 |
| | 2011 | 18 | 1.85 | 80.15 | 4.33% | 0.32 |
| | 2012 | 17 | 1.59 | 83.71 | 5.25% | 0.31 |
| WAI | 1998 | 1 | * | * | * | * |
| | 2002 | 33 | 0.50 | 14.29 | 2.85% | 0.30 |
| | 2003 | 30 | 0.48 | 13.18 | 2.77% | 0.31 |

**Notes:** 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.

**Source:** ADF&G fish ticket data, and eLandings.

Table 4.40: Purchasing Statistics

| | Year | Processors | Purchased (million lbs) | Median Purchased lbs (million) | Median as percent of fishery year commercial lbs | Gini ratio |
|---|---|---|---|---|---|---|
| AIG | 1998 | 9 | 5.44 | 0.24 | 4.4% | 0.65 |
| | 1999 | 8 | 5.10 | 0.29 | 5.7% | 0.60 |
| | 2000 | 7 | 5.95 | 0.66 | 11.1% | 0.41 |
| | 2001 | 7 | 6.38 | 0.36 | 5.7% | 0.59 |
| | 2002 | 6 | 5.54 | 0.83 | 15.1% | 0.50 |
| | 2003 | 6 | 5.82 | 1.08 | 18.6% | 0.45 |
| | 2004 | 5 | 6.02 | 1.35 | 22.5% | 0.40 |
| | 2005 | 6 | 4.44 | 0.48 | 10.8% | 0.49 |
| | 2006 | 6 | 5.24 | 0.71 | 13.5% | 0.56 |
| | 2007 | 6 | 5.44 | 0.79 | 14.5% | 0.49 |
| | 2008 | 7 | 5.73 | 1.04 | 18.1% | 0.34 |
| | 2009 | 9 | 5.51 | 0.30 | 5.4% | 0.58 |
| | 2010 | 9 | 6.09 | 0.49 | 8.0% | 0.42 |
| | 2011 | 14 | 6.00 | 0.28 | 4.7% | 0.52 |
| | 2012 | 14 | 5.92 | 0.20 | 3.3% | 0.53 |
| | 2013 | 13 | 5.81 | 0.25 | 4.3% | 0.57 |
| BBR | 1998 | 28 | 14.70 | 0.26 | 1.8% | 0.61 |
| | 1999 | 24 | 11.53 | 0.21 | 1.9% | 0.61 |
| | 2000 | 24 | 8.07 | 0.11 | 1.4% | 0.65 |
| | 2001 | 25 | 8.30 | 0.10 | 1.2% | 0.66 |
| | 2002 | 26 | 9.48 | 0.13 | 1.4% | 0.64 |
| | 2003 | 26 | 15.39 | 0.29 | 1.9% | 0.58 |
| | 2004 | 25 | 15.02 | 0.23 | 1.5% | 0.61 |
| | 2005 | 16 | 18.14 | 0.50 | 2.8% | 0.61 |
| | 2006 | 15 | 15.55 | 0.54 | 3.5% | 0.61 |
| | 2007 | 18 | 20.17 | 0.52 | 2.6% | 0.60 |
| | 2008 | 17 | 20.13 | 0.61 | 3.0% | 0.54 |
| | 2009 | 16 | 15.78 | 0.48 | 3.1% | 0.55 |
| | 2010 | 17 | 14.73 | 0.39 | 2.7% | 0.58 |
| | 2011 | 18 | 7.79 | 0.20 | 2.5% | 0.58 |
| | 2012 | 17 | 7.80 | 0.33 | 4.2% | 0.54 |
| | 2013 | 17 | 8.52 | 0.34 | 4.0% | 0.58 |

Continued on next page.

Table 4.40: Continued

| | Year | Processors | Purchased (million lbs) | Median Purchased lbs (million) | Median as percent of fishery year commercial lbs | Gini ratio |
|---|---|---|---|---|---|---|
| BSS | 1998 | 44 | 249.05 | 1.73 | 0.7% | 0.59 |
| | 1999 | 37 | 192.41 | 3.79 | 2.0% | 0.55 |
| | 2000 | 28 | 32.81 | 0.86 | 2.6% | 0.52 |
| | 2001 | 24 | 24.78 | 0.63 | 2.5% | 0.51 |
| | 2002 | 27 | 31.94 | 0.35 | 1.1% | 0.63 |
| | 2003 | 21 | 27.51 | 0.97 | 3.5% | 0.48 |
| | 2004 | 23 | 23.69 | 0.61 | 2.6% | 0.53 |
| | 2005 | 20 | 24.86 | 0.86 | 3.5% | 0.53 |
| | 2006 | 13 | 38.02 | 2.27 | 6.0% | 0.47 |
| | 2007 | 18 | 34.76 | 1.74 | 5.0% | 0.49 |
| | 2008 | 17 | 62.23 | 2.96 | 4.8% | 0.49 |
| | 2009 | 18 | 57.68 | 2.51 | 4.3% | 0.52 |
| | 2010 | 13 | 47.84 | 3.30 | 6.9% | 0.42 |
| | 2011 | 16 | 54.05 | 2.21 | 4.1% | 0.49 |
| | 2012 | 16 | 88.23 | 3.73 | 4.2% | 0.50 |
| | 2013 | 15 | 65.49 | 3.14 | 4.8% | 0.50 |
| BST | 2005 | 5 | 0.26 | 0.02 | 6.0% | 0.78 |
| | 2006 | 9 | 0.99 | 0.07 | 7.4% | 0.61 |
| | 2007 | 9 | 2.25 | 0.21 | 9.4% | 0.41 |
| | 2008 | 11 | 2.33 | 0.16 | 6.9% | 0.51 |
| | 2009 | 11 | 2.14 | 0.16 | 7.5% | 0.45 |
| | 2010 | 7 | 0.37 | 0.04 | 9.6% | 0.43 |
| | 2013 | 12 | 1.19 | 0.06 | 4.9% | 0.63 |
| PIK | 1998 | 17 | 1.03 | 0.03 | 2.8% | 0.57 |
| SMB | 1998 | 16 | 2.95 | 0.09 | 3.1% | 0.66 |
| | 2009 | 6 | 0.45 | 0.06 | 12.2% | 0.45 |
| | 2010 | 9 | 1.25 | 0.07 | 5.7% | 0.59 |
| | 2011 | 11 | 1.85 | 0.08 | 4.1% | 0.61 |
| | 2012 | 11 | 1.59 | 0.07 | 4.4% | 0.59 |
| WAI | 1998 | 1 | * | * | * | * |
| | 2002 | 9 | 0.50 | 0.04 | 8.2% | 0.42 |
| | 2003 | 10 | 0.48 | 0.04 | 8.2% | 0.53 |

**Notes:** 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 counted as buyers
Buyers include catcher/processors landing and processing their own crab.

**Source:** ADF&G fish ticket data, and eLandings.

Table 4.41: Delivery and Trip Statistics by Season, CR Program Fisheries

| | Season | Vessels | Deliveries total | Trips total | Deliveries per vessel mean(sd) | Landings per trip, mean(sd) (thousand lbs) | Landings per delivery, mean(sd) (thousand lbs) | Trips per vessel means(sd) |
|---|---|---|---|---|---|---|---|---|
| | 1998 | 274 | 293 | - | 1.1(0.3) | - | 50.2(27.3) | - |
| | 1999 | 256 | 273 | - | 1.1(0.3) | - | 42.2(22.8) | - |
| | 2000 | 244 | 263 | - | 1.1(0.4) | - | 30.7(16.2) | - |
| | 2001 | 230 | 249 | - | 1.1(0.4) | - | 33.3(20.1) | - |
| | 2002 | 241 | 258 | - | 1.1(0.4) | - | 36.7(14.6) | - |
| | 2003 | 250 | 274 | - | 1.1(0.4) | - | 56.2(35.5) | - |
| | 2004 | 251 | 278 | - | 1.1(0.4) | - | 54.0(25.1) | - |
| BBR | 2005-2006 | 89 | 261 | - | 2.9(1.7) | - | 69.8(47.8) | - |
| | 2006-2007 | 81 | 187 | 156 | 2.3(1.1) | 100.1(72.8) | 82.8(61.6) | 1.9(0.9) |
| | 2007-2008 | 74 | 247 | 207 | 3.3(1.6) | 98.4(55.7) | 81.7(53.7) | 2.8(1.4) |
| | 2008-2009 | 78 | 263 | 237 | 3.4(1.8) | 85.8(51.3) | 76.5(48.1) | 3.0(1.5) |
| | 2009-2010 | 70 | 211 | 197 | 3.0(1.2) | 80.9(50.1) | 74.8(48.4) | 2.8(1.1) |
| | 2010-2011 | 65 | 213 | 198 | 3.3(1.3) | 74.9(50.1) | 69.0(42.7) | 3.0(1.1) |
| | 2011-2012 | 62 | 124 | 114 | 2.0(0.9) | 68.1(51.9) | 62.8(49.8) | 1.8(0.9) |
| | 2012-2013 | 64 | 118 | 99 | 1.8(0.9) | 79.3(57.4) | 66.1(45.2) | 1.5(0.7) |
| | 1999 | 241 | 1,720 | - | 7.1(2.7) | - | 111.9(71.8) | - |
| | 2000 | 231 | 313 | - | 1.4(0.7) | - | 104.8(53.8) | - |
| | 2001 | 207 | 316 | - | 1.5(1.0) | - | 78.4(56.3) | - |
| | 2002 | 191 | 430 | - | 2.3(1.1) | - | 74.3(57.5) | - |
| | 2003 | 190 | 261 | - | 1.4(1.0) | - | 105.4(55.9) | - |
| | 2004 | 189 | 243 | - | 1.3(0.8) | - | 97.5(53.9) | - |
| | 2005 | 167 | 211 | - | 1.3(0.7) | - | 116.1(52.3) | - |
| BSS | 2005-2006 | 78 | 316 | - | 4.1(2.9) | - | 115.9(75.7) | - |
| | 2006-2007 | 69 | 273 | 215 | 4.0(2.5) | 169.1(104.1) | 131.5(83.1) | 3.1(2.0) |
| | 2007-2008 | 78 | 466 | 413 | 6.0(2.9) | 151.9(85.9) | 134.1(81.2) | 5.3(2.5) |
| | 2008-2009 | 77 | 437 | 373 | 5.7(2.7) | 157.0(90.5) | 132.9(78.0) | 4.8(2.2) |
| | 2009-2010 | 68 | 308 | 283 | 4.5(1.9) | 168.5(91.5) | 154.1(85.4) | 4.2(1.6) |
| | 2010-2011 | 68 | 343 | 311 | 5.0(2.2) | 174.5(91.8) | 157.2(83.9) | 4.6(2.1) |
| | 2011-2012 | 72 | 658 | 626 | 9.1(3.7) | 141.9(90.9) | 134.0(85.4) | 8.7(3.4) |
| | 2012-2013 | 70 | 435 | 422 | 6.2(2.5) | 157.0(82.7) | 151.2(81.9) | 6.0(2.4) |

Continued on next page.

Table 4.41: Continued

| | Season | Vessels | Deliveries total | Trips total | Deliveries per vessel mean(sd) | Landings per trip, mean(sd) (thousand lbs) | Landings per delivery, mean(sd) (thousand lbs) | Trips per vessel means(sd) |
|---|---|---|---|---|---|---|---|---|
| | 2005-2006 | 33 | 64 | - | 1.9(1.1) | - | 14.6(22.9) | - |
| | 2006-2007 | 39 | 88 | 81 | 2.3(1.3) | 18.5(28.3) | 23.8(28.2) | 2.1(1.2) |
| BST | 2007-2008 | 27 | 95 | 93 | 3.5(2.4) | 17.9(25.3) | 21.9(25.3) | 3.4(2.4) |
| | 2008-2009 | 20 | 67 | 59 | 3.4(3.0) | 15.4(34.4) | 28.7(35.8) | 3.0(2.3) |
| | 2009-2010 | 13 | 32 | 28 | 2.5(1.6) | 15.1(35.9) | 41.0(43.0) | 2.2(1.2) |
| | 1998 | 14 | 53 | - | 3.8(1.4) | - | 59.7(36.0) | - |
| | 1999 | 15 | 59 | - | 3.9(1.2) | - | 50.8(32.5) | - |
| | 2000 | 15 | 50 | - | 3.3(0.8) | - | 61.5(33.0) | - |
| | 2001 | 19 | 45 | - | 2.4(0.6) | - | 69.5(44.3) | - |
| | 2002 | 19 | 43 | - | 2.3(0.5) | - | 64.3(38.1) | - |
| | 2003 | 18 | 37 | - | 2.1(0.2) | - | 78.4(38.0) | - |
| | 2004 | 19 | 32 | - | 1.7(0.5) | - | 88.8(54.7) | - |
| EAG | 2005-2006 | 7 | 34 | - | 4.9(2.1) | - | 83.5(47.3) | - |
| | 2006-2007 | 6 | 28 | 22 | 4.7(4.2) | 136.0(82.5) | 105.6(59.5) | 3.7(2.0) |
| | 2007-2008 | 4 | 35 | 28 | 8.8(*) | 106.8(62.3) | 84.8(57.7) | 7.0(*) |
| | 2008-2009 | 3 | * | * | * | * | * | * |
| | 2009-2010 | 3 | * | * | * | * | * | * |
| | 2010-2011 | 3 | * | * | * | * | * | * |
| | 2011-2012 | 3 | * | * | * | * | * | * |
| | 2012-2013 | 3 | * | * | * | * | * | * |
| PIK | 1998 | 58 | 91 | - | 1.6(0.7) | - | 11.3(8.7) | - |
| | 1998 | 131 | 259 | - | 2.0(0.5) | - | 11.4(7.1) | - |
| | 2009-2010 | 7 | 16 | 15 | 2.3(1.5) | 30.7(22.3) | 28.1(16.5) | 2.1(1.5) |
| SMB | 2010-2011 | 11 | 40 | 38 | 3.6(1.5) | 33.3(17.7) | 31.3(17.8) | 3.5(1.4) |
| | 2011-2012 | 18 | 58 | 57 | 3.2(1.4) | 33.0(21.0) | 31.9(17.0) | 3.2(1.4) |
| | 2012-2013 | 17 | 45 | 45 | 2.6(1.4) | 35.9(18.1) | 35.4(17.7) | 2.6(1.4) |

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Table 4.41: Continued

| | Season | Vessels | Deliveries total | Trips total | Deliveries per vessel mean(sd) | Landings per trip, mean(sd) (thousand lbs) | Landings per delivery, mean(sd) (thousand lbs) | Trips per vessel means(sd) |
|---|---|---|---|---|---|---|---|---|
| WAG | 1998-1999 | 3 | * | - | * | - | * | - |
| | 1999-2000 | 15 | 113 | - | 7.5(10.4) | - | 24.1(15.3) | - |
| | 2000-2001 | 12 | 97 | - | 8.1(9.4) | - | 28.6(17.4) | - |
| | 2001-2002 | 9 | 90 | - | 10.0(8.2) | - | 29.9(16.2) | - |
| | 2002-2003 | 6 | 72 | - | 12.0(9.2) | - | 36.2(20.7) | - |
| | 2003-2004 | 6 | 60 | - | 10.0(6.8) | - | 44.0(29.5) | - |
| | 2004-2005 | 6 | 51 | - | 8.5(5.9) | - | 51.8(36.2) | - |
| | 2005-2006 | 3 | * | - | * | - | * | - |
| | 2006-2007 | 4 | 33 | 29 | 8.3(*) | 77.7(32.0) | 67.6(29.6) | 7.3(*) |
| | 2007-2008 | 3 | * | * | * | * | * | * |
| | 2008-2009 | 3 | * | * | * | * | * | * |
| | 2009-2010 | 3 | * | * | * | * | * | * |
| | 2010-2011 | 3 | * | * | * | * | * | * |
| | 2011-2012 | 3 | * | * | * | * | * | * |
| | 2012-2013 | 4 | 32 | 27 | 8.0(*) | 109.4(40.2) | 90.5(40.1) | 6.8(*) |
| WAI | 1998-1999 | 1 | * | - | * | - | * | - |
| | 2002-2003 | 3 | * | - | * | - | * | - |
| | 2003-2004 | 30 | 30 | - | 1.0(0.0) | - | 15.8(9.7) | - |

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

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files and IFQ accounting database, and eLandings

Table 4.42: Opening and Closing Dates, Season Length, and Days Fished by Season, CR Program Fisheries

| | Year | Season length, days | Earliest landing | Latest landing | Days fished | Percent of season fished | Season dates |
|---|---|---|---|---|---|---|---|
| BBR | 1998 | 6 | | | - | - | 1-Nov - 6-Nov |
| | 1999 | 6 | | | - | - | 15-Oct - 20-Oct |
| | 2000 | 5 | | | - | - | 16-Oct - 20-Oct |
| | 2001 | 4 | | | - | - | 15-Oct - 18-Oct |
| | 2002 | 4 | | | - | - | 15-Oct - 18-Oct |
| | 2003 | 6 | | | - | - | 15-Oct - 20-Oct |
| | 2004 | 4 | | | - | - | 15-Oct - 18-Oct |
| | 05-06 | 93 | 20-Oct | 16-Jan | 89 | 96% | 15-Oct - 15-Jan |
| | 06-07 | 93 | 19-Oct | 28-Nov | 41 | 44% | 15-Oct - 15-Jan |
| | 07-08 | 93 | 18-Oct | 15-Jan | 90 | 97% | 15-Oct - 15-Jan |
| | 08-09 | 93 | 18-Oct | 17-Jan | 92 | 99% | 15-Oct - 15-Jan |
| | 09-10 | 93 | 17-Oct | 16-Jan | 92 | 99% | 15-Oct - 15-Jan |
| | 10-11 | 93 | 16-Oct | 10-Dec | 56 | 60% | 15-Oct - 15-Jan |
| | 11-12 | 93 | 18-Oct | 18-Nov | 32 | 34% | 15-Oct - 15-Jan |
| | 12-13 | 93 | 18-Oct | 16-Dec | 60 | 65% | 15-Oct - 15-Jan |
| | 13-14 | 93 | 21-Oct | 15-Nov | 26 | 28% | 15-Oct - 15-Jan |

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Table 4.42: Continued

| | Year | Season length, days | Earliest landing | Latest landing | Days fished | Percent of season fished | Season dates |
|---|---|---|---|---|---|---|---|
| | 1998 | 65 | | | - | - | 15-Jan - 20-Mar |
| | 1999 | 67 | | | - | - | 15-Jan - 22-Mar |
| | 2000 | 8 | | | - | - | 1-Apr - 8-Apr |
| | 2001 | 31 | | | - | - | 15-Jan - 14-Feb |
| | 2002 | 25 | | | - | - | 15-Jan - 8-Feb |
| | 2003 | 11 | | | - | - | 15-Jan - 25-Jan |
| | 2004 | 9 | | | - | - | 15-Jan - 23-Jan |
| | 2005 | 6 | | | - | - | 15-Jan - 20-Jan |
| BSS | 05-06 | 229 | 27-Oct | 27-May | 213 | 93% | 15-Oct - 31-May |
| | 06-07 | 229 | 7-Nov | 5-May | 180 | 79% | 15-Oct - 31-May |
| | 07-08 | 230 | 18-Nov | 10-May | 175 | 76% | 15-Oct - 31-May |
| | 08-09 | 229 | 30-Nov | 16-May | 168 | 73% | 15-Oct - 31-May |
| | 09-10 | 229 | 11-Jan | 6-May | 116 | 51% | 15-Oct - 31-May |
| | 10-11 | 229 | 18-Nov | 9-Apr | 143 | 62% | 15-Oct - 31-May |
| | 11-12 | 245 | 2-Nov | 19-Jun | 231 | 94% | 15-Oct - 15-Jun |
| | 12-13 | 229 | 24-Nov | 5-Jun | 194 | 85% | 15-Oct - 31-May |
| | 13-14 | 229 | 20-Oct | 29-Apr | 192 | 84% | 15-Oct - 31-May |

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Table 4.42: Continued

| | Year | Season length, days | Earliest landing | Latest landing | Days fished | Percent of season fished | Season dates |
|---|---|---|---|---|---|---|---|
| BST | 05-06 | 168 | 27-Oct | 2-Apr | 158 | 94% | 15-Oct - 31-Mar |
| BTE | 06-07 | 168 | 23-Oct | 27-Mar | 157 | 93% | 15-Oct - 31-Mar |
| | 07-08 | 169 | 20-Oct | 2-Apr | 166 | 98% | 15-Oct - 31-Mar |
| | 08-09 | 168 | 19-Oct | 11-Mar | 144 | 86% | 15-Oct - 31-Mar |
| | 09-10 | 168 | 17-Oct | 1-Mar | 136 | 81% | 15-Oct - 31-Mar |
| | 13-14 | 168 | 29-Oct | 29-Mar | 152 | 90% | 15-Oct - 31-Mar |
| BTW | 06-07 | 168 | 4-Nov | 26-Mar | 144 | 86% | 15-Oct - 31-Mar |
| | 07-08 | 169 | 16-Nov | 31-Mar | 137 | 81% | 15-Oct - 31-Mar |
| | 08-09 | 168 | 13-Jan | 25-Mar | 72 | 43% | 15-Oct - 31-Mar |
| | 13-14 | 229 | 7-Nov | 8-Apr | 153 | 67% | 15-Oct - 31-May |
| EAG | 1998 | 68 | | | - | - | 1-Sep - 7-Nov |
| | 1999 | 55 | | | - | - | 1-Sep - 25-Oct |
| | 2000 | 41 | | | - | - | 15-Aug - 24-Sep |
| | 2001 | 27 | | | - | - | 15-Aug - 10-Sep |
| | 2002 | 24 | | | - | - | 15-Aug - 7-Sep |
| | 2003 | 25 | | | - | - | 15-Aug - 8-Sep |
| | 2004 | 15 | | | - | - | 15-Aug - 29-Aug |
| | 05-06 | 274 | 30-Aug | 28-Mar | 211 | 77% | 15-Aug - 15-May |
| | 06-07 | 274 | 31-Aug | 13-Jan | 136 | 50% | 15-Aug - 15-May |
| | 07-08 | 275 | 30-Aug | 9-Feb | 164 | 60% | 15-Aug - 15-May |
| | 08-09 | 274 | 7-Sep | 22-Dec | 107 | 39% | 15-Aug - 15-May |
| | 09-10 | 274 | 31-Aug | 10-Jan | 133 | 49% | 15-Aug - 15-May |
| | 10-11 | 274 | 22-Aug | 16-Dec | 117 | 43% | 15-Aug - 15-May |
| | 11-12 | 275 | 26-Aug | 24-Nov | 91 | 33% | 15-Aug - 15-May |
| | 12-13 | 274 | 25-Aug | 3-Dec | 101 | 37% | 15-Aug - 15-May |
| | 13-14 | 274 | 30-Aug | 26-Nov | 89 | 32% | 15-Aug - 15-May |

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Table 4.42: Continued

| | Year | Season length, days | Earliest landing | Latest landing | Days fished | Percent of season fished | Season dates |
|---|---|---|---|---|---|---|---|
| PIK | 1998 | 14 | | | - | - | 15-Sep - 28-Sep |
| SMB | 1998 | 12 | | | - | - | 15-Sep - 26-Sep |
| | 09-10 | 110 | 23-Oct | 7-Dec | 46 | 42% | 15-Oct - 1-Feb |
| | 10-11 | 110 | 23-Oct | 11-Dec | 50 | 45% | 15-Oct - 1-Feb |
| | 11-12 | 110 | 21-Oct | 15-Dec | 56 | 51% | 15-Oct - 1-Feb |
| | 12-13 | 110 | 23-Oct | 8-Dec | 47 | 43% | 15-Oct - 1-Feb |
| WAG | 98-99 | 365 | | | - | - | 1-Sep - 31-Aug |
| | 99-00 | 349 | | | - | - | 1-Sep - 14-Aug |
| | 00-01 | 270 | | | - | - | 1-Sep - 28-May |
| | 01-02 | 228 | | | - | - | 15-Aug - 30-Mar |
| | 02-03 | 206 | | | - | - | 15-Aug - 8-Mar |
| | 03-04 | 176 | | | - | - | 15-Aug - 6-Feb |
| | 05-06 | 274 | 6-Sep | 25-Mar | 201 | 73% | 15-Aug - 15-May |
| | 06-07 | 274 | 10-Sep | 6-May | 239 | 87% | 15-Aug - 15-May |
| | 07-08 | 275 | 14-Sep | 21-May | 251 | 91% | 15-Aug - 15-May |
| | 08-09 | 274 | 13-Sep | 12-May | 242 | 88% | 15-Aug - 15-May |
| | 09-10 | 274 | 5-Sep | 18-May | 256 | 93% | 15-Aug - 15-May |
| | 10-11 | 274 | 11-Sep | 18-Mar | 189 | 69% | 15-Aug - 15-May |
| | 11-12 | 275 | 6-Sep | 10-Apr | 218 | 79% | 15-Aug - 15-May |
| | 12-13 | 274 | 10-Sep | 5-May | 238 | 87% | 15-Aug - 15-May |
| | 13-14 | 274 | 9-Sep | 8-May | 242 | 88% | 15-Aug - 15-May |
| WAI | 98-99 | 273 | | | - | - | 1-Nov - 31-Jul |
| | 02-03 | 3 | | | - | - | 25-Oct - 27-Oct |
| | 03-04 | 372 | | | - | - | 24-Oct - 29-Oct |

**Notes:** 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.

**Source:** Season dates and season length from ADF. Earliest and latest landing dates in 2005/2006 and later seasons from NMFS AKRO RAM division IFQ accounting.

Table 4.43: Days Between First and Last Delivery by Season, CR Program Fisheries

| | Season | Vessels with one delivery | Vessels with multiple deliveries | Vessels with multiple deliveries, Median days | Vessels with multiple deliveries, Minimum days | Vessels with multiple deliveries, Maximum days | Days between first and last delivery, Mean(sd) |
|---|---|---|---|---|---|---|---|
| BBR | 2005-2006 | 21 | 69 | 17 | 1 | 70 | 19(15) |
| | 2006-2007 | 23 | 59 | 9 | 1 | 26 | 10(6) |
| | 2007-2008 | 7 | 68 | 15 | 1 | 51 | 18(12) |
| | 2008-2009 | 10 | 69 | 16 | 4 | 57 | 22(14) |
| | 2009-2010 | 8 | 63 | 18 | 2 | 67 | 18(12) |
| | 2010-2011 | 5 | 61 | 19 | 5 | 51 | 21(10) |
| | 2011-2012 | 23 | 40 | 6 | 1 | 21 | 7(5) |
| | 2012-2013 | 29 | 35 | 5 | 1 | 21 | 6(4) |
| | 2013-2014 | 28 | 35 | 7 | 1 | 16 | 7(4) |
| BSS | 2005-2006 | 3 | 75 | 20 | 1 | 148 | 32(30) |
| | 2006-2007 | 9 | 60 | 26 | 5 | 156 | 33(26) |
| | 2007-2008 | 0 | 78 | 36 | 7 | 116 | 41(25) |
| | 2008-2009 | 0 | 77 | 38 | 5 | 117 | 38(22) |
| | 2009-2010 | 2 | 67 | 27 | 9 | 107 | 31(20) |
| | 2010-2011 | 2 | 67 | 29 | 7 | 102 | 34(19) |
| | 2011-2012 | 0 | 72 | 116 | 12 | 201 | 105(45) |
| | 2012-2013 | 0 | 70 | 47 | 7 | 151 | 56(34) |
| | 2013-2014 | 2 | 68 | 49 | 7 | 134 | 52(29) |
| BST | 2005-2006 | 15 | 18 | 19 | 1 | 148 | 30(34) |
| | 2006-2007 | 14 | 25 | 30 | 1 | 145 | 49(48) |
| | 2007-2008 | 4 | 23 | 86 | 4 | 161 | 73(56) |
| | 2008-2009 | 6 | 14 | 40 | 3 | 146 | 56(50) |
| | 2009-2010 | 5 | 8 | 15 | 2 | 105 | 24(34) |
| | 2013-2014 | 6 | 19 | 127 | 6 | 152 | 104(49) |
| EAG | 2005-2006 | 0 | 7 | 47 | 23 | 182 | 72(66) |
| | 2006-2007 | 0 | 6 | 37 | 17 | 86 | 41(25) |
| | 2007-2008 | 1 | 4 | 77 | 47 | 105 | 77(27) |
| | 2008-2009 | 0 | 3 | 75 | 31 | 105 | 70(37) |
| | 2009-2010 | 0 | 3 | 91 | 33 | 132 | 85(50) |
| | 2010-2011 | 0 | 3 | 76 | 38 | 116 | 77(39) |
| | 2011-2012 | 0 | 3 | 69 | 31 | 90 | 63(30) |
| | 2012-2013 | 0 | 3 | 89 | 30 | 92 | 70(35) |
| | 2013-2014 | 0 | 3 | 79 | 46 | 80 | 68(19) |
| SMB | 2009-2010 | 3 | 4 | 24 | 5 | 45 | 24(16) |
| | 2010-2011 | 0 | 11 | 24 | 6 | 47 | 25(17) |
| | 2011-2012 | 1 | 17 | 23 | 6 | 50 | 27(15) |
| | 2012-2013 | 5 | 12 | 20 | 6 | 44 | 23(13) |

Continued on next page.

Table 4.43: Continued

| | Season | Vessels with one delivery | Vessels with multiple deliveries | Vessels with multiple deliveries, Median days | Vessels with multiple deliveries, Minimum days | Vessels with multiple deliveries, Maximum days | Days between first and last delivery, Mean(sd) |
|---|---|---|---|---|---|---|---|
| WAG | 2005-2006 | 0 | 3 | 176 | 175 | 181 | 177(3) |
| | 2006-2007 | 1 | 4 | 113 | 22 | 241 | 122(94) |
| | 2007-2008 | 0 | 3 | 153 | 26 | 250 | 143(112) |
| | 2008-2009 | 2 | 2 | 196 | 153 | 238 | 196(60) |
| | 2009-2010 | 0 | 3 | 136 | 18 | 232 | 129(107) |
| | 2010-2011 | 0 | 3 | 134 | 44 | 186 | 121(72) |
| | 2011-2012 | 0 | 3 | 140 | 49 | 164 | 118(61) |
| | 2012-2013 | 0 | 4 | 67 | 46 | 168 | 87(57) |
| | 2013-2014 | 0 | 3 | 113 | 87 | 206 | 135(63) |

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

**Source:** NMFS AKRO RAM division Quota Share and Processor Quota Share holder files and IFQ accounting database, and eLandings.

Table 4.44: BBR Fishery Harvest by Week Of Season

| | 2009-2010 | | 2010-2011 | | 2011-2012 | | 2012-2013 | | 2013-2014 | |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 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) | 1 | 0.01(0.01,0.00) |
| 2: 22-Oct | 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) | 29 | 0.36(0.33,0.26) |
| 3: 29-Oct | 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) | 43 | 0.83(0.84,0.75) |
| 4: 05-Nov | 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) | 22 | 0.98(0.97,0.97) |
| 5: 12-Nov | 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) | 4 | 1.00(1.00,1.00) |
| 6: 19-Nov | 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) | 0 | 1.00(1.00,1.00) |
| 7: 26-Nov | 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) | 0 | 1.00(1.00,1.00) |
| 8: 03-Dec | 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) | 0 | 1.00(1.00,1.00) |
| 9: 10-Dec | 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) | 0 | 1.00(1.00,1.00) |
| 10: 17-Dec | 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) | 0 | 1.00(1.00,1.00) |
| 11: 24-Dec | 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) | 0 | 1.00(1.00,1.00) |
| 12: 31-Dec | 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) | 0 | 1.00(1.00,1.00) |
| 13: 07-Jan | 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) | 0 | 1.00(1.00,1.00) |
| 14: 14-Jan | 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) | 0 | 1.00(1.00,1.00) |
| Postseason: 16-Jan | 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) | 0 | 1.00(1.00,1.00) |

**Notes:** BBR fishery season open by regulation from October 15 to January 15. Cumulative proportion of pounds landed indicates total 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.

**Source:** NMFS RAM IFQ accounting database via eLandings.

Table 4.45: BSS Fishery Harvest by Week of Season

| Week | 2009-2010 Vessels | 2009-2010 Cumulative proportion of pounds landed | 2010-2011 Vessels | 2010-2011 Cumulative proportion of pounds landed | 2011-2012 Vessels | 2011-2012 Cumulative proportion of pounds landed | 2012-2013 Vessels | 2012-2013 Cumulative proportion of pounds landed |
|---|---|---|---|---|---|---|---|---|
| 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) |
| 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) |
| 3: 29-Oct | 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) |
| 5: 12-Nov | 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) | 1 | 0.00(0.00,0.00) | 1 | 0.00(0.00,0.00) |
| 7: 26-Nov | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 0.73(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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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) | 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) | 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) | 42 | 1.00(1.00,1.00) | 0 | 1.00(1.00,1.00) |

**Notes:** BSS fishery is open by regulation from October 15 to May 31. Cumulative proportion of pounds landed indicates total of a) combined IFQ and CDQ sold pounds landed, 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 Bering Sea Snow crab fishery season extended past regular season closing date (May 31) due to sea ice coverage.

**Source:** NMFS RAM IFQ accounting database via eLandings.

Table 4.46: Fishing Effort (Pot Lifts, CPUE, and RPUE) by Season, CR Program Fisheries

| | | Vessels | CPUE (lb legal crab) | | Pot lifts | | RPUE ($) | |
|---|---|---|---|---|---|---|---|---|
| | Season | | Mean(sd) CPUE per vessel, 1,000 | Weighted mean | Mean(sd) per vessel, 1,000 | Total | Mean(sd) RPUE per vessel, 1,000 | Weighted mean |
| | 1998 | 274 | 15.3(6.7) | 15.2 | 0.5(0.2) | 144.9 | $437(192) | $433 |
| | 1999 | 257 | 12.6(6.1) | 12.5 | 0.6(0.2) | 150.0 | $752(372) | $750 |
| | 2000 | 244 | 11.9(5.2) | 12.0 | 0.4(0.1) | 103.4 | $549(241) | $556 |
| | 2001 | 230 | 19.1(10.0) | 19.2 | 0.3(0.1) | 66.2 | $925(492) | $928 |
| | 2002 | 242 | 20.6(7.1) | 20.4 | 0.3(0.1) | 72.2 | $1,277(434) | $1,264 |
| | 2003 | 250 | 18.2(9.5) | 18.4 | 0.5(0.2) | 134.1 | $875(456) | $892 |
| | 2004 | 251 | 22.9(9.0) | 22.9 | 0.4(0.1) | 96.3 | $1,054(403) | $1,058 |
| BBR | 05-06 | 89 | 28.0(10.5) | 23.7 | 1.3(1.0) | 114.6 | $1,100(416) | $936 |
| | 06-07 | 81 | 33.3(9.9) | 34.0 | 0.9(0.5) | 71.7 | $965(295) | $986 |
| | 07-08 | 74 | 27.9(7.2) | 27.5 | 1.5(0.9) | 113.1 | $962(253) | $949 |
| | 08-09 | 78 | 23.7(7.1) | 21.7 | 1.8(1.1) | 139.7 | $918(285) | $841 |
| | 09-10 | 70 | 22.3(5.9) | 21.2 | 1.7(0.8) | 118.4 | $759(201) | $724 |
| | 10-11 | 65 | 18.6(5.1) | 18.1 | 2.0(1.0) | 131.4 | $926(260) | $900 |
| | 11-12 | 62 | 27.6(7.3) | 28.2 | 0.7(0.3) | 45.1 | $1,895(501) | $1,931 |
| | 12-13 | 64 | 30.7(9.0) | 30.2 | 0.6(0.3) | 38.0 | $1,732(521) | $1,711 |
| | 1999 | 241 | 155.4(42.0) | 158.3 | 3.9(1.5) | 945.4 | $307(78) | $312 |
| | 2000 | 231 | 138.5(59.9) | 136.2 | 0.8(0.3) | 181.5 | $514(229) | $502 |
| | 2001 | 207 | 91.6(48.0) | 95.6 | 0.9(0.5) | 191.0 | $300(144) | $313 |
| | 2002 | 191 | 76.2(35.2) | 75.6 | 1.7(0.8) | 325.6 | $212(98) | $210 |
| | 2003 | 190 | 151.6(63.0) | 146.9 | 0.8(0.4) | 153.7 | $518(205) | $500 |
| | 2004 | 189 | 156.0(60.3) | 149.6 | 0.7(0.4) | 123.4 | $593(222) | $568 |
| | 2005 | 168 | 246.2(87.9) | 242.8 | 0.4(0.1) | 72.9 | $825(310) | $812 |
| BSS | 05-06 | 78 | 211.4(71.9) | 202.6 | 1.5(1.1) | 120.0 | $459(148) | $443 |
| | 06-07 | 69 | 349.1(74.7) | 343.0 | 1.2(0.8) | 85.3 | $841(194) | $815 |
| | 07-08 | 78 | 354.7(74.1) | 352.7 | 1.8(1.0) | 141.4 | $880(181) | $876 |
| | 08-09 | 77 | 284.6(70.5) | 279.1 | 2.1(1.3) | 163.3 | $600(153) | $589 |
| | 09-10 | 69 | 255.8(55.6) | 255.0 | 2.0(1.1) | 136.8 | $497(102) | $495 |
| | 10-11 | 68 | 255.3(51.4) | 254.9 | 2.2(1.1) | 147.2 | $962(191) | $958 |
| | 11-12 | 72 | 224.7(63.4) | 222.7 | 3.7(1.8) | 270.0 | $733(205) | $730 |
| | 12-13 | 70 | 219.2(64.1) | 210.0 | 3.2(1.6) | 224.4 | $701(197) | $673 |

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Table 4.46: Continued

| | Season | Vessels | CPUE (lb legal crab) | | Pot lifts | | RPUE ($) | |
|---|---|---|---|---|---|---|---|---|
| | | | Mean(sd) CPUE per vessel, 1,000 | Weighted mean | Mean(sd) per vessel, 1,000 | Total | Mean(sd) RPUE per vessel, 1,000 | Weighted mean |
| BST | 05-06 | 42 | 20.6(18.8) | 15.7 | 0.7(0.5) | 27.8 | $82(76) | $63 |
| | 06-07 | 52 | 16.8(15.3) | 17.5 | 1.0(0.8) | 52.2 | $76(69) | $79 |
| | 07-08 | 40 | 18.6(10.1) | 17.7 | 1.3(1.3) | 52.0 | $83(45) | $80 |
| | 08-09 | 49 | 14.8(15.7) | 13.3 | 1.3(1.3) | 61.9 | $65(70) | $59 |
| | 09-10 | 41 | 38.8(30.9) | 11.8 | 1.0(0.7) | 40.5 | $201(159) | $62 |
| | 11-12 | 56 | 0.0(0.0) | 0.0 | 1.1(0.7) | 64.2 | $0(0) | $0 |
| | 12-13 | 59 | 0.0(0.0) | 0.0 | 1.4(0.9) | 81.1 | $0(0) | $0 |
| EAG | 1998 | 14 | 8.1(4.3) | 8.7 | 6.0(2.3) | 83.4 | $110(55) | $117 |
| | 1999 | 15 | 9.0(4.6) | 8.8 | 5.3(2.2) | 79.0 | $188(99) | $183 |
| | 2000 | 15 | 9.7(4.4) | 9.7 | 4.8(1.5) | 71.5 | $224(107) | $225 |
| | 2001 | 19 | 11.2(5.6) | 11.5 | 3.3(1.1) | 62.6 | $248(118) | $252 |
| | 2002 | 19 | 12.2(4.9) | 12.1 | 2.7(0.7) | 52.0 | $287(113) | $287 |
| | 2003 | 18 | 10.6(2.9) | 10.6 | 3.3(0.7) | 58.9 | $264(73) | $269 |
| | 2004 | 19 | 18.6(7.1) | 18.0 | 1.8(0.4) | 34.8 | $387(138) | $375 |
| | 05-06 | 7 | 25.3(7.9) | 25.2 | 3.5(1.9) | 24.6 | $393(148) | $414 |
| | 06-07 | 6 | 23.7(5.4) | 24.5 | 4.4(3.5) | 26.2 | $243(63) | $271 |
| | 07-08 | 4 | 29.1(*) | 27.8 | 5.7(*) | 22.7 | $332(*) | $359 |
| | 08-09 | 3 | * | * | * | * | * | * |
| | 09-10 | 3 | * | * | * | * | * | * |
| | 10-11 | 3 | * | * | * | * | * | * |
| | 11-12 | 3 | * | * | * | * | * | * |
| | 12-13 | 3 | * | * | * | * | * | * |

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Table 4.46: Continued

| | Season | Vessels | CPUE (lb legal crab) | | Pot lifts | | RPUE ($) | |
|---|---|---|---|---|---|---|---|---|
| | | | Mean(sd) CPUE per vessel, 1,000 | Weighted mean | Mean(sd) per vessel, 1,000 | Total | Mean(sd) RPUE per vessel, 1,000 | Weighted mean |
| PIK | 1998 | 58 | 3.0(1.7) | 3.0 | 0.8(0.3) | 46.0 | $85(47) | $83 |
| SMB | 1998 | 132 | 7.1(2.0) | 6.9 | 0.7(0.3) | 91.7 | $103(28) | $100 |
| | 09-10 | 7 | 9.3(1.4) | 9.6 | 1.5(1.0) | 10.6 | $106(16) | $111 |
| | 10-11 | 11 | 9.7(2.0) | 10.1 | 2.7(1.2) | 29.3 | $222(45) | $232 |
| | 11-12 | 18 | 8.5(2.1) | 8.9 | 2.7(1.1) | 48.6 | $179(44) | $185 |
| | 12-13 | 17 | 9.8(2.6) | 10.1 | 2.2(1.0) | 37.0 | $191(51) | $194 |
| WAG | 98-99 | 3 | * | * | * | * | * | * |
| | 99-00 | 15 | 4.1(2.7) | 6.1 | 7.2(8.0) | 108.7 | $85(53) | $123 |
| | 00-01 | 12 | 4.7(3.3) | 6.8 | 8.3(6.9) | 99.5 | $98(64) | $139 |
| | 01-02 | 9 | 5.8(1.7) | 6.4 | 11.7(9.4) | 105.5 | $120(31) | $130 |
| | 02-03 | 6 | 6.4(3.4) | 8.3 | 13.2(10.5) | 79.0 | $136(67) | $176 |
| | 03-04 | 6 | 8.5(3.3) | 10.0 | 11.0(7.8) | 66.2 | $179(68) | $208 |
| | 04-05 | 6 | 9.3(4.4) | 11.9 | 9.5(7.1) | 56.8 | $167(76) | $211 |
| | 05-06 | 3 | * | * | * | * | * | * |
| | 06-07 | 4 | 18.3(*) | 19.4 | 6.7(*) | 26.7 | $157(*) | $160 |
| | 07-08 | 3 | * | * | * | * | * | * |
| | 08-09 | 3 | * | * | * | * | * | * |
| | 09-10 | 3 | * | * | * | * | * | * |
| | 10-11 | 3 | * | * | * | * | * | * |
| | 11-12 | 3 | * | * | * | * | * | * |
| | 12-13 | 4 | 20.8(*) | 20.2 | 8.2(*) | 32.7 | $352(*) | $334 |
| WAI | 98-99 | 1 | * | * | * | * | * | * |
| | 02-03 | 3 | * | * | * | * | * | * |
| | 03-04 | 30 | 10.2(5.4) | 10.3 | 0.2(0.1) | 5.8 | $633(340) | $642 |

**Notes:** CPUE = number of legal crab per potlift; RPUE = ex-vessel value of commercially sold crab per potlift. Dollars are inflation-adjusted to 2013 equivalent value using the Producer Price Index for unprocessed and packaged fish. Includes catcher/processor harvest and effort.

**Source:** ADF&G fish ticket data, and eLandings

Table 4.47: Snow and King Crab Exports and Imports

| | King crab | | | | | | Snow crab | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Export (1,000t) | Export value ($million) | Import (1,000t) | Import value ($million) | Net export (1,000t) | Net export value ($million) | Export (1,000t) | Export value ($million) | Import (1,000t) | Import value ($million) | Net export (1,000t) | Net export value ($million) |
| 1991 | 3.85 | $106.72 | 0.30 | $7.94 | 3.55 | $98.78 | 32.20 | $305.22 | 0.74 | $10.57 | 31.46 | $294.65 |
| 1992 | 3.70 | $113.69 | 2.19 | $42.29 | 1.51 | $71.40 | 61.61 | $575.41 | 0.88 | $8.95 | 60.73 | $566.46 |
| 1993 | 5.96 | $163.75 | 1.12 | $24.48 | 4.84 | $139.27 | 45.56 | $510.54 | 1.33 | $16.25 | 44.23 | $494.29 |
| 1994 | 3.62 | $88.18 | 2.60 | $62.85 | 1.02 | $25.33 | 31.12 | $470.70 | 2.86 | $39.54 | 28.26 | $431.16 |
| 1995 | 2.85 | $60.66 | 4.01 | $78.62 | -1.16 | -17.96 | 12.26 | $215.33 | 2.26 | $32.28 | 10.00 | $183.05 |
| 1996 | 4.46 | $101.44 | 6.27 | $115.01 | -1.81 | -13.57 | 9.53 | $125.34 | 3.38 | $39.63 | 6.15 | $85.71 |
| 1997 | 2.80 | $47.14 | 9.77 | $184.08 | -6.97 | -136.94 | 10.17 | $89.63 | 6.90 | $60.25 | 3.27 | $29.38 |
| 1998 | 3.10 | $36.95 | 11.82 | $197.55 | -8.72 | -160.60 | 11.99 | $87.01 | 12.26 | $101.34 | -0.27 | -14.33 |
| 1999 | 2.73 | $39.82 | 11.49 | $211.75 | -8.76 | -171.93 | 15.62 | $144.08 | 24.68 | $258.99 | -9.06 | -114.91 |
| 2000 | 3.05 | $68.09 | 10.05 | $217.51 | -7.00 | -149.42 | 4.75 | $62.00 | 28.61 | $360.15 | -23.86 | -298.15 |
| 2001 | 1.83 | $51.47 | 9.29 | $215.11 | -7.46 | -163.64 | 3.09 | $38.89 | 42.18 | $454.00 | -39.09 | -415.11 |
| 2002 | 2.28 | $51.92 | 10.42 | $288.29 | -8.14 | -236.37 | 3.36 | $41.03 | 44.41 | $485.14 | -41.05 | -444.11 |
| 2003 | 3.94 | $76.29 | 9.96 | $245.88 | -6.02 | -169.59 | 3.92 | $57.41 | 51.60 | $662.06 | -47.68 | -604.65 |
| 2004 | 3.25 | $55.85 | 10.55 | $214.80 | -7.30 | -158.95 | 4.09 | $56.84 | 49.10 | $604.08 | -45.01 | -547.24 |
| 2005 | 3.90 | $71.56 | 18.39 | $332.16 | -14.49 | -260.60 | 3.42 | $39.80 | 45.97 | $431.71 | -42.55 | -391.91 |
| 2006 | 4.32 | $71.86 | 28.07 | $416.70 | -23.75 | -344.84 | 4.79 | $50.53 | 46.28 | $377.73 | -41.49 | -327.20 |
| 2007 | 3.31 | $59.50 | 30.35 | $444.73 | -27.04 | -385.23 | 2.12 | $18.49 | 47.98 | $491.86 | -45.86 | -473.37 |
| 2008 | 4.33 | $80.13 | 15.92 | $306.53 | -11.59 | -226.40 | 5.55 | $51.59 | 42.00 | $427.74 | -36.45 | -376.15 |
| 2009 | 3.36 | $78.22 | 15.83 | $288.56 | -12.47 | -210.34 | 5.48 | $53.13 | 51.65 | $450.72 | -46.17 | -397.59 |
| 2010 | 3.62 | $88.58 | 10.06 | $194.40 | -6.44 | -105.82 | 4.96 | $45.12 | 43.57 | $407.79 | -38.61 | -362.67 |
| 2011 | 2.66 | $65.50 | 8.50 | $176.50 | -5.84 | -111.00 | 8.48 | $93.63 | 41.04 | $519.11 | -32.56 | -425.48 |
| 2012 | 1.98 | $52.23 | 9.41 | $169.87 | -7.43 | -117.64 | 12.72 | $132.83 | 41.68 | $448.45 | -28.96 | -315.62 |
| 2013 | 1.78 | $43.54 | 10.69 | $193.36 | -8.91 | -149.82 | 8.22 | $90.73 | 52.05 | $550.83 | -43.83 | -460.10 |

**Notes:** 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).

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

Table 4.48: Producer Price Index - Unprocessed and Packaged Fish

| Year | Index | 2013 Adjustment Factor |
|---|---|---|
| 1991 | 149.5 | 1.99 |
| 1992 | 156.1 | 1.9 |
| 1993 | 156.5 | 1.9 |
| 1994 | 161.4 | 1.84 |
| 1995 | 170.8 | 1.74 |
| 1996 | 165.9 | 1.79 |
| 1997 | 178.1 | 1.67 |
| 1998 | 183.2 | 1.62 |
| 1999 | 190.9 | 1.56 |
| 2000 | 198.1 | 1.5 |
| 2001 | 190.8 | 1.56 |
| 2002 | 191.2 | 1.55 |
| 2003 | 195.3 | 1.52 |
| 2004 | 206.3 | 1.44 |
| 2005 | 222.6 | 1.34 |
| 2006 | 237.4 | 1.25 |
| 2007 | 242.8 | 1.22 |
| 2008 | 255.4 | 1.16 |
| 2009 | 250.9 | 1.18 |
| 2010 | 272.4 | 1.09 |
| 2011 | 287.6 | 1.03 |
| 2012 | 287.5 | 1.03 |
| 2013 | 297.3 | 1 |

**Source:** Bureau of Labor Statistics. Producer Price Index-Commodities, Series WPU0223 (Unprocessed and packaged fish), retrieved December 2014.

# 5. CATCH-SHARE PROGRAM ECONOMIC PERFORMANCE METRICS

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[a]. 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 (calculated as a measure of revenue concentration among the active vessels). Tables 5.1 through 5.9 present results for all metrics, with values reported in Table 5.1 aggregating results over all CR program fisheries, and Tables 5.2 through 5.9 providing results for individual crab fisheries through the 2013/14 crab season. 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 Tables 5.1 through

[a]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, 2014) 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.

5.9 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 include production or activity associated with the Community Development Program quota (CDQ) or Adak Community Allocation (ACA) components of the rationalized crab fisheries.

*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.

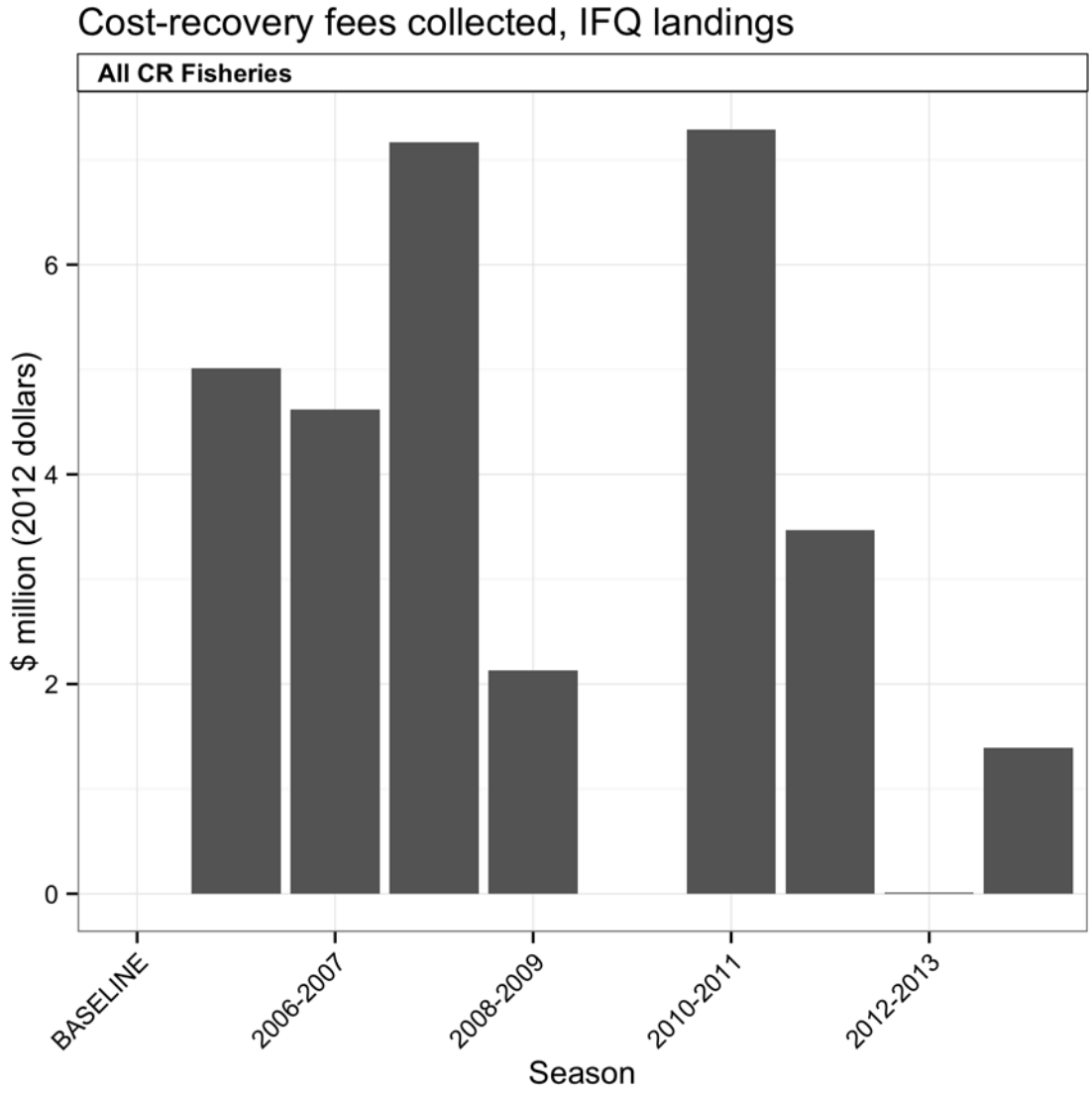
Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The Magnuson-Stevens 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 5.1). This makes it possible to have years in which no fees are collected, as was the case in 2009/10. In 2013/14, $1.4 million was collected for the cost recovery program, less than 1% 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.

Figure 5.1: Cost recovery fees (inflation-adjusted 2013 dollars) collected for the IFQ Crab portion of the BSAI Crab Rationalization Program




*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.

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 opened for the 2009/2010 through 2012/13 seasons before closing again in 2013/14. The Western and Eastern Bering Sea Tanner crab fisheries were closed to fishing since the beginning of the 2009/10 fishing season, but have been reopened since the 2013/14 season. In addition, the Bering Sea Tanner crab fishery was closed for all three seasons of the Baseline Period (Table **??**). 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.

**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 5.2). The quota was subsequently raised to 85 million pounds in 2007/08, declined over the next two seasons based upon stock assessments, to 65 million pounds in 2009/10. 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. Quota allocations increased over all fisheries for 2010/11 to 69 million pounds, with total landings of 68 million pounds. Total IFQ program allocations increased by 37% to 95 million pounds for 2011/2012 due primarily to a 64% increase in the Bering Sea snow crab allocation, with landings of 93 million pounds, the highest levels over the post rationalization period. Subsequently, allocations and catch have declined for the most recent two seasons to 65 million pounds for 2013/2014, with landings of 64 million pounds.

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 5.3).

Figure 5.2: IFQ Crab quota and landings in the BSAI Crab Rationalization Program

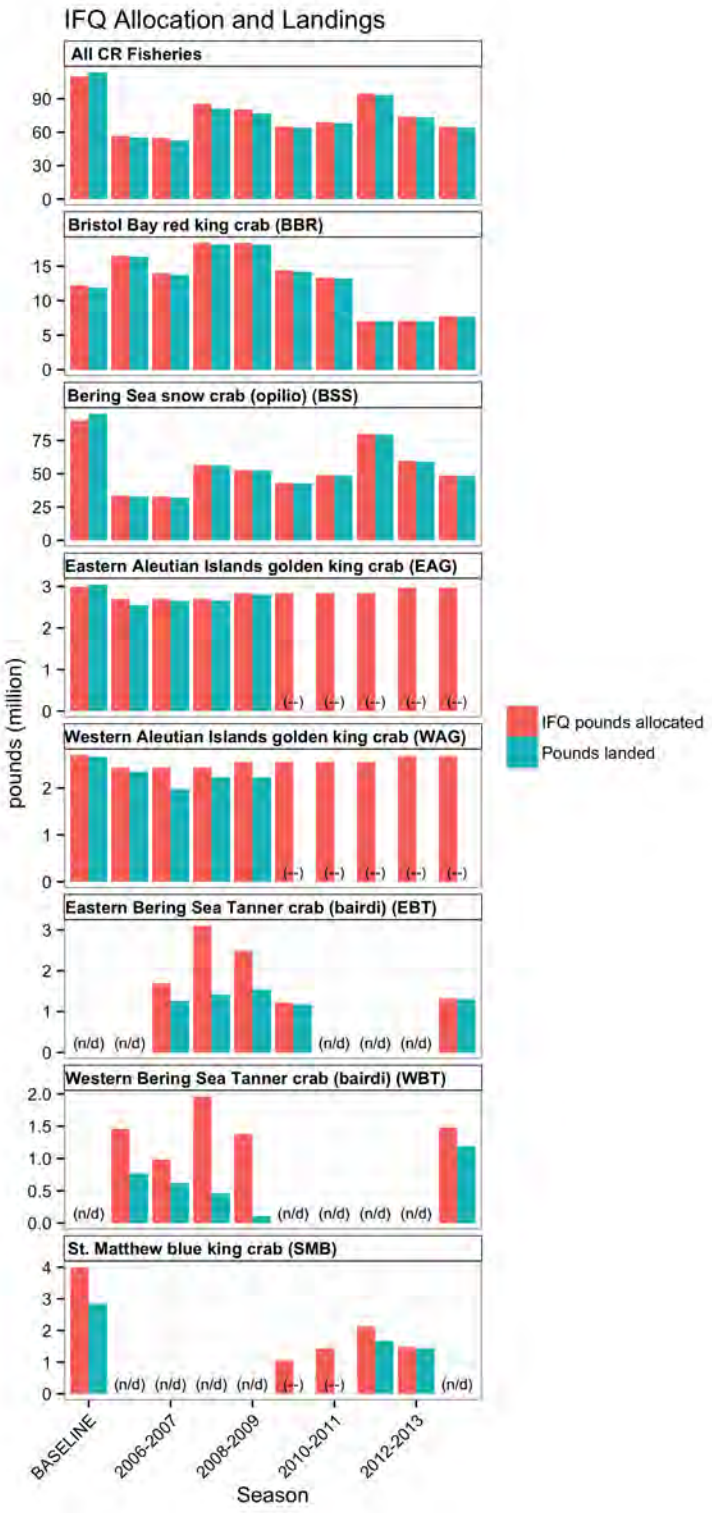
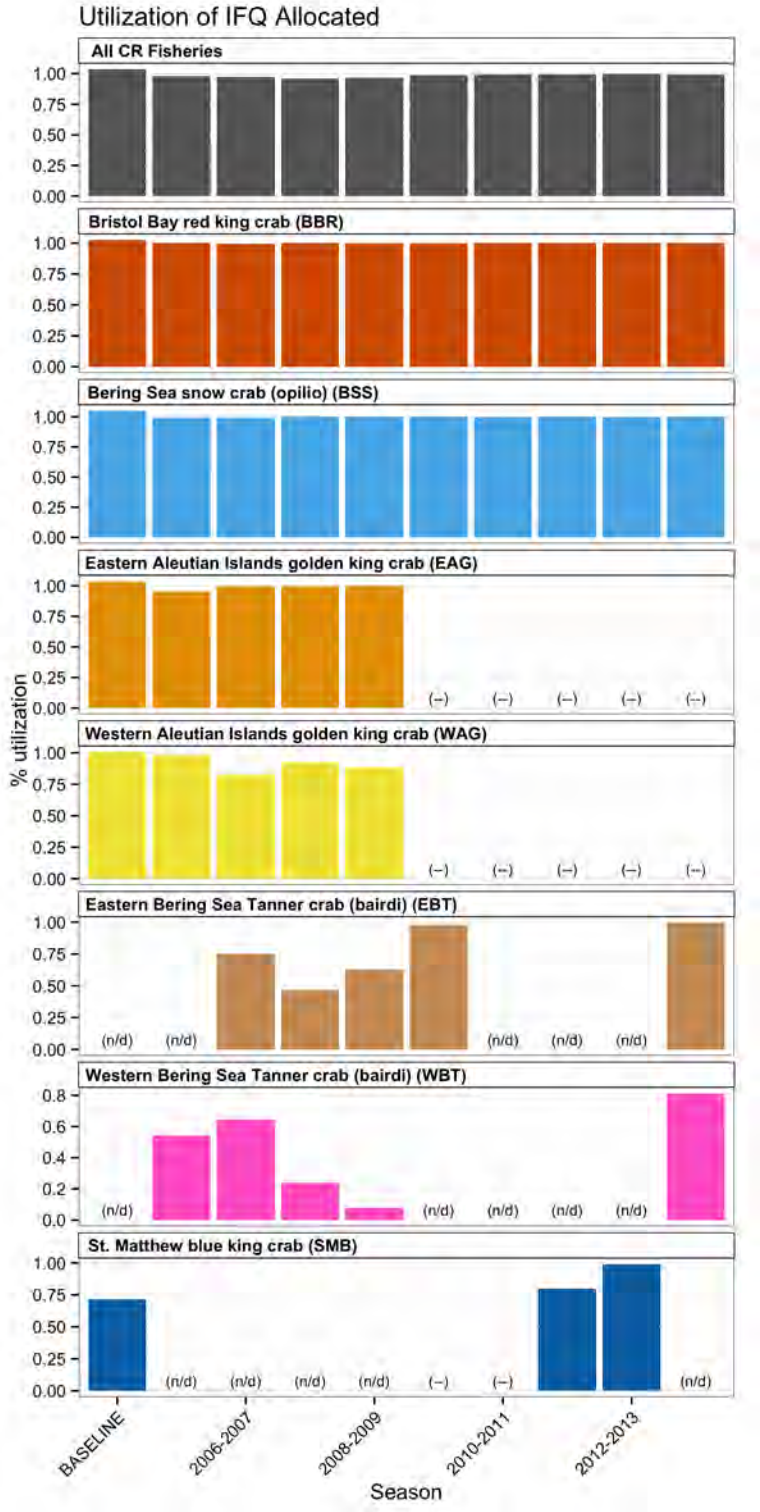


Figure 5.3: Utilization of available IFQ crab quota in the BSAI Crab Rationalization Program



**Effort** During the first year of the catch share program, 491 entities were eligible to hold quota share to fish in a crab fishery (Figure 5.4). 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, 502 entities in 2012/13, an increase of 7% from the low of 470, and 501 2013/14.

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 5.5). 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 2009/10 through 2011/12, increased to 81 the following season, before declining in 2013/14 to a post-baseline low of 75 vessels.

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 5.6). 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 and 481 in 2013/14, the lowest level since 2006/07.

Figure 5.4: Number of entities holding IFQ crab share in the BSAI Crab Rationalization Program

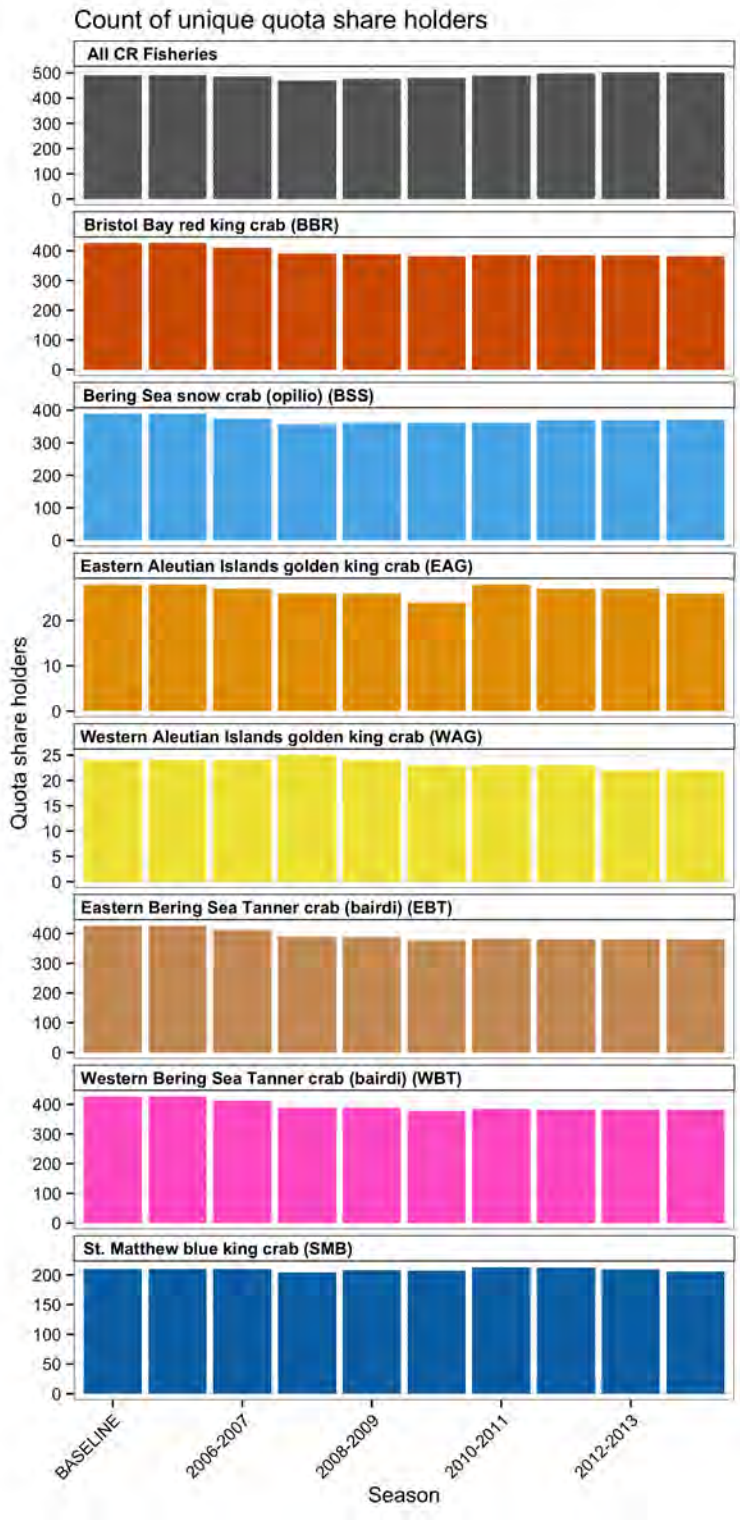


Figure 5.5: Active vessels fishing IFQ Crab quota in the BSAI Crab Rationalization Program

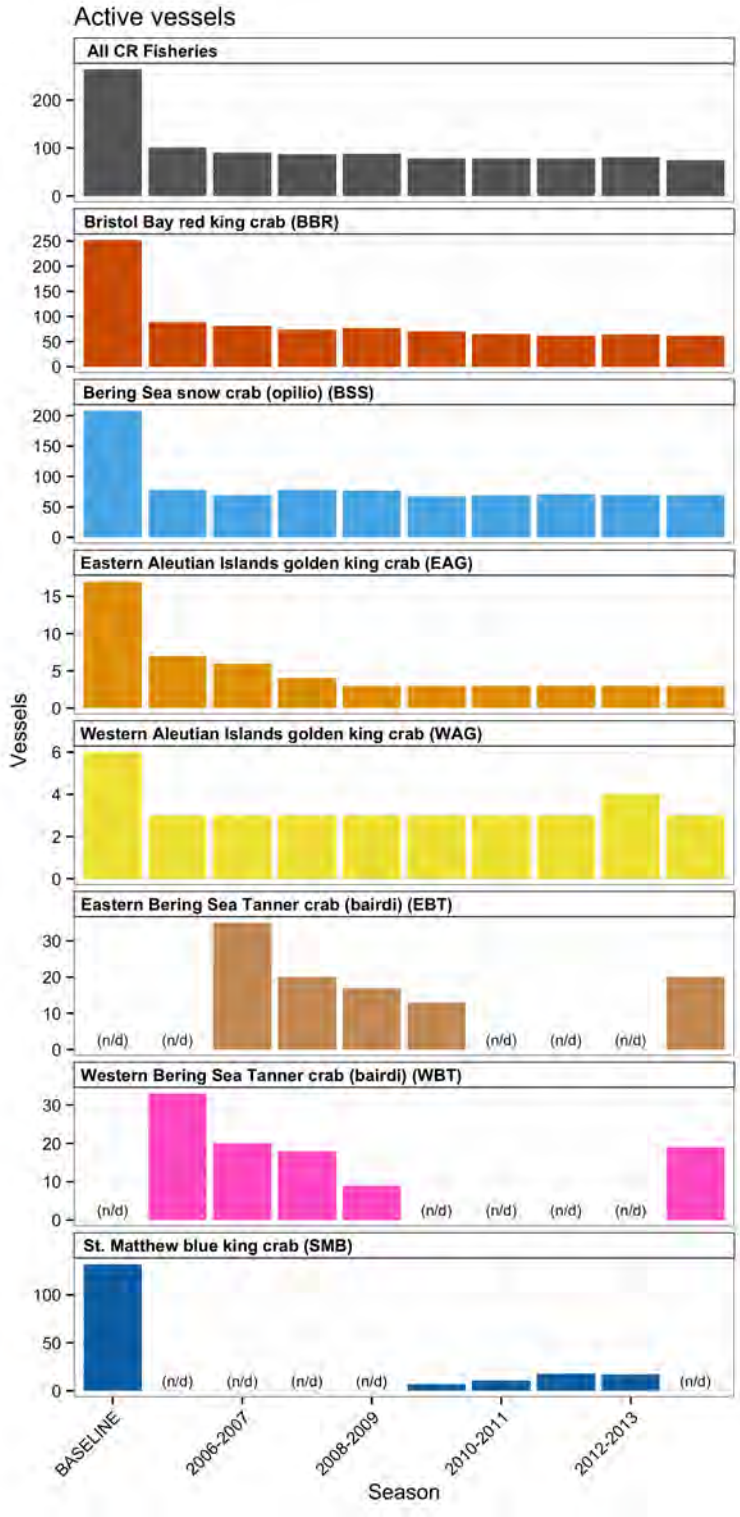
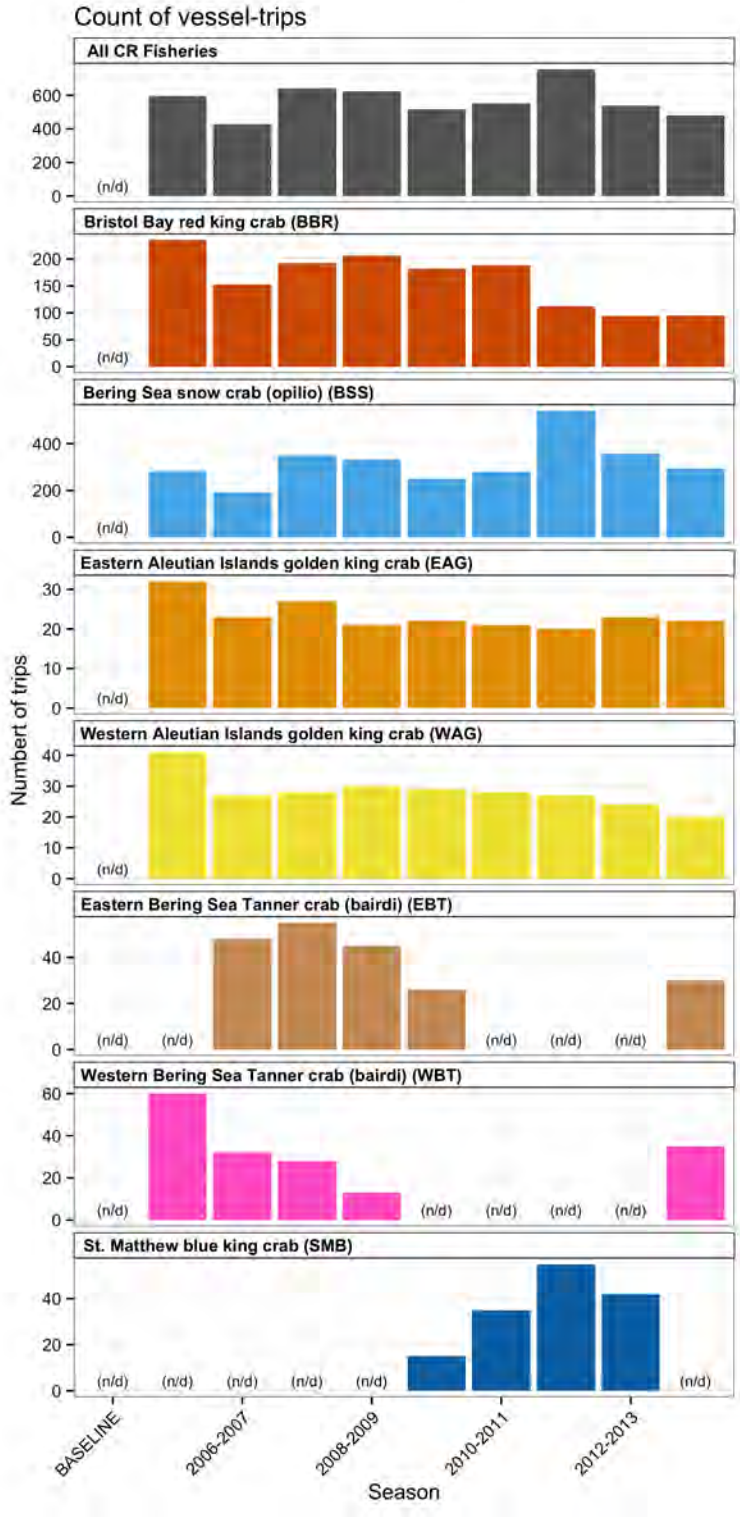


Figure 5.6: Number of trips harvesting IFQ Crab in the BSAI Crab Rationalization Program




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 Figure 5.7 and Tables 5.2 through 5.9. 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, less than the entire season length is typically used due to fishing and sea ice conditions, as well as economic incentives to limit operating time during the fishery, e.g., market forces, processor capacity, processor and harvester interests, 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 (Figure 5.8 and Table 5.1. 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 approximately 200 days in 2009/10 and 2010/11, the season length index dropped to 0.58 and 0.53 as the total catch allocations dropped during the 2009/10 and 2010/11 seasons, increased to 0.70 with the allocations increase in 2011/12, and subsequently declined to 0.62 in 2013/14.

Figure 5.7: Season lengths in IFQ Crab Fisheries

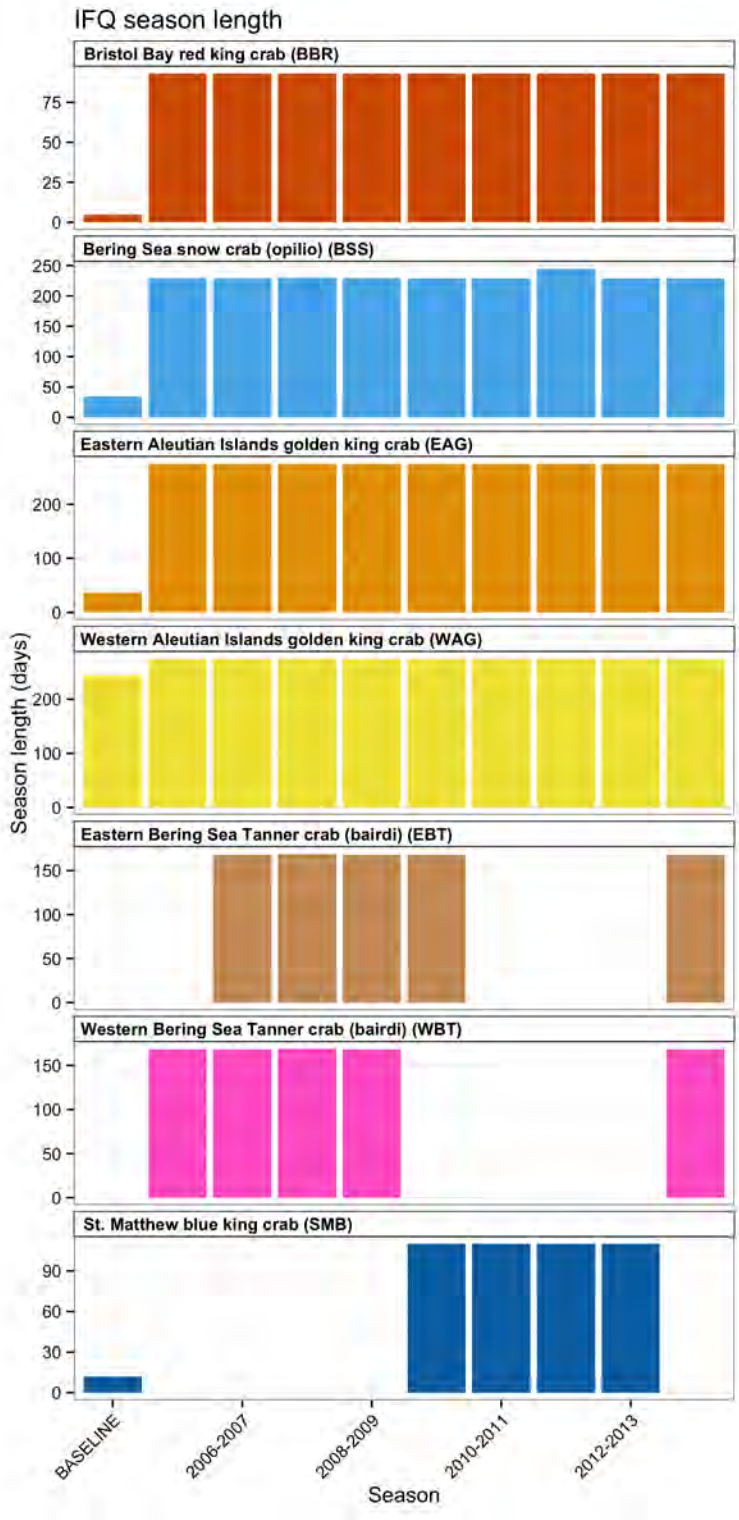
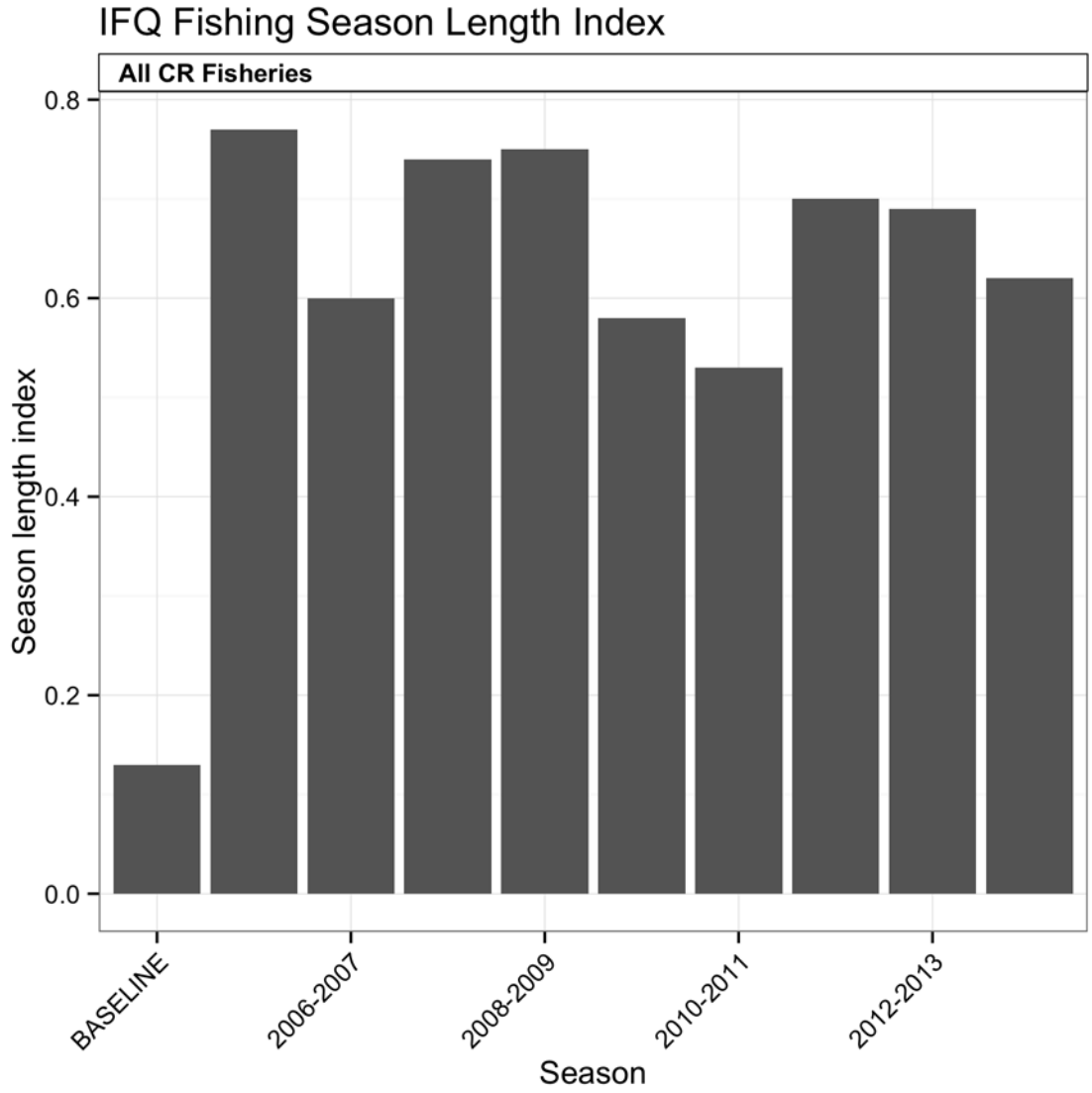


Figure 5.8: Season length index IFQ Crab Fisheries




**Revenue** *Note: all revenues, prices, fees, and other monetary figures have been in flation-adjusted to 2013 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 ($162 million) compared to the Baseline Period ($213 million; Figure 5.9). 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 $160 million in 2009/10 from 2007/08 revenue as the quota declined. Despite these fluctuations, in 2010/11, IFQ crab revenue was 76% greater ($264 million) compared to the previous year ($160 million) due primarily to increased prices. Revenue increased 11% to $294 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 $228

million. Revenue aggregated over all crab fisheries declined again in 2013/14, down 17% to $190 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 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 5.9). 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 framework of metrics, which are intended to measure performance in the IFQ portion of the CR program. Non-IFQ crab revenue (not available for the baseline period) initially decreased by 39% in 2006/07 to $11 million from $18 million in 2005/06. Between 2006/07 and 2009/10, non-IFQ crab revenue decreased by 15% from $12 million in 2007/08 to $9 million in 2009/10. Over the next three seasons, non-IFQ crab revenue increased by 48% to $12 million in 2010/11 - 2011/12, and $14 million in 2012/13.

Table 5.1 presents the weighted average price calculated over all species of crab in the CR program, with prices reported separately for each species in Tables 5.2 through 5.9. Relative to the baseline period average of $3.19 ex-vessel price per pound (averaged over all IFQ Program crab species landed in a given year), by 2009/10, prices had declined by 21% to $2.51 (Figure 5.10). Prices substantially rebounded over the 2010/11-2012/13 period, peaking at $3.88 on average during 2010/11 and returning to approximately the baseline period average, $3.12 - $3.14 for the following two seasons, before declining to $2.97 in 2013/14.

During the first year of the IFQ Program, crab revenue per vessel increased by slightly more than 100% in $1.60 million ,compared to $0.79 million on average during the baseline period, due primarily to the reduced number of vessels and in spite of the reduced catch allocation that season (Figure 5.11). IFQ crab revenue per vessel subsequently continued to increase, peaking at $2.7 million in 2007/08 before declining the following two seasons, to $2.1 million in 2009/10. Average revenue increased by 84% over the next two seasons to a high of $3.76 million per vessel in 2011/12. As of 2013/14, IFQ crab program per-vessel revenue is $2.53. On a per trip basis, again averaging over all IFQ crab, revenue per trip increased by 31% to $350 thousand in 2006/07 compared, but has subsequently remained between $350-400 thousand most seasons, dropping to $310 thousand in 2009/10 before surging to $480 thousand the following season (Figure 5.12). As of 2013/14, per trip revenue has moderated at $400 thousand.

Figure 5.9: Total IFQ-crab and non-IFQ-crab landings revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the BSAI Crab Rationalization Program

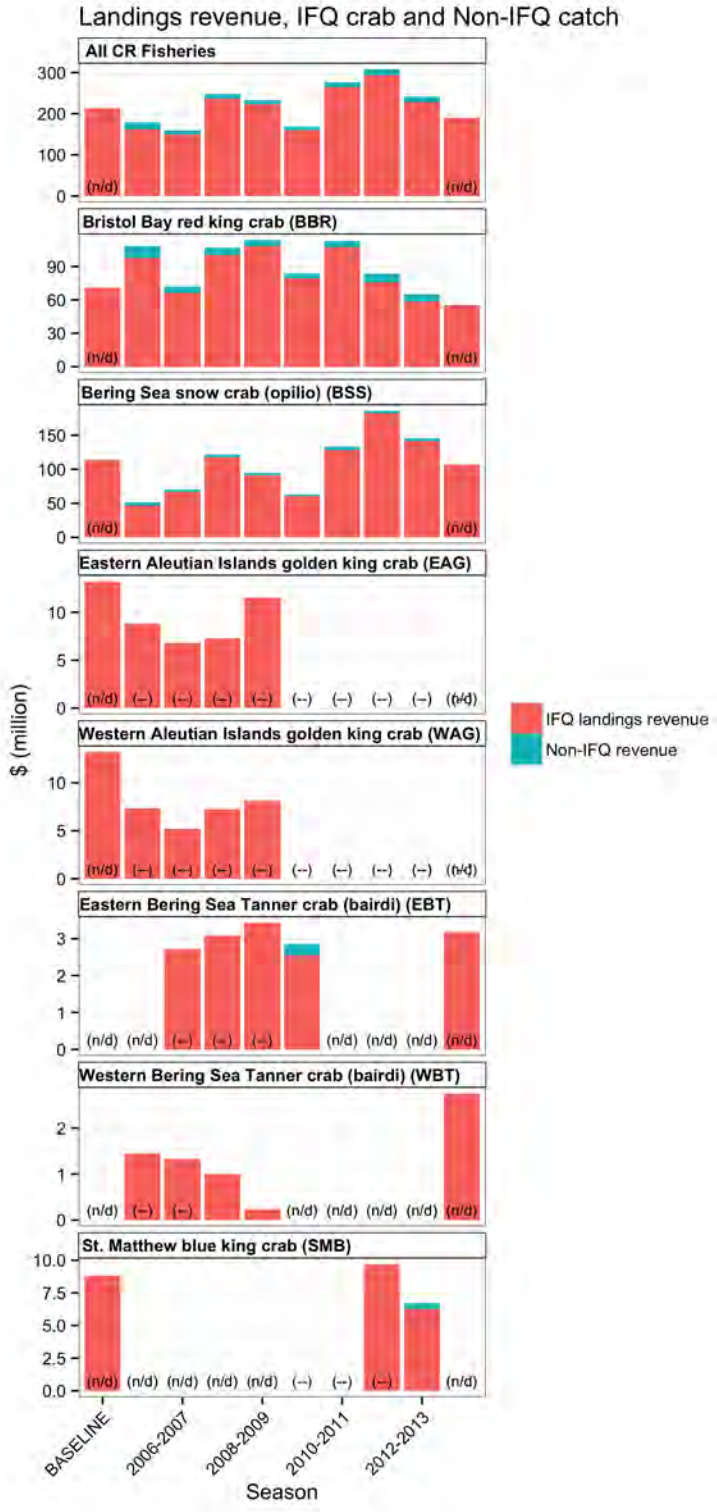


Figure 5.10: Average combined IFQ crab price per pound (inflation-adjusted 2013 dollars) in the BSAI Crab Rationalization Program

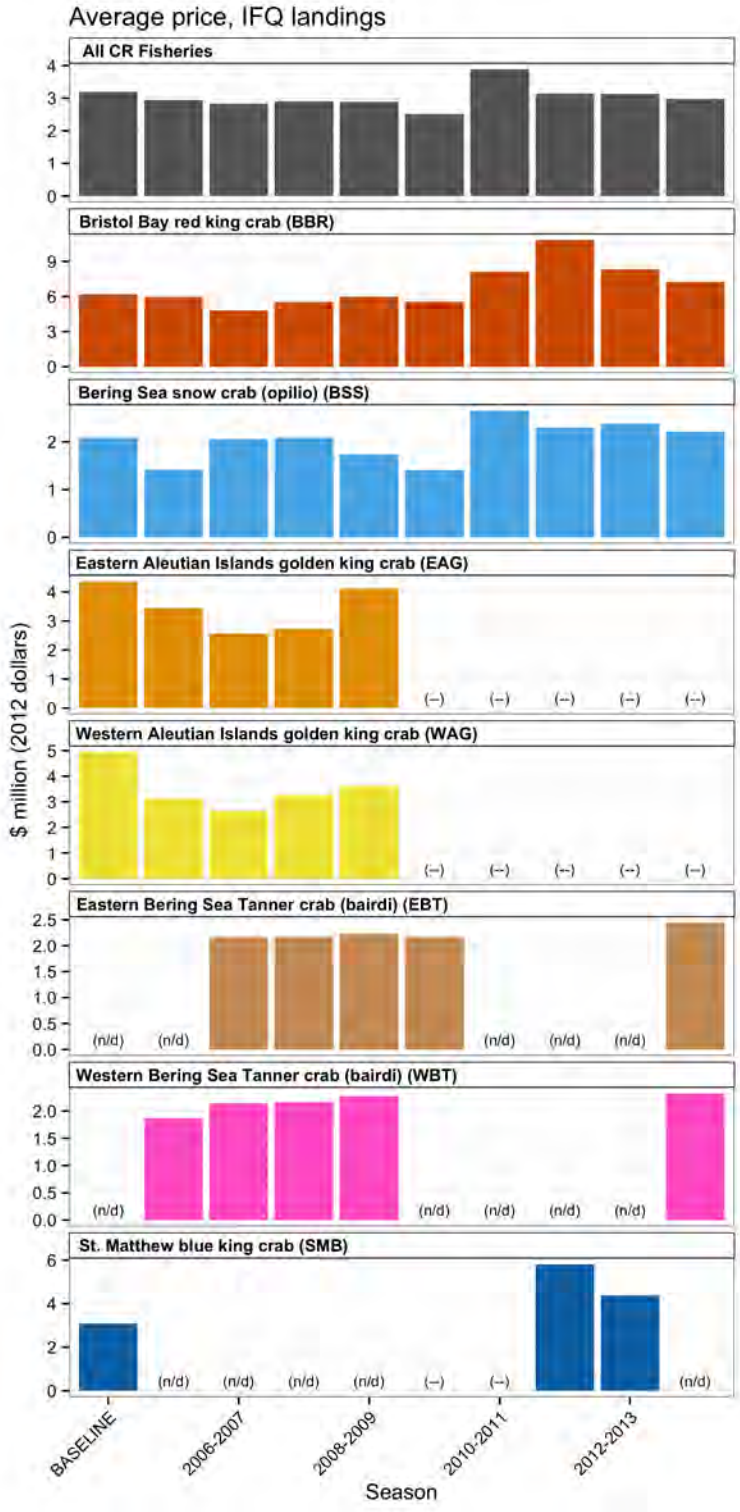


Figure 5.11: IFQ crab revenue (inflation-adjusted 2013 dollars) per vessel fishing quota in the BSAI Crab Rationalization Program

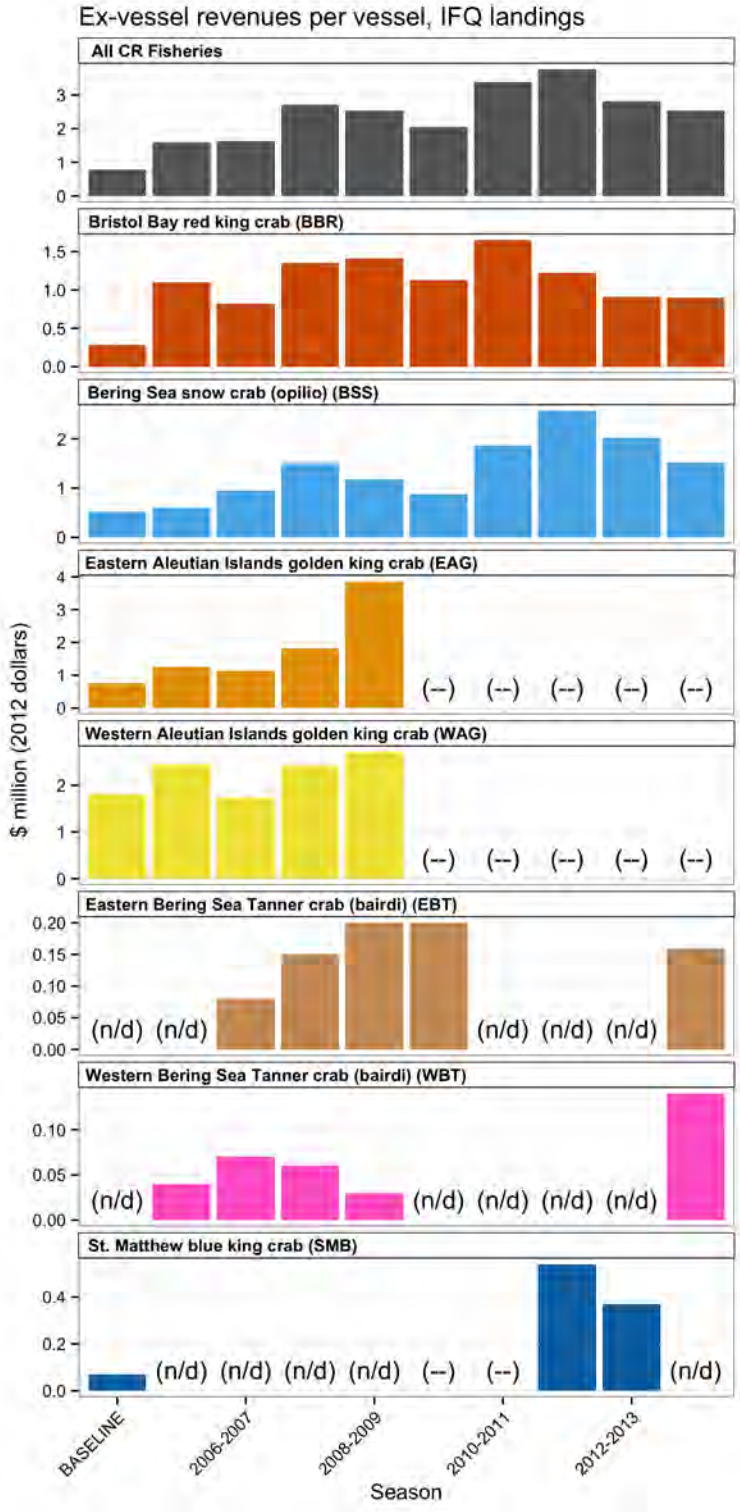


Figure 5.12: IFQ Crab revenue per trip

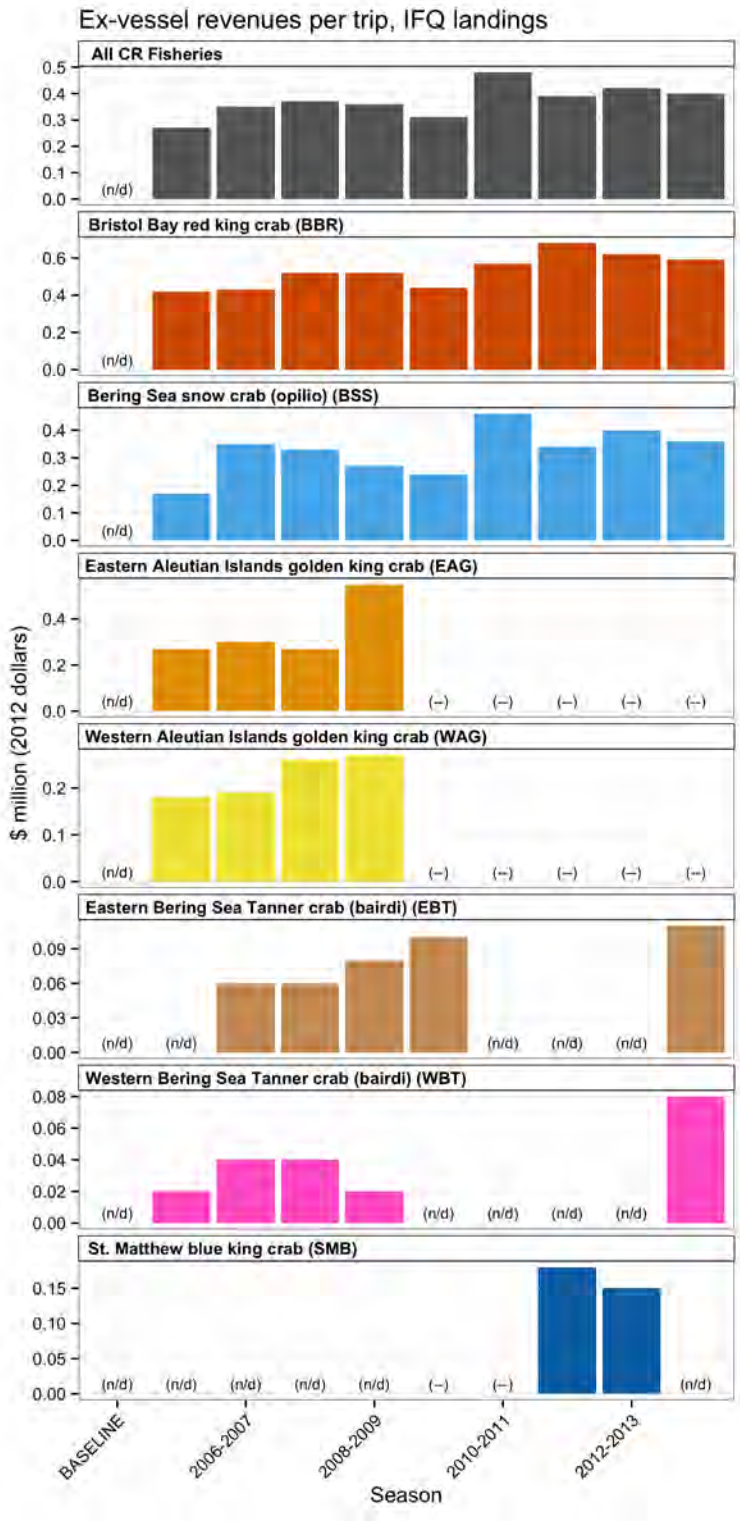


Table 5.1: IFQ Fisheries Catch Share Performance Metrics[abcd]

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 113.65 | 54.99 | 52.62 | 81.17 | 77.08 | 63.81 | 68.05 | 93.35 | 73.15 | 63.91 |
| | IFQ quota allocated (million lbs) | 109.87 | 56.55 | 54.69 | 85.25 | 80.28 | 65.28 | 69.03 | 94.56 | 73.91 | 64.78 |
| | Landed deadloss (million lbs) | 1.39 | 0.46 | 0.56 | 0.70 | 0.63 | 0.70 | 0.53 | 0.69 | 0.60 | 0.55 |
| | Percent TAC/GHL utilized | 103% | 98% | 97% | 96% | 97% | 99% | 99% | 100% | 100% | 100% |
| | Decreased deadloss from last Season | - | YES | NO | NO | YES | NO | YES | NO | YES | YES |
| | TAC or GHL exceeded | YES | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Cost Recovery | Fees Collected, IFQ crab ($million) | - | 5.01 | 4.62 | 7.17 | 2.13 | 0.00 | 7.29 | 3.47 | 0.01 | 1.39 |
| Effort | Active Vessels | 264 | 101 | 91 | 87 | 88 | 78 | 78 | 78 | 81 | 75 |
| | Entities holding harvest quota share | 491 | 491 | 486 | 470 | 478 | 481 | 489 | 498 | 502 | 501 |
| | Season length index | 0.13 | 0.77 | 0.60 | 0.74 | 0.75 | 0.58 | 0.53 | 0.70 | 0.69 | 0.62 |
| | Trips | - | 594 | 426 | 640 | 623 | 516 | 552 | 754 | 540 | 481 |

Continued on next page.

Table 5.1: Continued

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Price | Weighted price/lb, IFQ crab | 3.19 | 2.94 | 2.83 | 2.91 | 2.89 | 2.51 | 3.88 | 3.14 | 3.12 | 2.97 |
| Revenues ($million) | IFQ landings | 213.09 | 161.83 | 148.83 | 236.08 | 222.60 | 160.14 | 264.24 | 293.50 | 227.88 | 190.03 |
| | IFQ revenue / active vessel | 0.79 | 1.60 | 1.64 | 2.71 | 2.53 | 2.05 | 3.39 | 3.76 | 2.81 | 2.53 |
| | IFQ revenue / trip | - | 0.27 | 0.35 | 0.37 | 0.36 | 0.31 | 0.48 | 0.39 | 0.42 | 0.40 |
| | Non-IFQ landings on IFQ trips | - | 17.86 | 10.68 | 11.86 | 10.65 | 8.93 | 12.40 | 14.06 | 14.13 | - |
| | Total revenue on IFQ trips | - | 179.69 | 159.51 | 247.94 | 233.25 | 169.07 | 276.64 | 307.56 | 242.01 | - |
| | Gini | 0.3721 | 0.4017 | 0.3903 | 0.3455 | 0.3357 | 0.3098 | 0.3286 | 0.3094 | 0.3141 | 0.3077 |

**Notes:** 2013/2014 revenue and prices are preliminary as of December 2014. Dollars are inflation-adjusted to 2013 equivalent value using the Producer Price Index for unprocessed and packaged fish. "F/C" indicates fishery closure, "*" indicates not applicable, and "*" indicates no data are available.
[a] Baseline seasons are 1998/99, 2001/02, and 2004/05; 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 2005/06 and later seasons. Baseline percentage greater than 100% indicates GHL exceeded
[d] Weight of retained catch discarded at landing and debited against IFQ; at-sea discard, including low-grade catch of target crab, bycatch of female/sublegal targeted crab, 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 CV and CP vessels with any commercial landings 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 2013 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 2013/2014 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 W. Aleutian red king crab fisheries opened only for 1998/99 season of baseline period.
[n] Bering Sea Tanner crab fishery closed in all baseline seasons. Eastern and Western areas were managed as a single fishery in 2005/06 and as separate fisheries in subsequent seasons. The Eastern area was closed by ADFin the 2005/06 season as an in-season management measure.

**Source:** ADF&G Westward Region Shellfish Management Report 2010/2011.,ADF&G fish ticket data,CFEC ex-vessel pricing,NMFS AKR RAM,NMFS AFSC BSAI Crab Economic Data Report (EDR) database

Table 5.2: IFQ Crab Fisheries Performance Metrics, Bristol Bay Red King Crab

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 11.92 | 16.39 | 13.78 | 18.16 | 18.11 | 14.22 | 13.22 | 7.00 | 7.02 | 7.66 |
| | IFQ quota allocated (million lbs) | 12.23 | 16.50 | 13.97 | 18.33 | 18.33 | 14.41 | 13.36 | 7.05 | 7.07 | 7.74 |
| | Landed deadloss (million lbs) | 0.09 | 0.08 | 0.10 | 0.13 | 0.16 | 0.11 | 0.10 | 0.03 | 0.03 | 0.06 |
| | Percent TAC/GHL utilized | 102% | 100% | 99% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | Decreased deadloss from last Season | - | YES | NO | NO | NO | YES | YES | YES | YES | NO |
| | TAC or GHL exceeded | YES | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Effort | Active Vessels | 252 | 89 | 81 | 74 | 77 | 70 | 65 | 62 | 64 | 62 |
| | Entities holding harvest quota share | 426 | 426 | 411 | 391 | 389 | 382 | 386 | 385 | 384 | 382 |
| | Season length (days) | 5 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 | 93 |
| | Trips | - | 235 | 153 | 192 | 207 | 182 | 188 | 112 | 94 | 95 |
| Price | Weighted price/lb, IFQ crab | 6.20 | 5.95 | 4.81 | 5.52 | 5.98 | 5.57 | 8.11 | 10.82 | 8.33 | 7.26 |
| Revenues ($million) | IFQ landings | 71.00 | 97.58 | 66.34 | 100.22 | 108.32 | 79.17 | 107.24 | 75.80 | 58.51 | 55.64 |
| | IFQ revenue / active vessel | 0.28 | 1.10 | 0.82 | 1.35 | 1.41 | 1.13 | 1.65 | 1.22 | 0.91 | 0.90 |
| | IFQ revenue / trip | - | 0.42 | 0.43 | 0.52 | 0.52 | 0.44 | 0.57 | 0.68 | 0.62 | 0.59 |
| | Non-IFQ landings on IFQ trips | - | 10.86 | 5.80 | 6.78 | 5.39 | 4.74 | 5.62 | 7.74 | 6.53 | - |
| | Total revenue on IFQ trips | - | 108.44 | 72.14 | 107.00 | 113.71 | 83.91 | 112.86 | 83.54 | 65.04 | - |
| | Gini | 0.2799 | 0.3719 | 0.3441 | 0.3330 | 0.2983 | 0.2666 | 0.2776 | 0.2854 | 0.2878 | 0.2759 |

**Notes:**

Table 5.3: IFQ Crab Fisheries Performance Metrics, Bering Sea Snow Crab

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 95.07 | 32.93 | 32.32 | 56.23 | 52.29 | 42.71 | 48.46 | 79.36 | 59.19 | 48.23 |
| | IFQ quota allocated (million lbs) | 90.17 | 33.47 | 32.91 | 56.73 | 52.70 | 43.22 | 48.85 | 80.00 | 59.72 | 48.58 |
| | Landed deadloss (million lbs) | 1.18 | 0.32 | 0.38 | 0.50 | 0.40 | 0.50 | 0.31 | 0.58 | 0.43 | 0.35 |
| | Percent TAC/GHL utilized | 105% | 99% | 99% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| | Decreased deadloss from last Season | - | YES | NO | NO | YES | NO | YES | NO | YES | YES |
| | TAC or GHL exceeded | YES | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Effort | Active Vessels | 208 | 78 | 70 | 78 | 77 | 68 | 69 | 71 | 70 | 70 |
| | Entities holding harvest quota share | 389 | 389 | 375 | 356 | 362 | 361 | 361 | 369 | 369 | 371 |
| | Season length (days) | 35 | 229 | 229 | 230 | 229 | 229 | 229 | 245 | 229 | 229 |
| | Trips | - | 282 | 192 | 350 | 333 | 250 | 280 | 540 | 357 | 294 |
| Price | Weighted price/lb, IFQ crab | 2.09 | 1.42 | 2.05 | 2.09 | 1.74 | 1.41 | 2.65 | 2.30 | 2.38 | 2.21 |
| Revenues ($million) | IFQ landings | 113.44 | 46.67 | 66.40 | 117.24 | 90.91 | 60.18 | 128.20 | 182.28 | 141.16 | 106.74 |
| | IFQ revenue / active vessel | 0.52 | 0.60 | 0.95 | 1.50 | 1.18 | 0.88 | 1.86 | 2.57 | 2.02 | 1.52 |
| | IFQ revenue / trip | - | 0.17 | 0.35 | 0.33 | 0.27 | 0.24 | 0.46 | 0.34 | 0.40 | 0.36 |
| | Non-IFQ landings on IFQ trips | - | 5.13 | 3.86 | 3.67 | 3.22 | 2.68 | 4.72 | 3.53 | 4.62 | - |
| | Total revenue on IFQ trips | - | 51.80 | 70.26 | 120.91 | 94.13 | 62.86 | 132.92 | 185.81 | 145.78 | - |
| | Gini | 0.2735 | 0.3700 | 0.3514 | 0.3152 | 0.3114 | 0.3148 | 0.3306 | 0.2864 | 0.2786 | 0.2970 |

**Notes:**

Table 5.4: IFQ Crab Fisheries Performance Metrics, Bering Sea Tanner Crab - East

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | - | - | 1.26 | 1.42 | 1.54 | 1.18 | - | - | - | 1.30 |
| | IFQ quota allocated (million lbs) | - | - | 1.69 | 3.10 | 2.49 | 1.22 | - | - | - | 1.32 |
| | Landed deadloss (million lbs) | - | - | 0.01 | 0.02 | 0.01 | 0.01 | - | - | - | 0.01 |
| | Percent TAC/GHL utilized | - | - | 75% | 46% | 62% | 98% | - | - | - | 100% |
| | Decreased deadloss from last Season | - | - | - | NO | YES | YES | - | - | - | NO |
| | TAC or GHL exceeded | - | - | NO | NO | NO | NO | - | - | - | NO |
| Effort | Active Vessels | - | - | 35 | 20 | 17 | 13 | - | - | - | 20 |
| | Entities holding harvest quota share | 426 | 426 | 412 | 389 | 388 | 376 | 383 | 380 | 381 | 381 |
| | Season length (days) | - | - | 168 | 169 | 168 | 168 | - | - | - | 168 |
| | Trips | - | - | 48 | 55 | 45 | 26 | - | - | - | 30 |
| Price | Weighted price/lb, IFQ crab | - | - | 2.16 | 2.17 | 2.23 | 2.16 | - | - | - | 2.44 |
| Revenues ($million) | IFQ landings | - | - | 2.71 | 3.09 | 3.43 | 2.55 | - | - | - | 3.18 |
| | IFQ revenue / active vessel | - | - | 0.08 | 0.15 | 0.20 | 0.20 | - | - | - | 0.16 |
| | IFQ revenue / trip | - | - | 0.06 | 0.06 | 0.08 | 0.10 | - | - | - | 0.11 |
| | Non-IFQ landings on IFQ trips | - | - | * | * | * | 0.30 | - | - | - | - |
| | Total revenue on IFQ trips | - | - | * | * | * | 2.85 | - | - | - | * |
| | Gini | - | - | 0.7137 | 0.6219 | 0.6421 | 0.5061 | - | - | - | 0.4381 |

**Notes:** 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 distinct 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.

**Source:**

Table 5.5: IFQ Crab Fisheries Performance Metrics, Bering Sea Tanner Crab - West

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | - | 0.77 | 0.62 | 0.46 | 0.11 | - | - | - | - | 1.19 |
| | IFQ quota allocated (million lbs) | - | 1.46 | 0.98 | 1.96 | 1.38 | - | - | - | - | 1.48 |
| | Landed deadloss (million lbs) | - | 0.01 | 0.02 | 0.00 | 0.00 | - | - | - | - | 0.01 |
| | Percent TAC/GHL utilized | - | 54% | 64% | 24% | 8% | - | - | - | - | 81% |
| | Decreased deadloss from last Season | - | - | NO | YES | YES | - | - | - | - | NO |
| | TAC or GHL exceeded | - | NO | NO | NO | NO | - | - | - | - | NO |
| Effort | Active Vessels | - | 33 | 20 | 18 | 9 | - | - | - | - | 19 |
| | Entities holding harvest quota share | 426 | 426 | 412 | 389 | 389 | 377 | 384 | 381 | 382 | 382 |
| | Season length (days) | - | 168 | 168 | 169 | 168 | - | - | - | - | 168 |
| | Trips | - | 60 | 32 | 28 | 13 | - | - | - | - | 35 |
| Price | Weighted price/lb, IFQ crab | - | 1.87 | 2.14 | 2.16 | 2.27 | - | - | - | - | 2.32 |
| Revenues ($million) | IFQ landings | - | 1.45 | 1.32 | 1.00 | 0.24 | - | - | - | - | 2.75 |
| | IFQ revenue / active vessel | - | 0.04 | 0.07 | 0.06 | 0.03 | - | - | - | - | 0.14 |
| | IFQ revenue / trip | - | 0.02 | 0.04 | 0.04 | 0.02 | - | - | - | - | 0.08 |
| | Non-IFQ landings on IFQ trips | - | * | * | 0.00 | 0.00 | - | - | - | - | - |
| | Total revenue on IFQ trips | - | * | * | 1.00 | 0.24 | - | - | - | - | - |
| | Gini | - | 0.6448 | 0.5191 | 0.4067 | 0.6713 | - | - | - | - | 0.5440 |

**Notes:** 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 distinct 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.

**Source:**

Table 5.6: IFQ Crab Fisheries Performance Metrics, Eastern Aleutian Golden King Crab

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 3.05 | 2.55 | 2.66 | 2.67 | 2.81 | * | * | * | * | * |
| | IFQ quota allocated (million lbs) | 3.00 | 2.70 | 2.70 | 2.70 | 2.84 | 2.84 | 2.84 | 2.84 | 2.98 | 2.98 |
| | Landed deadloss (million lbs) | 0.06 | 0.02 | 0.03 | 0.02 | 0.02 | * | * | * | * | * |
| | Percent TAC/GHL utilized | 103% | 95% | 100% | 100% | 100% | * | * | * | * | * |
| | Decreased deadloss from last Season | - | YES | NO | YES | NO | NO | NO | YES | NO | YES |
| | TAC or GHL exceeded | YES | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Effort | Active Vessels | 17 | 7 | 6 | 4 | 3 | 3 | 3 | 3 | 3 | 3 |
| | Entities holding harvest quota share | 28 | 28 | 27 | 26 | 26 | 24 | 28 | 27 | 27 | 26 |
| | Season length (days) | 37 | 274 | 274 | 275 | 274 | 274 | 274 | 275 | 274 | 274 |
| | Trips | - | 32 | 23 | 27 | 21 | 22 | 21 | 20 | 23 | 22 |
| Price | Weighted price/lb, IFQ crab | 4.36 | 3.45 | 2.57 | 2.73 | 4.12 | * | * | * | * | * |
| Revenues ($million) | IFQ landings | 13.22 | 8.78 | 6.85 | 7.28 | 11.57 | * | * | * | * | * |
| | IFQ revenue / active vessel | 0.76 | 1.25 | 1.14 | 1.82 | 3.86 | * | * | * | * | * |
| | IFQ revenue / trip | - | 0.27 | 0.30 | 0.27 | 0.55 | * | * | * | * | * |
| | Non-IFQ landings on IFQ trips | - | * | * | * | * | * | * | * | * | - |
| | Total revenue on IFQ trips | - | * | * | * | * | * | * | * | * | * |
| | Gini | 0.2887 | 0.3355 | 0.4439 | 0.3848 | 0.2167 | * | * | * | * | * |

**Notes:**

Table 5.7: IFQ Crab Fisheries Performance Metrics, Western Aleutian Golden King Crab

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 2.67 | 2.35 | 1.98 | 2.23 | 2.23 | * | * | * | * | * |
| | IFQ quota allocated (million lbs) | 2.70 | 2.43 | 2.43 | 2.43 | 2.55 | 2.55 | 2.55 | 2.55 | 2.68 | 2.68 |
| | Landed deadloss (million lbs) | 0.04 | 0.03 | 0.02 | 0.02 | 0.02 | * | * | * | * | * |
| | Percent TAC/GHL utilized | 100% | 98% | 82% | 92% | 88% | * | * | * | * | * |
| | Decreased deadloss from last Season | - | YES | YES | NO | YES | NO | YES | NO | NO | NO |
| | TAC or GHL exceeded | YES | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| Effort | Active Vessels | 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 |
| | Entities holding harvest quota share | 24 | 24 | 24 | 25 | 24 | 23 | 23 | 23 | 22 | 22 |
| | Season length (days) | 245 | 274 | 274 | 275 | 274 | 274 | 274 | 275 | 274 | 274 |
| | Trips | - | 41 | 27 | 28 | 30 | 29 | 28 | 27 | 24 | 20 |
| Price | Weighted price/lb, IFQ crab | 4.94 | 3.13 | 2.63 | 3.26 | 3.64 | * | * | * | * | * |
| Revenues ($million) | IFQ landings | 13.20 | 7.36 | 5.21 | 7.26 | 8.12 | * | * | * | * | * |
| | IFQ revenue / active vessel | 1.81 | 2.45 | 1.74 | 2.42 | 2.71 | * | * | * | * | * |
| | IFQ revenue / trip | - | 0.18 | 0.19 | 0.26 | 0.27 | * | * | * | * | * |
| | Non-IFQ landings on IFQ trips | - | * | * | * | * | * | * | * | * | - |
| | Total revenue on IFQ trips | - | * | * | * | * | * | * | * | * | * |
| | Gini | 0.4664 | 0.1623 | 0.2698 | 0.3171 | 0.3239 | * | * | * | * | * |

**Notes:**

Table 5.8: IFQ Crab Fisheries Catch Share Performance Metrics, St. Matthew Island Blue King Crab

| | Category | Baseline | 2005-2006 | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Catch and Landings | Commercial landings (million lbs) | 2.85 | - | - | - | - | * | * | 1.67 | 1.43 | - |
| | IFQ quota allocated (million lbs) | 4.00 | - | - | - | - | 1.05 | 1.44 | 2.12 | 1.47 | - |
| | Landed deadloss (million lbs) | 0.02 | - | - | - | - | * | * | 0.03 | 0.02 | - |
| | Percent TAC/GHL utilized | 72% | - | - | - | - | * | * | 80% | 99% | - |
| | Decreased deadloss from last Season | - | - | - | - | - | - | YES | NO | YES | - |
| | TAC or GHL exceeded | NO | - | - | - | - | NO | NO | NO | NO | - |
| Effort | Active Vessels | 132 | - | - | - | - | 7 | 11 | 18 | 17 | - |
| | Entities holding harvest quota share | 210 | 210 | 210 | 204 | 208 | 207 | 213 | 212 | 209 | 206 |
| | Season length (days) | 12 | - | - | - | - | 110 | 110 | 110 | 110 | - |
| | Trips | - | - | - | - | - | 15 | 35 | 55 | 42 | - |
| Price | Weighted price/lb, IFQ crab | 3.09 | - | - | - | - | * | * | 5.81 | 4.38 | - |
| Revenues ($million) | IFQ landings | 8.81 | - | - | - | - | * | * | 9.70 | 6.27 | - |
| | IFQ revenue / active vessel | 0.07 | - | - | - | - | * | * | 0.54 | 0.37 | - |
| | IFQ revenue / trip | - | - | - | - | - | * | * | 0.18 | 0.15 | - |
| | Non-IFQ landings on IFQ trips | - | - | - | - | - | 0.00 | * | * | 0.46 | - |
| | Total revenue on IFQ trips | - | - | - | - | - | * | * | * | 6.73 | - |
| | Gini | 0.2050 | - | - | - | - | * | * | 0.3738 | 0.3482 | - |

**Notes:** 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.

**Source:**

Table 5.9: IFQ 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 king crab | |
|---|---|---|---|---|---|
| | Category | Baseline | 2005-2014 | Baseline | 2005-2014 |
| Catch and Landings | Commercial landings (million lbs) | 1 | - | * | - |
| | IFQ quota allocated (million lbs) | 1.30 | - | 0.02 | - |
| | Landed deadloss (million lbs) | 0.03 | - | * | - |
| | Percent TAC/GHL utilized | 79% | - | * | - |
| | Decreased deadloss from last Season | - | - | - | - |
| | TAC or GHL exceeded | NO | - | NO | - |
| Effort | Active Vessels | 57 | - | 1 | - |
| | Entities holding harvest quota share | 148 | - | 34 | - |
| | Season length (days) | 14 | - | 273 | - |
| | Trips | - | - | - | - |
| Price | Weighted price/lb, IFQ crab | 3.92 | - | - | - |
| Revenues ($million) | IFQ landings | 3.9 | - | - | - |
| | IFQ revenue / active vessel | 0.07 | - | - | - |
| | IFQ revenue / trip | - | - | - | - |
| | Non-IFQ landings on IFQ trips | - | - | - | - |
| | Total revenue on IFQ trips | - | - | - | - |
| | Gini | 0.3334 | - | * | - |

**Notes:** Both PIK and WAI fisheries were open only during the 1998/1998 season in the baseline period.

**Source:**

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# 6. RESEARCH AND DATA COLLECTION PROJECT SUMMARIES AND UPDATES, 2014 CRAB SAFE REPORT

## Perceptions of Measures to Affect Active Participation, Lease Rates and Crew Compensation in the Bering Sea/Aleutian Islands Crab Fisheries

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In 2010, the North Pacific Fishery Management Council completed a 5-Year Review of the Bering Sea and Aleutian Islands Crab Rationalization program. The review highlighted a suite of unintended social issues that have emerged in the fishery as a result of the management program. The central issues perceived by the Council were the impact of high quota share lease rates on crew pay, difficulty for skippers and crew to purchase quota shares, and concerns about absentee quota ownership. The Council initiated discussion and analyses on these issues; however, they decided instead to encourage the crab fleet to address the issues through voluntary measures. The crab cooperatives developed measures to address the Council's concerns, which were put in place in 2013. The measures include the Right of First Offer program that gives skippers and crew an initial opportunity to purchase quota shares and a voluntary lease rate cap for two of the crab fisheries.

The Alaska Fisheries Science Center developed a study to gather perspectives on the voluntary cooperative measures. Semi-structured interviews were conducted with participants in the fishery, including quota shareholders, vessel owners, skippers, crew, cooperative representatives, Community Development Quota groups, and expert respondents involved in the financial and brokerage aspects of the fishery. Interview respondents were asked to speak to six main topic areas:

1) Access to purchasing quota shares
2) Experience with the Right of First Offer program
3) Perspectives on quota share lease rate caps
4) Crew compensation in the crab fisheries
5) Access to financing for quota share purchases
6) The future of the crab fisheries

Ownership records and contact information from the 2012-2013 season were requested through the Alaska Fisheries Information Network. Contact information was obtained for hired skippers and crew license holders from the crab fisheries' yearly Economic Data Report (EDR). The Commercial Fishery Entry Commission (CFEC) issues gear operator permits and the Alaska Department of Fish and Game (ADF&G) issues crew licenses, either of which are required to crew aboard a vessel. Vessel owners report the CFEC and ADF&G operator and license data through their annual EDRs and contact information for vessel owners, and quota share holders was sourced from the NMFS Alaska Regional Office (AKRO).

Participants were contacted via phone, mail, and/or email. Between February 2014 and September 2014 a total of 220 industry participants were interviewed. This included 43% of all quota

shareholders, 71% of vessel owners, 47% of skippers, and 13% of crewmembers in the fleet. The interviews will be coded using inductive coding methodology and an analysis of code frequency will be completed to determine perspectives on these issues by respondent type. A preliminary report is expected to be released in spring 2015.

**Developing Comparable Socio-economic Indices of Fishing Community Vulnerability and Resilience for the Contiguous US and Alaska**

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The ability to understand the vulnerability of fishing communities is critical to understanding how regulatory change will be absorbed into multifaceted communities that exist within a larger coastal economy. Creating social indices of vulnerability for fishing communities provides a pragmatic approach toward standardizing data and analysis to assess some of the long term effects of management actions. Over the past three years, social scientists working in NOAA Fisheries' Regional Offices and Science Centers 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; Himes-Cornell and Kasperski, 2015). These indices are standardized across geographies, and quantify conditions which contribute to, or detract from, the ability of a community to react positively towards change.

The Alaska Fisheries Science Center (AFSC) has developed indices for over 300 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 Colburn and Jepson (2012) and Jepson and Colburn (2013). To the extent feasible, the same sources of data are being used in order to allow comparability between regions. However, comparisons indicated that resource, structural and infrastructural differences between the NE and SE and Alaska require modifications of each of the indices to make them strictly comparable. The analysis used for Alaska was modified to reflect these changes. The data are being analyzed using principal components analysis (PCA), which allows us to separate out the most important socio-economic and fisheries related factors associated with community vulnerability and resilience in Alaska within a statistical framework.

These indices are intended to improve the analytical rigor of fisheries Social Impact Assessments, through 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 conducted, an advantage to the approach taken to date by the Principal Investigators 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.

Although the indices are useful in providing an inexpensive, quick, and reliable way of assessing potential vulnerabilities, they often lack external reliability. Establishing validity on a community level is required to ensure indices are grounded in reality and not merely products of the data used to create them. However, achieving this requires an unrealistic amount of ethnographic fieldwork once time and budget constraints are considered. To address this, a rapid and streamlined groundtruthing methodology was developed to confirm external validity from a set of 13 sample communities selected based on shared characteristics and logistic feasibility. The goal of this research methodology is to confirm external validity of the well-being indices through measuring how well quantitative

index constructs overlap with qualitative constructs developed from ethnographic fieldwork. Several inter-rater agreement tests, including a Cohen's Kappa and Spearman's rho, were used in assessing construct overlap by measuring how well ethnographic data is in agreement with the indices.

A K-means cluster analysis was used in determining community groupings based on similarities in the secondary data used in creating the indices. Once communities were grouped, 13 sample communities were selected based on the cluster characteristics, and logistical constraints. An iterative, mixed-methods grounded approach was used in developing protocols for ethnographic fieldwork. Key-informant categories were identified based on the index-derived constructs, and interview protocols were developed to target specific themes thought relevant to those constructs. Interviews were open-ended to allow for emergent constructs to present themselves during the interview process. Finally, to supplement interview data physical field assessments of community character, environment, and condition were conducted by researchers.

Once fieldwork was complete, summaries were drawn from researcher experiences and their interview interpretations, which will be used to create a qualitative ranking system. The next step for the groundtruthing exercise is to compare the qualitative fieldwork data to the quantitative indices. As a first step, a rapid assessment will be done in fall 2014. For each quantitative component, a ranking of "high", "medium", or "low" will be given according to the score created from the PCA. Members of the research team then will provide subjective rankings for each component based on ethnographic data, and the two ranking schemes will be tested for inter-rater agreement. Cohen's Kappa will be used to test for perfect matches of rankings, which is the more conservative of two tests. The second test, Spearman's rho, will provide a coefficient of "agreement", and will not omit instances where there was not a perfect match. Together, these tests will provide a well-rounded picture of agreement between the qualitative and quantitative sets of ranks, and thus a general assessment of construct overlap. Reports documenting this phase of the project will be released in 2015.

Groundtruthing the results will facilitate use of the indices 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.

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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.

The crab bioeconomic model has been completed for BBR, and was coupled with a regional CGE model which was recently developed. The coupled model was used to calculate the impacts of the ocean acidification on the economy of the region depending on the fisheries, including the impacts on industry output, value added, and household income for the state of Alaska. CGE model outcomes from yield projections based on two alternative forms (linear versus nonlinear) of ocean acidification effects on the survival of juvenile BBR are compared to a baseline without ocean acidification effects. Results demonstrate considerable uncertainty in projections of yields, and show that economic impacts are sensitive to the form of ocean acidification effects, and to changes in the world price of BBR. The next step is to conduct similar study for BSS.

**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 sought 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 were 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.

This study used two sets of data. One set of data includes observations that were audited, and corrected if the observations are found in error. The other set includes observations that were not audited, therefore subject to measurement errors mostly caused by reporting or recording errors. We found that, based on the audit data, not every observation is subject to measurement errors. Only about 20% in the audit data had measurement errors. Therefore, assuming that the audit data were randomly selected, we estimate that about 20% of the observations in the non-audit data have measurement errors, but do not know which observations have measurement errors. This keeps us from applying the traditional measurement errors analysis (i.e., error-in-variables approach, EIV, Fuller 1987) that assumes every observation is subject to measurement errors. Instead, we extended the parametric fractional imputation (PFI) of Kim (2011), and applied the method to the EDR data in which some unknown part of the observations are subject to measurement errors. We computed the parameter estimates from both PFI and OLS methods, and found that the OLS estimates, which are computed ignoring measurement errors, can significantly bias the quantitative relationship between important variables. We are currently working on a manuscript for potential publication in a journal.

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

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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**

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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 was published in Land Economics in 2013; volume 89(3): 538-557.

**Cooperative Formation and Peer Effects in Fisheries**

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The economic benefits that arise following the transition to a rights-based fishery management regime accrue on both the extensive and intensive margins. This research explores the changes in fleet composition, economic performance, and coordination that occurred following the introduction

of the Bering Sea Crab Rationalization Program. On the extensive margin, we estimate the relative efficiency of vessels within each fishing cooperative to look for potential arbitrage opportunities when selecting which vessels will fish the cooperative's quota allocation. On the intensive margin, we investigate the role of peer effects in facilitating the flow of information within the cooperative. The results support two hypotheses within the red king and snow crab fisheries: (1) the cooperatives which formed appear to have exploited the intracooperative efficiency arbitrage opportunities, and (2) an increase in landings by a fellow cooperative member tends to increase one's own landings, a positive peer effect. This paper was published in Marine Resource Economics, Vol. 29, No. 2 (June 2014), pp. 133-156.