

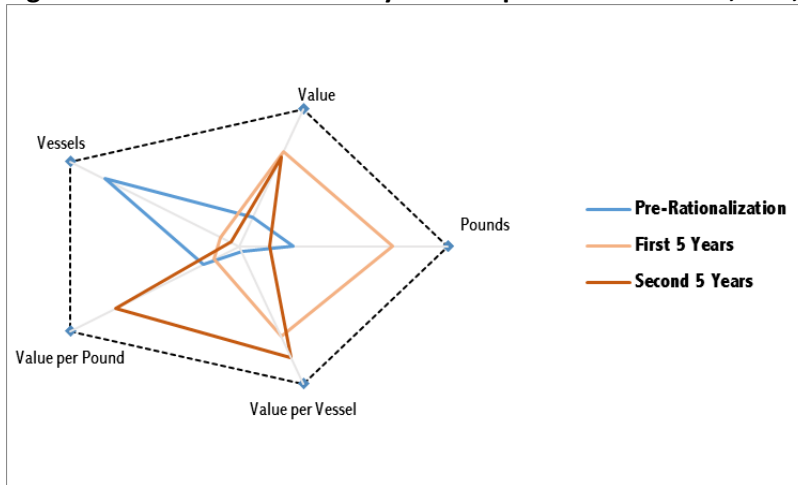
## **BSAI CRAB RATIONALIZATION TEN-YEAR PROGRAM REVIEW SOCIAL IMPACT ASSESSMENT: EXECUTIVE SUMMARY**

This social impact assessment component of the 10-year program review of the Bering Sea/Aleutian Islands (BSAI) crab rationalization program (hereafter called the “10-year program review”) strongly focuses on what has changed (or has not changed) at the community level since the 5-year program review. This analysis explicitly builds upon and updates portions of the social impact assessment that was a part of the 5-year BSAI crab rationalization program review (which, in turn, built upon the 3-year program review social impact assessment). Given the focus of describing change since the 5-year program review, detailed community profiles, included in the 5-year program review, have not been updated for the 10-year program review.

Following an overview and approach section, the SIA provides, within the bounds of data confidentiality constraints, a quantitative participation description by community, including harvest trends by crab fishery, local community fleet participation, catcher vessel crab harvest volume and value by community, local community processor participation, processor volume and value by community by share type, and quota share distribution by community for Alaska, Washington, Oregon, and other U.S. states combined. Following this quantitative description of the distribution of sectors across communities, the SIA provides a series of summaries of the social impacts of crab rationalization by community, including discussions of vessel participation, catcher vessel owner shareholdings, crew participation, catcher vessel crew shareholdings, locally operating processors, support services, and local governance and revenues. Other summaries are provided in the SIA for the following types of fishery participation by Alaska communities/regions: crew employment, catcher processor-related participation, CDQ group participation, and the participation of cooperatives. Brief summaries are also provided for Seattle and other communities outside of Alaska. Summaries by social impact type are also provided.

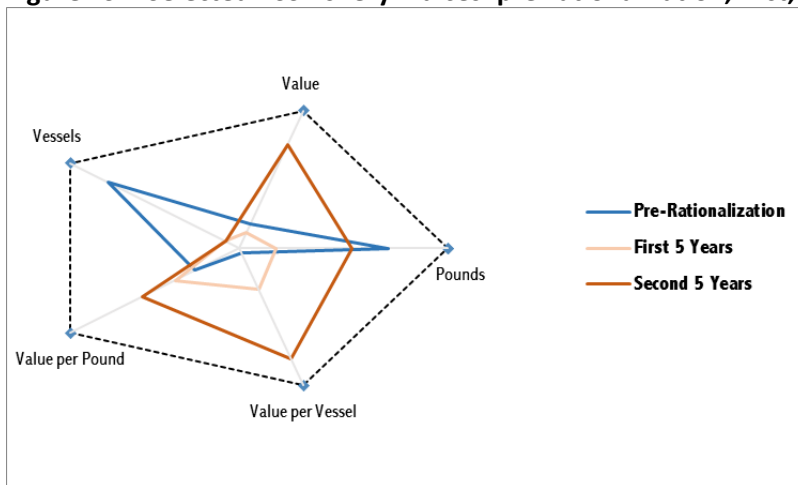
Figures ES-1 and ES-2 show selected annual average indices for the Bristol Bay red king crab (BBR) and Bering Sea snow crab (BSS) fisheries, respectively, for the pre-rationalization period covered by the dataset used for the social impact assessment (SIA) analysis (1998-2005), the first five years following implementation of the rationalization program (2005/2006 through 2009/2010, the years covered by the 5-year program review and labeled “First 5 Years” on the graphics), and the second five years following implementation of the rationalization program (2010/2011 through 2014/2015, the additional years covered by this 10-year program review and labeled “Second 5 Years” on the graphics). The Bristol Bay red king and Bering Sea snow crab fisheries figure prominently in the SIA as they are, by far, the most economically important of all of the fisheries in the rationalization program. These figures show in overview the changing nature of these two fisheries through the relative shifts seen in the number of vessels, pounds landed, value, value per pound, and value per vessel for the three different time periods shown.

**Figure ES-1 Selected BBR fishery indices: pre-rationalization, first, and second five program years**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

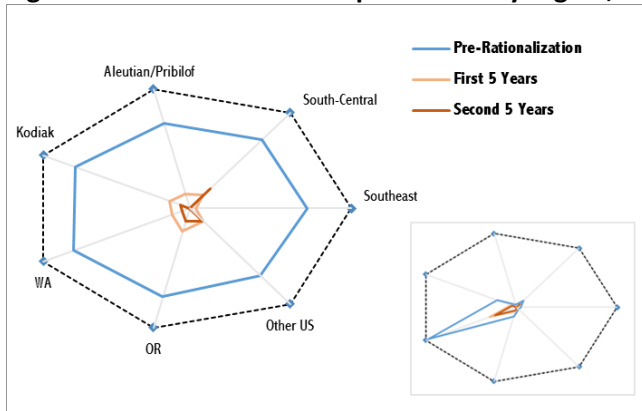
**Figure ES-2 Selected BSS fishery indices: pre-rationalization, first, and second five program years**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

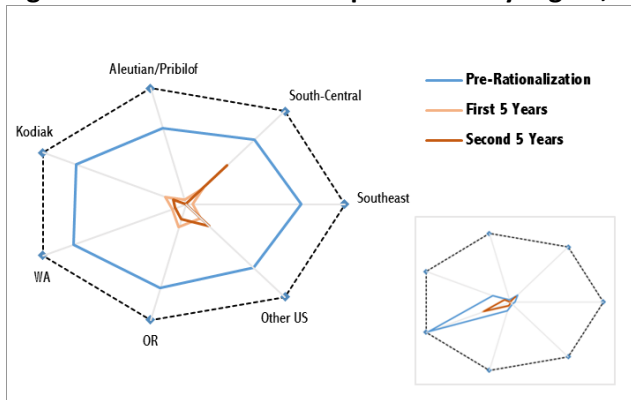
In terms of BSAI crab rationalization program economic and social impacts to communities, no new types of impacts to communities have been identified in this 10-year program review that were not previously described in the 5-year program review. Catcher vessel consolidation has continued, with Figures ES-3 and ES-4 showing changes in catcher vessel ownership numbers by region, while Figures ES-5 and ES-6 show changes catcher vessel ownership percentages for each region. As shown, the number of vessels decreased in every region, while the direction of change in percentage of vessels varied by region.

**Figure ES-3 BRR CV ownership numbers by region, variable scale (primary) and constant scale (inset)**



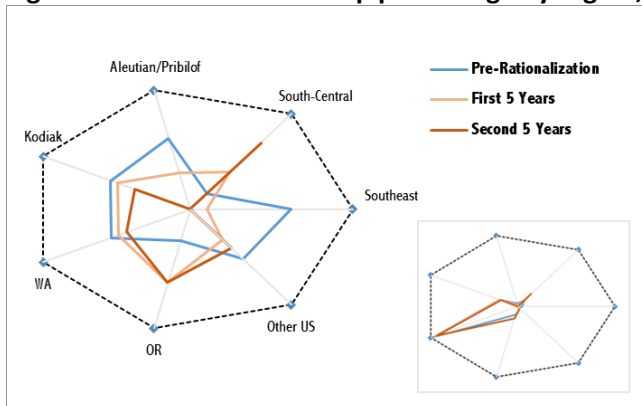
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-4 BSS CV ownership numbers by region, variable scale (primary) and constant scale (inset)**



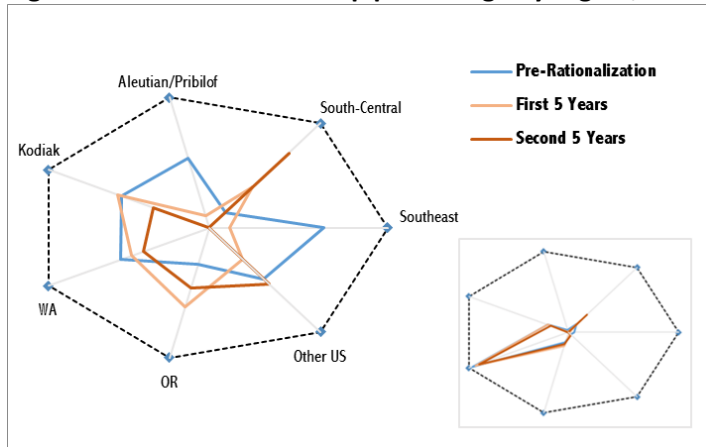
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-5 BBR CV ownership percentage by region, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

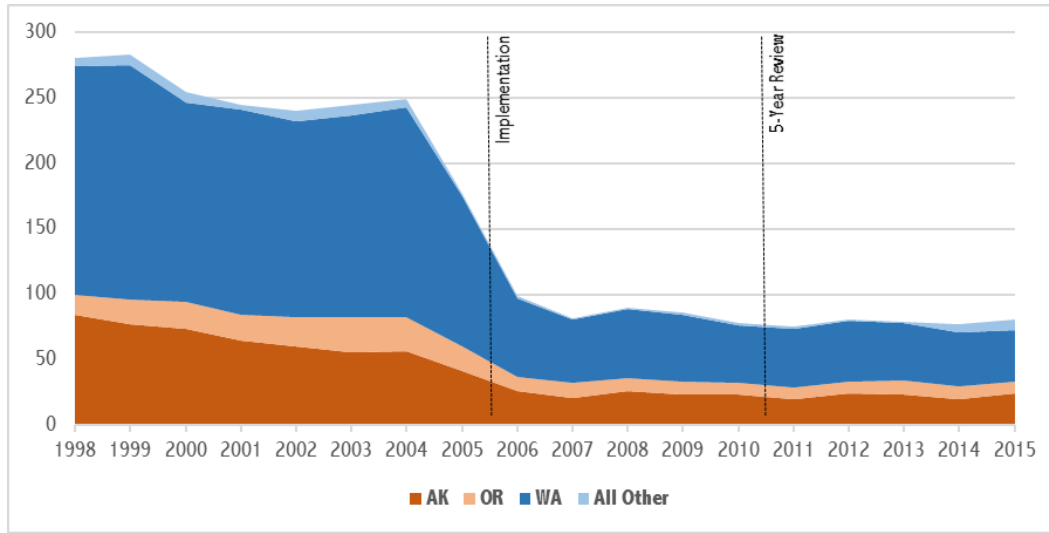
**Figure ES-6 BSS CV ownership percentage by region, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

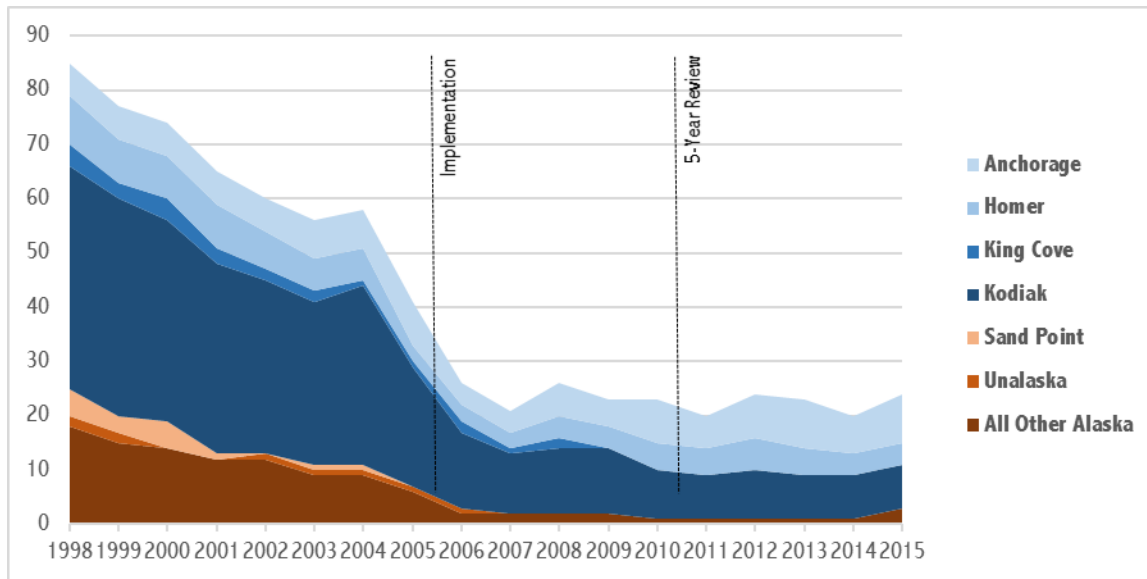
Figure ES-7 tracks the number of unique BSAI crab catcher vessels (all rationalized crab fisheries combined) by state by year, while Figure ES-8 tracks the same information for Alaska communities. Among Alaska communities, since the 5-year program review, only Anchorage, Homer, Kodiak, and Seldovia have had resident-owned catcher vessels participating in the rationalized crab fisheries on a regular basis. Kenai and Wasilla were the only other Alaska communities with any resident-owned catcher vessel participation since the time of the 5-year program review, and then only one resident-owned catcher vessel participated in one of the rationalized crab fisheries in one year in each community. Consolidation of processing continued as well during the years following the 5-year program review. While some communities saw a decrease in the number of plants processing crab in their communities, no Alaska communities lost local processing entirely in the years since the 5-year program review.

**Figure ES-7 Number of unique BSAI crab vessels with earned ex vessel revenue, by state, 1998 through 2014**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

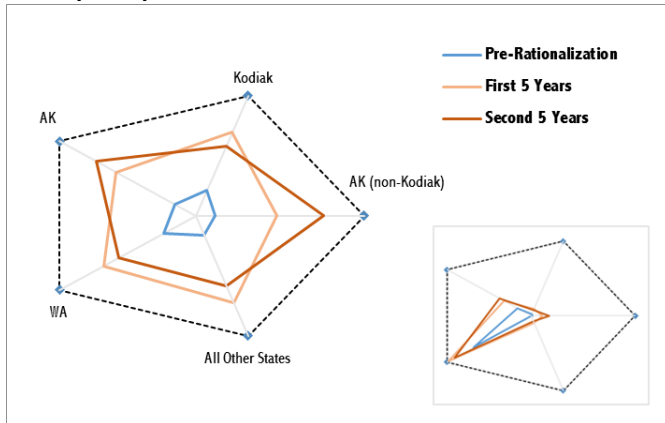
**Figure ES-8 Number of unique BSAI crab vessels with earned ex vessel revenue, by Alaska community, 1998 through 2014**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

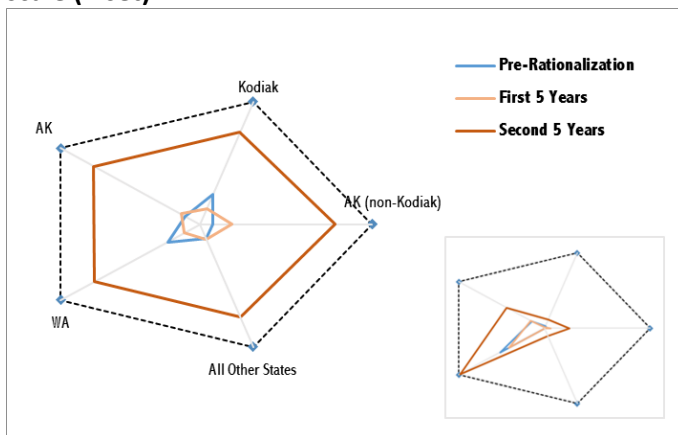
Figures ES-9 and ES-10 show changes in the catcher vessel value harvest by region. Within Alaska, only Kodiak can be shown as a separate category in the tabular data underlying the figure (included in the SIA) due to data confidentiality restrictions.

**Figure ES-9 BBR crab catcher vessel harvest value by region, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

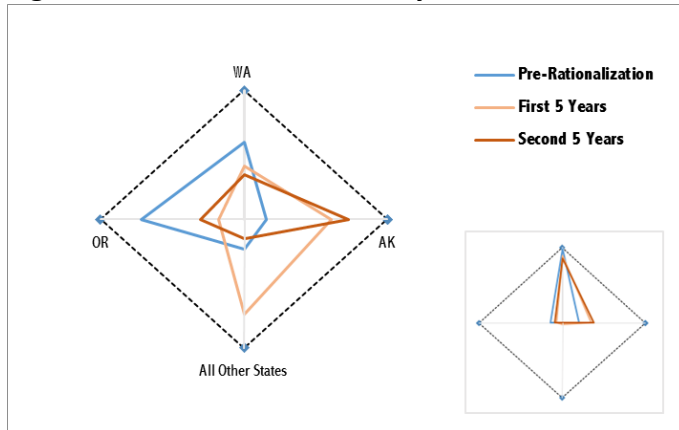
**Figure ES-10 BSS crab catcher vessel harvest value by region, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

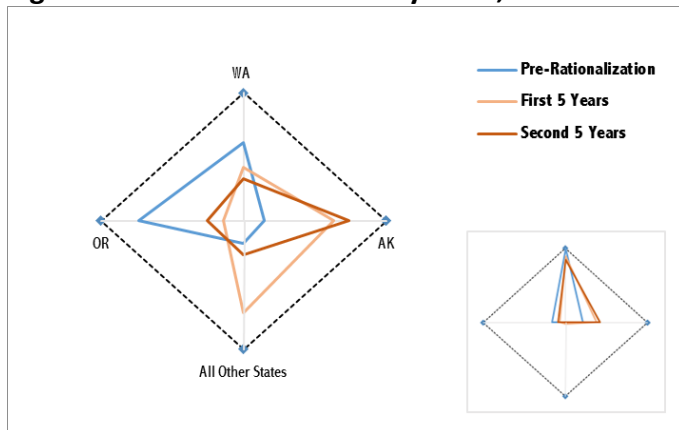
Figures ES-11 and ES-12 show the changes in the level of catcher vessel owner shares, by state, for the Bristol Bay red king and Bering Sea snow crab fisheries.

**Figure ES-11 BBR CVO shares by state, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-12 BSS CVO shares by state, variable scale (primary) and constant scale (inset)**

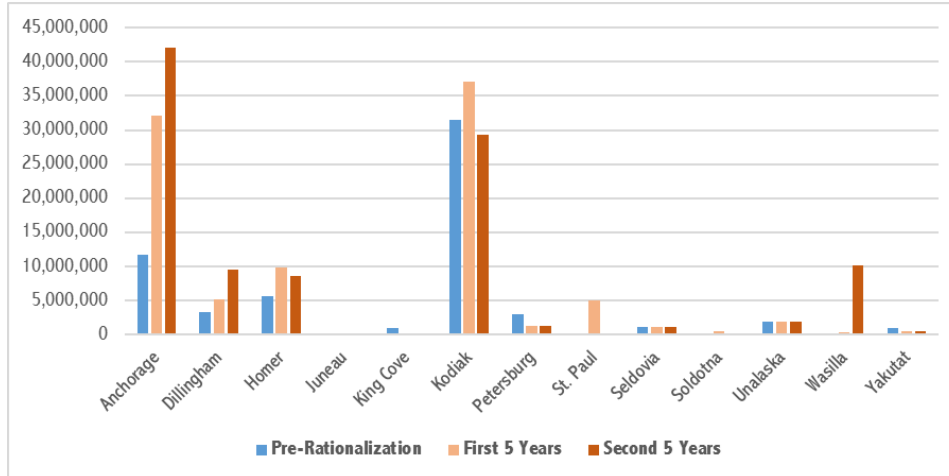


Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

Changes in catcher vessel owner (CVO) quota share ownership by Alaska community in the time since the 5-year program review, in the Bristol Bay red king crab and Bering Sea snow crab fisheries, are shown in Figures ES-13 and ES-14, respectively. Specifically, increases were seen in local holdings in Anchorage, Dillingham, Juneau, and Wasilla, all of which were fueled by CVO quota acquisitions by Community Development Quota (CDQ) groups. As of the 2015/2016 IFQ allocation process, CDQ groups owned 84 percent of the Bristol Bay red king and 83 percent of the Bering Sea snow crab CVO IFQ held in Anchorage, with analogous figures being 97 and 98 percent each, respectively, in Wasilla. In Dillingham and Juneau, CDQ groups accounted for 100 percent of all CVO shares held in those communities. Decreases in local CVO shareholdings were seen in both fisheries in Homer, Kodiak, St. Paul, and Soldotna, and in the Bering Sea snow crab fishery in Petersburg. By the time of the 2015/2016 IFQ allocation process, the only Alaska communities with CVO share unit holdings above initial allocation levels in either fishery were

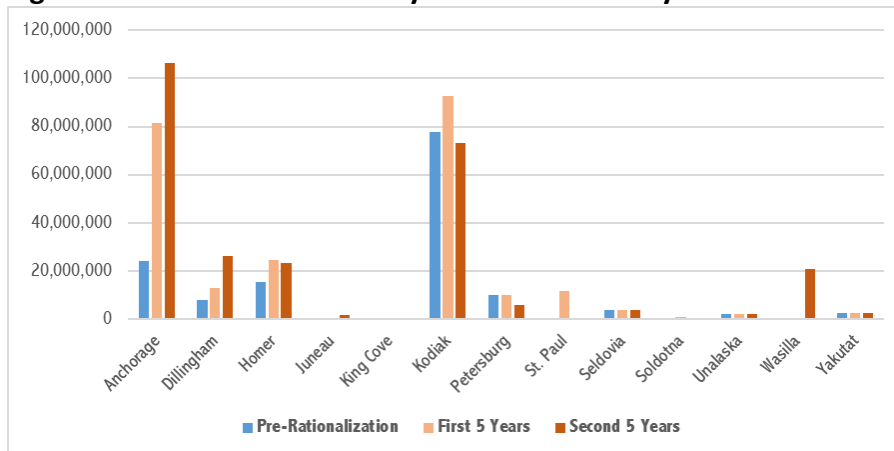
Anchorage, Dillingham, Homer, Juneau, and Wasilla, with Homer being the only community in the group whose holdings are not dominated by CDQ group entities.

**Figure ES-13 BBR CVO shares by Alaska community**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-14 BSS CVO shares by Alaska community**

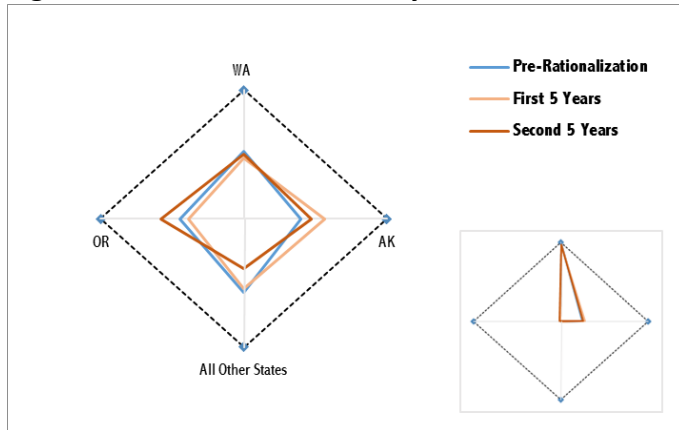


Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

Changes in catcher vessel crew (CVC) quota share ownership by state in the time since the 5-year program review, in the Bristol Bay red king crab and Bering Sea snow crab fisheries, are shown in Figures ES-15 and ES-16, respectively.

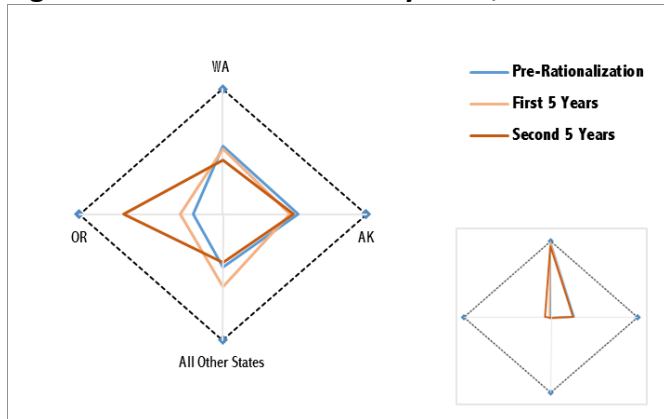


**Figure ES-15 BBR CVC shares by state, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

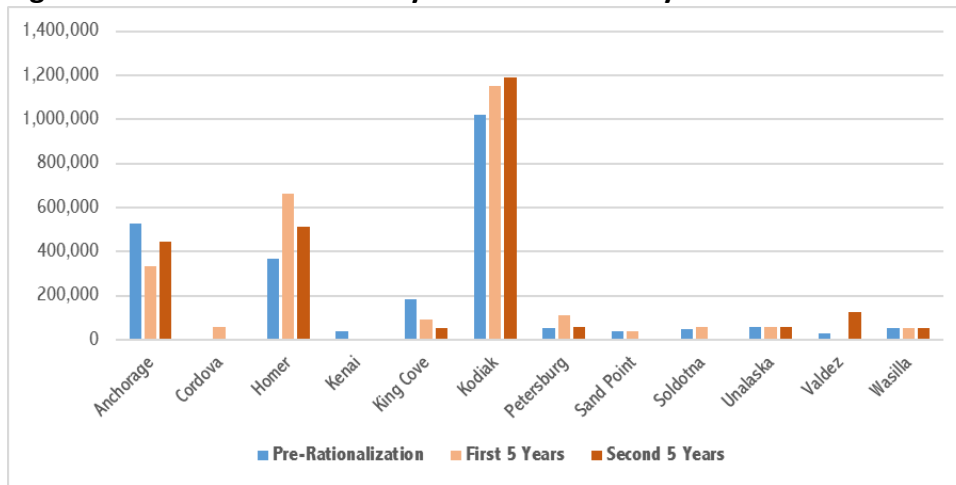
**Figure ES-16 BSS CVC shares by state, variable scale (primary) and constant scale (inset)**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

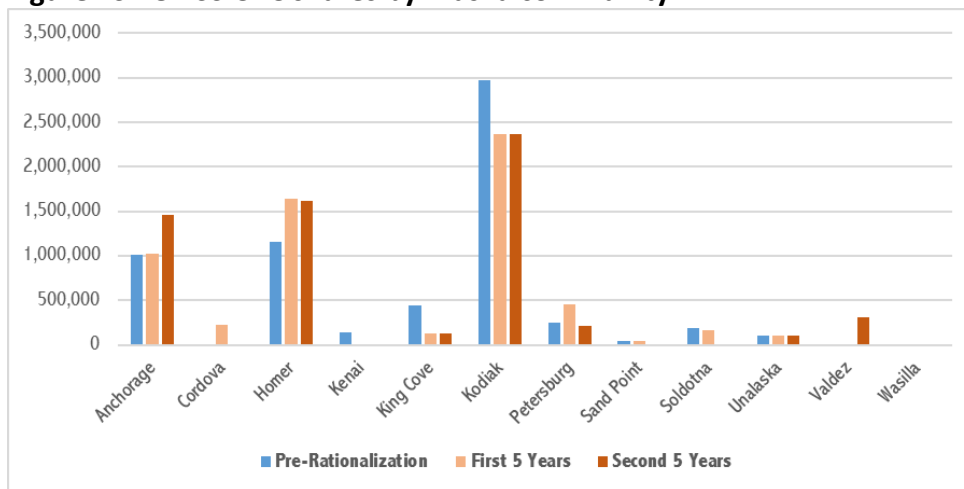
Changes in CVC quota share ownership by Alaska community in the time since the 5-year program review, in the Bristol Bay red king crab and Bering Sea snow crab fisheries, are shown in Figures ES-17 and ES-18, respectively. Increases were seen in both the Bristol Bay red king crab fishery and Bering Sea snow crab fishery in Anchorage and Valdez, while decreases were seen in both in Cordova, Homer, Petersburg, Sand Point, and Soldotna. Kodiak saw an increase in the Bristol Bay red king crab fishery, while King Cove saw a decrease in that same fishery. By the time of the 2015/2016 IFQ allocation process, the only Alaska communities with CVC share unit holdings above initial allocation levels in both fisheries were Anchorage, Homer, and Valdez. Kodiak was above initial allocation levels in the Bristol Bay red king crab fishery, but below initial allocation levels in the Bering Sea snow crab fishery.

**Figure ES-17 BBR CVC shares by Alaska community**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-18 BSS CVC shares by Alaska community**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

Changes in ownership of catcher processor owner (CPO) quota shares in Alaska communities since the 5-year program review include increases in local holdings in Anchorage, Kodiak, and Wasilla, with decreases seen in St. Paul. No Alaska community based entity received an initial allocation of CPO quota shares; by the time of the 2015/2016 IFQ/IPQ allocation process, the only Alaska communities with CPO share unit holdings were Anchorage, Kodiak, and Wasilla. In the cases of Anchorage and Wasilla, all CPO share units were held by CDQ groups. With respect to St. Paul, the decrease in holdings is more apparent than real as there was a transfer in address of CDQ holdings from St. Paul to Wasilla; these CPO share units continue to be held by the same CDQ group.

Changes in ownership of catcher processor crew (CPC) quota shares in Alaska communities since the 5-year program review include increases in local holdings in Homer and Kodiak, with a decrease seen in Anchorage. Among Alaska communities, initial allocation of CPC shares occurred only in Anchorage and Kodiak; by the time of the 2015/2016 IFQ/IPQ allocation process, Anchorage had the same level of share units held as at initial allocation, while the level of share ownership in Kodiak had increased. Anchorage, Homer, and Kodiak accounted for all CVC shares in Alaska at the time of the 2015/2016 IFQ allocation process.

With respect to processor quota distribution across communities, there has been relatively little movement since the time of the 5-year program review. Three of the Eligible Crab Communities (ECCs) do not have shore-based processing occurring at present, and have not had since the inception of the program: False Pass, Port Moller, and St. George.

For both False Pass and Port Moller, qualifying processing history was accrued through the use of floating processors. In the case of False Pass, the right of first refusal holder is the Aleutian Pribilof Island Community Development Association (APICDA) CDQ organization, but the owner of the processing quota shares whose history was earned in False Pass has processed those shares annually since program implementation at its shoreplant in King Cove (through the exercise of an intra-company transfer). This has retained the quota within the Aleutians East Borough, so False Pass shares in the borough-level benefits of this processing, but it does not receive the benefits of community-level landings and processing activity.

In the case of Port Moller, the right of first refusal holder is the Aleutians East Borough, with the borough's Eligible Crab Community Organization (ECCO) being Aleutia, and processing of the quota associated with the community was earned through three separate entities. One was the same entity that was initially allocated processor quota share in False Pass and, similar to that case, this quota has also been processed in King Cove. The processing quota shares of a second entity has been subsequently acquired by APICDA as part of a transaction that involved processing quota in more than one region (and more than one cooling off boundary area), including an area within which APICDA was the right of first refusal holder. While this quota has been processed in Unalaska/Dutch Harbor (not in the Aleutians East Borough) in the past, more recently (and for more years) it has been processed in Akutan (in the Aleutians East Borough). The processing history of the third entity was recently acquired by a different CDQ entity (the Central Bering Sea Fishermen's Association [CBSFA]/57 Degrees North) as part of transaction that involved processing quota within more than one region (and more than one cooling off boundary area), including an area within which CBSFA was the right of first refusal holder; where the processing of that quota will take place in future years is an open question.

In the case of St. George, qualifying processing history was earned by two different processing entities. APICDA, the CDQ entity that holds the rights of first refusal, has acquired the St. George affiliated processing history from one of the two firms that received an initial allocation and has

come to have contractual control over the relevant processing quota shares of the other. The IPQs resulting from this quota has been exclusively custom processed in St. Paul. While St. George has benefitted from the CDQ group of which it is a part owning/controlling its affiliated processing history, and has seen considerable investment in fisheries infrastructure by APICDA, St. George does not receive the direct benefits that accrue from community-level landings and associated local processing activity. St. George has also benefited from the north region component of the regionalization community protection measure as well (e.g., through the retention of processing capacity in the region that, in turn, supports its halibut fishery).

In the case of St. Paul, the community, represented by its right of first refusal holder CBSFA and subsidiaries, has gained processing quota share from a number of transactions, growing the community's market share of processing quota ownership, most recently with the purchase during the 2015/2016 season of Icicle Seafoods' crab assets. St. Paul benefits directly from the north region community protection measure in numerous ways, including being the only location of active shore-based processing in the region. With the recent effective sidelining, if not retirement of floating processing capacity in the region, however, community (and regional) processing dependency has become focused on one plant. St. Paul has also used resources gained under the rationalization program to foster the growth of the local halibut fleet, which provides the community's most direct harvest participation link with respect to local commercial fisheries.

In the case of Akutan, whose right of first refusal holder on processor quota is APICDA, there have been no known instances of processing quota leaving the community. The same holds true for King Cove, whose right of first refusal holder is the City of King Cove and the Aleutians East Borough, as represented by the ECCO Aleutia. The shoreplant in King Cove has had to divest itself of some processor quota, which Aleutia acquired; this quota is still processed in the community in the plant of its original owner under a custom processing agreement. The community has also effectively gained processor quota share from the movement of processor quota from both False Pass and Port Moller to King Cove via intra-company transfer.

In the case of Unalaska/Dutch Harbor, rights of first refusal are held by City of Unalaska, as represented by its ECCO, Unalaska Crab, Inc. A modest amount of processing quota shares left the community when Unalaska Crab, Inc., waived its rights of first refusal on processing quota shares that were then obtained by APICDA. While these shares were processed in Adak in one year, in all other years they have continued to be processed in Unalaska/Dutch Harbor, likely due, in no small measure, to the frequent unavailability of active shore-based crab processing capacity in the western region.

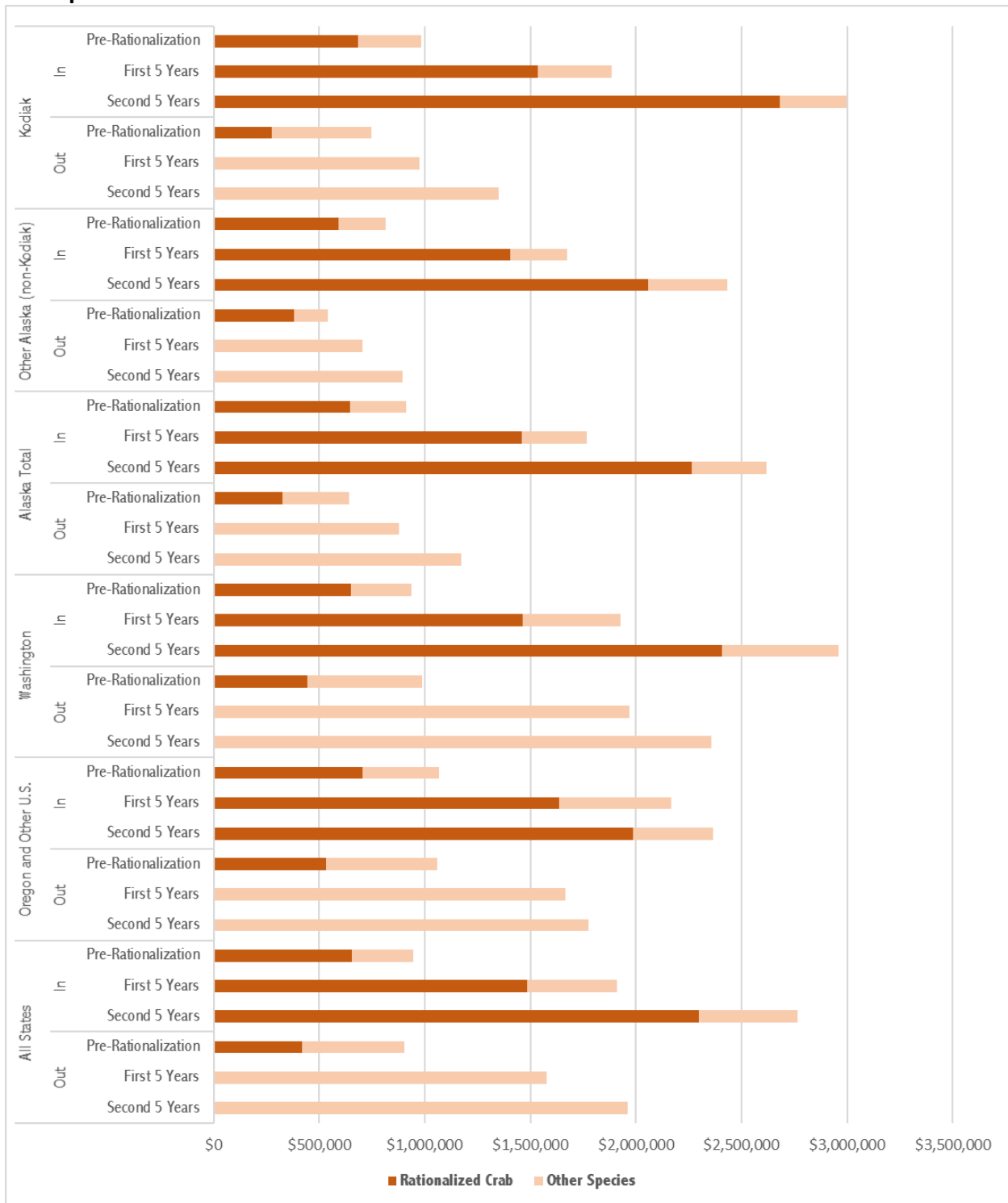
The City of Adak, as represented by the Adak Community Development Corporation (ACDC), the community's ECCO, is the recipient of a direct allocation of a portion of the TAC for WAI golden king crab. There are no rights of first refusal on processing quota affiliated with Adak

processing history, due to the city instead being instead granted the direct allocation as a community protection measure. Adak was also planned to be the most immediate beneficiary of the creation of the west region under the regionalization community protection measure. To date, the community has most directly benefitted from the direct allocation measure rather than the west region measure, due to the lack of an active crab processor in the community in quite a few recent years. The lack of active local capacity (i.e., the inactivity of the one plant that is the focus of community and regional shore-based processing dependency) has functioned to shift processing of crab that would otherwise have been landed in the community to processors in Unalaska/Dutch Harbor, with the effect that Adak has in recent years not received the full potential benefits of local landings and local processing activity. The ADCD has, however, benefitted the community through the use of crab lease royalty funds to purchase halibut IFQ, which is then leased to local vessels to help build a local fishing fleet. Adak has also been the beneficiary of a recent partial delivery offloading exemption to facilitate the growth of a live crab enterprise in the community.

In the case of Kodiak, right of first refusal is held by the City of Kodiak and the Kodiak Island Borough, represented by their ECCO the Kodiak Fisheries Development Association (KFDA). KFDA has obtained lease rights for quota from one locally operating processor that had to divest itself of its A shares; to date the Bristol Bay red king crab portion of this quota has been processed annually in Kodiak, but all other processing shares controlled by KFDA have been processed outside of Kodiak in every year but one. KFDA has been accruing funds from lease payments on the processing quota shares it controls from which the community will benefit, but to date these funds have not been put to use in the community. KFDA is also the eligible right of first refusal entity for any processing quota that comes available under the northern Gulf of Alaska “sweep up” community protection measure; to date, no processing quota has been obtained through this mechanism, with the leased A shares remaining KFDA’s only asset.

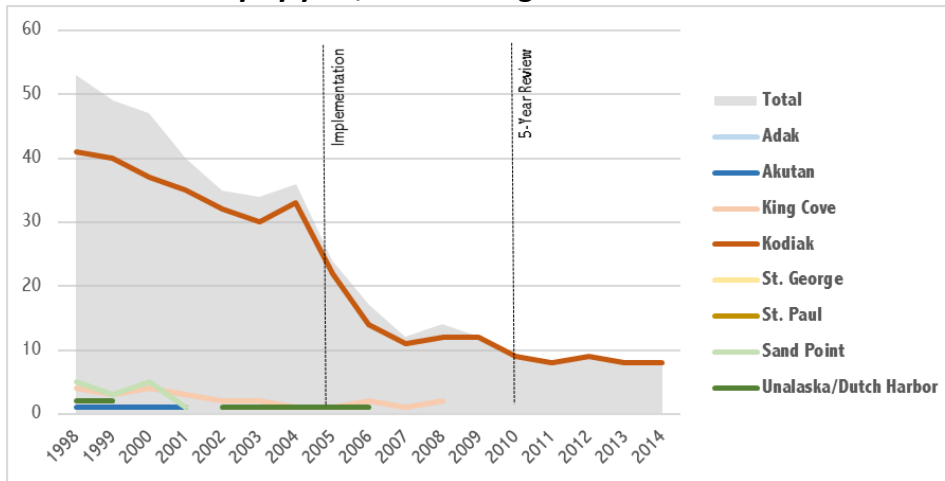
Skipper and crew issues related to the consolidation of the fleet, entry opportunities, the length of seasons/compatibility with other fisheries employment, and the changed nature of the crab fisheries with the advent of widespread quota leasing, have continued to prove challenging. In terms of the impacts of the crab rationalization program with respect to larger fisheries engagement and other trends that interact with skipper and crew issues (and other community impact issues in general), Figure ES-19 tracks the value per vessel comparisons of crab vessels that qualified for quota during the pre-rationalization period and subsequently (1) stayed in the crab fishery post-program implementation (the “In” vessels in the figure) or (2) got out of the crab fishery post-program implementation but stayed active in other fisheries (the “Out” vessels in the figure). This can be used as a rough gauge for continued (or discontinued) benefits to communities in the form of ongoing vessel operations for the two classes of vessels over the years. Figure ES-20 shows, for selected Alaska communities, the trend line for crab vessel ownership over time, while Figure ES-21 shows similar data but for all community vessels, not just crab vessels, displaying the fact that local fleets overall are growing smaller, not just the crab vessel components of those fleets.

**Figure ES-19 Harvest comparison of BSAI crab vessels in/out of the rationalized crab fisheries, value per vessel**



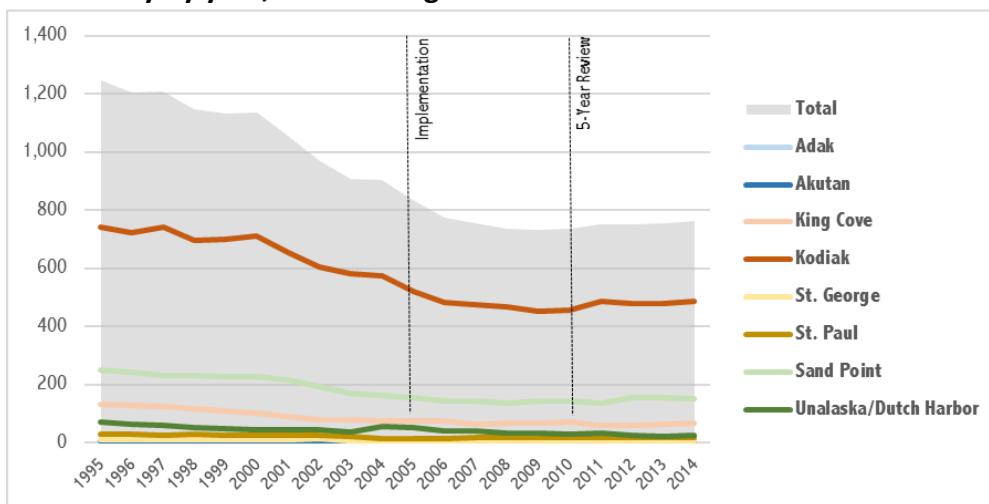
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-20 Number of BSAI crab vessels with earned ex vessel revenue (all fisheries) by Alaska community by year, 1998 through 2014**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

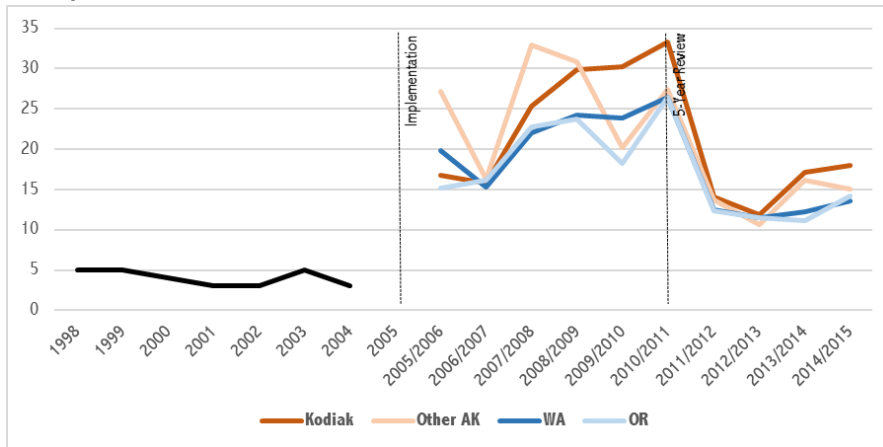
**Figure ES-21 Total number of local commercial fishing vessels (all fisheries) by Alaska community by year, 1995 through 2014**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

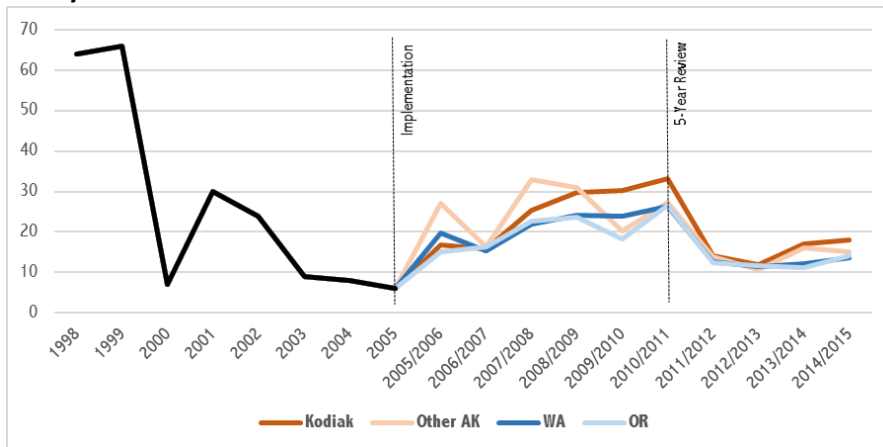
Figures ES-22 and ES-23 show the trend of changes in average fishing days per season per vessel by region for the Bristol Bay red king crab and Bering Sea snow crab fisheries, respectively.

**Figure ES-22 Average fishing days per season per vessel by region, BBR, 1998 through 2014/2015**



Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

**Figure ES-23 Average fishing days per season per vessel by region, BSS, 1998 through 2014/2015**



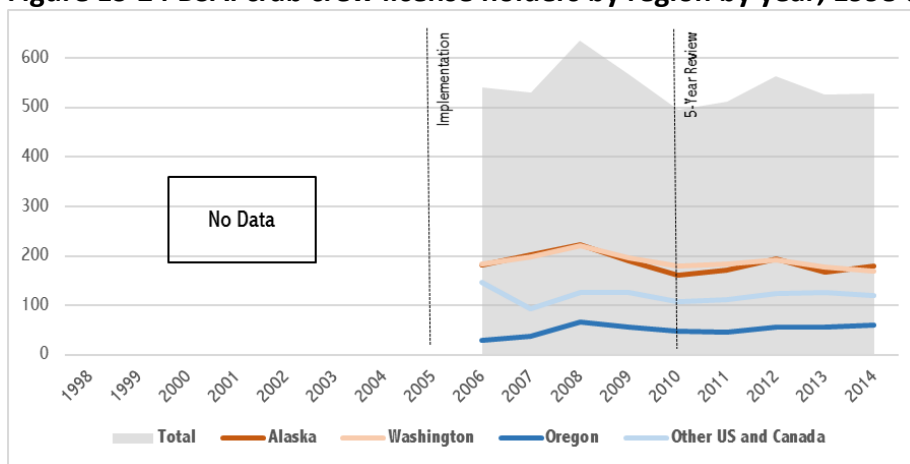
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive\_FT

The communities identified as experiencing with the most substantial skipper and crew related social impacts at the time of the 5-year program review were King Cove and Kodiak, a situation that appears unchanged. King Cove especially has seen a cumulative range of impacts that effect the community in general and former and potential new skippers and crew members specifically, including the exit of locally owned vessels from the BSAI crab fisheries, and the loss of local activity related to multiple crab vessels from outside the community due to consolidation and to loss of market share for vessel port usage to other communities. King Cove has also seen the complete exit of CVO shares from the community, and a marked decline in locally held CVC shares. Relatively recent attempts to address a number of identified skipper and crew issues across all communities have included an amendment to make entry easier for qualified skippers and crew for a limited time period and the implementation of a right of first offer program for qualified skippers and crew through the Inter-Cooperative Exchange.



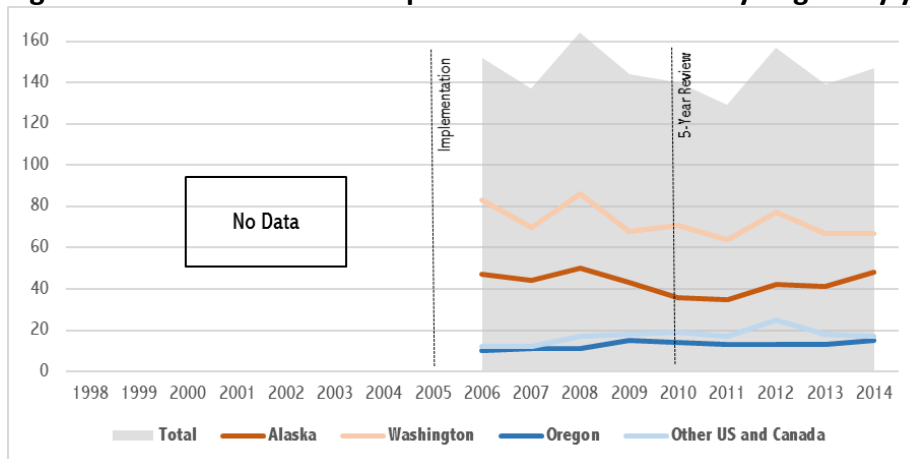
While there are no consistent data available on crab captain and crew employment during the pre-rationalization period, data collected through the Economic Data Reporting program from 2006 onward are available and illustrate trends of change since the implementation of the rationalization program. Figure ES-24 shows data for crew by state derived from ADFG commercial fishing crew licenses, while Figure 25 shows data for captains by state derived from CFEC gear operator permits (note: some holders of gear operator permits may use these permits to serve as crew in lieu of an ADFG commercial fishing license, such that crew may be underrepresented and captains may be overrepresented in the data, but when captain and crew counts are added together, the number of fishing personnel on vessels should be accurate).

**Figure ES-24 BSAI crab crew license holders by region by year, 1998 through 2014**



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

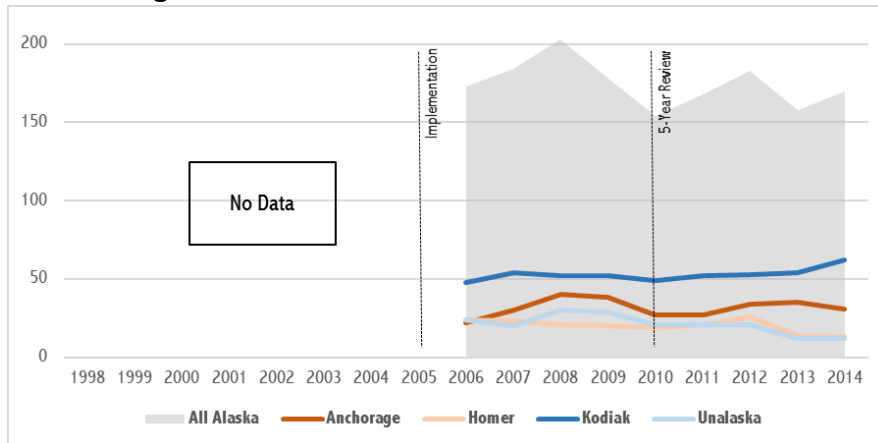
**Figure ES-25 BSAI Crab Gear Operator Permit Holders by Region by year, 1998 through 2014**



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

Figure ES-26 shows similar data for Alaska resident crew by community for the communities with the largest number of crab crew members, along with the state total.

**Figure ES-26 Alaska resident BSAI crab crew licenses holders by selected community, by year, 1998 through 2014**



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

Other social impact issues identified in the 5-year program review that remain issues of concern include community preclusion (both for processing and harvesting) and community divisiveness and equity concerns. Community preclusion with respect to processing remains a concern for at least some communities, with the cost of obtaining processor quota shares (or the effective unavailability of processor quota shares) being perceived as a potential bar to future entry or, in the case of Adak, future expansion (or simply a return to processing levels seen immediately prior to rationalization). Community protection measures under the program were directed toward maintaining participation of the communities that were actively engaged in and dependent upon the fishery during the qualification period, not toward ensuring future entry opportunities.

With respect to community preclusion from a harvester perspective, an “income pluralism” strategy, if not an employment pluralism strategy, has proven important over time for vessel owner/operators, particularly in communities with long-established commercial fishing traditions. The ability of vessel owners to move between commercial fisheries in response to both short- and long-term resource and economic fluctuations has been noted as an integral part of an adaptive approach to earning a living in a number of these communities for generations. There have been concerns expressed in at least some communities that fishery management programs that may serve to limit this type of flexibility, such as crab rationalization, may not be in the long-term best interests of communities that are dependent on an established residential fleet that is, in turn, proportionately large compared to other local economic sectors. This would appear to be

particularly of concern in those communities that are neither CDQ communities nor sizable enough to support a large vessel fleet with greater effective fishing ranges (and therefore at least some greater degree of spatial adaptability).

In terms of community divisiveness and equity concerns, crab rationalization remains a divisive issue within and between communities. The basic structure of crab rationalization runs counter to strongly held opinions on the desired future state of fishery management for some communities, or groups associated with some communities. A number of people and organizations remain fundamentally philosophically opposed to rationalization or other catch share type programs, even in some cases where there have been apparent material benefits from the program. Particularly troubling to some, in a philosophical sense, is the perceived inequity of benefit that derives to absentee ownership through the quota leasing process, especially when the economic return to crew members for the harvest of those leased shares has been substantially reduced.