Economic and Social Impacts of BSAI Crab Rationalization on the Communities of King Cove, Akutan and False Pass

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EXECUTIVE SUMMARY

This report examines economic and social impacts of the first two years of crab rationalization on the Aleutians East Borough communities of King Cove, Akutan and False Pass. The study was conducted by the University of Alaska Institute of Social and Economic Research (ISER) for the Aleutians East Borough (AEB) and the City of King Cove.

The report is based on a literature review, interviews conducted during visits to each study community, analysis of federal and state and local fisheries data and community data, and a household survey conducted by the City of King Cove. The primary focus of the study is on King Cove, because it is a larger community which has experienced greater effects of crab rationalization.

Crab rationalization resulted in dramatic consolidation in Bering Sea crab fisheries. During the first two years of rationalization, consolidation reduced the number of boats participating in the Bristol Bay Red King Crab fishery and the Bering Sea Snow Crab fishery by about two-thirds. This consolidation in the fleet, and the corresponding reduction in crab fishing jobs and crab boat spending, was a major immediate short-term factor driving economic impacts on the three study communities to date. Longer-term concerns of community residents extend beyond these immediate economic impacts to many other issues.

King Cove residents have a long history of participation in many fisheries. Residents have fished primarily in salmon, crab, groundfish and halibut fisheries, mostly from smaller boats (less than 60'). In the census year 2000, when the resident population was about 500, 62 King Cove residents held commercial fishing permits, and another 165 held crew licenses. A 2006 survey found that two-thirds of all King Cove households had a family member who had fished commercially within the past five years, and one-third had a family member who had participated in a crab fishery.

There has been a disturbing long-term decline in fishery participation by King Cove residents, reflected particularly in a decline in the number of salmon limited entry permit holders and halibut IFQ holders. The number of active permit holders participating in at least one fishery declined from 88 in 2003 to 47 in 2005. The number of Alaska Peninsula salmon drift gillnet permits held by King Cove residents declined from 39 in 1981 to 14 in 2005. The number of Alaska Peninsula purse seine permits held by King Cove residents fell from 39 in 1981 to 24 in 2005. The number of King Cove residents holding halibut IFQ decreased from 40 in 1995 to 14 in 2004. The effects of crab rationalization are more significant because they are part of and add to this broader long-term decline in fishery participation and access.

The most important short-term direct economic impacts of crab rationalization on King Cove to date have been a loss of crab fishing jobs and a decline in the use of the King Cove large boat harbor by crab vessels:

- **About twenty King-Cove residents lost crab fishing jobs**. The number of King Cove households with residents participating in the rationalized crab fisheries declined by about two-thirds.

- **The number of crab vessels using the King Cove harbor, which was built specifically to accommodate large crab-fishing boats, declined from about 50-60 prior to rationalization to about 10-15 after rationalization.** During the fall and winter crab fishing months, harbor revenues from pot onloading/offloading fees declined by about two-thirds and revenues from transient moorage fees declined by about one-third.

- King Cove sales tax data do not show any clear effect of crab rationalization on King Cove businesses, with the clear exception of one company which is very dependent on the crab fishery and which experienced a dramatic reduction in sales.

Only one King Cove resident received Catcher Vessel Owner quota share. Three residents received small allocations of Catcher Vessel Crew quota share. Together, these residents total IFQ for the 2005-06 season represented about 0.13% (about 1/750th) of the total IFQ pounds for all fisheries.

King Cove is heavily dependent on the Peter Pan Seafoods (PPSF) processing plant. The processing plant is by far the largest local taxpayer. Between FY 02 and FY 06, fisheries-based taxes—based overwhelmingly on the value of landings for processing at the plant--accounted for more than half of city revenues. In addition, the company's fuel sales, company store, hardware and custom processing operations accounts for more than half of non-fish sales tax revenues. In recent years crab accounted for about one-third of the ex-vessel value of fishery landings in King Cove, and correspondingly about one-third of the value of King Cove fisheries-related revenues and about one-fifth of total city revenues.

In the first two years of rationalization, city fisheries tax data do not suggest that rationalization had any significant effect on King Cove crab landings. However, with the longer crab fishing season, King Cove is potentially more vulnerable to a shift in crab processing out of King Cove to other facilities owned by PPSF's parent company. Such a shift would clearly have a major effect on city revenues and harbor use. (The study did not address whether any such shift is likely or planned.)

The community-protection mechanisms of crab rationalization are not protecting King Cove. According to the National Marine Fisheries Service, under the crab rationalization program "community interests are protected by Community Development Quota (CDQ) allocations and regional landing and processing requirements, as well as by several community protection measures."[1] Unlike Akutan and False Pass, King Cove is not a CDQ community. Other "community-protection" measures did not prevent a significant loss of crab fishing jobs for King Cove residents or a significant decline in the use of the King Cove harbor by crab

[1] Source: "What is Crab Rationalization," from "Crab Rationalization Program Overview and Frequently Asked Questions," National Marine Fisheries Service Crab Rationalization Program website, www.fakr.noaa.gov/sustainablefisheries/crab/rat/progfaq.htm.

fishing vessels. They do not protect against any potential future shift in crab processing away from King Cove.

The communities of Akutan and False Pass have been less directly affected by crab rationalization than King Cove—although some individuals in those communities were clearly affected. Akutan and False Pass are much smaller communities than King Cove. Both communities are also heavily dependent on the fishing industry, and their residents also have long histories of participation in multiple fisheries. However, only a few residents of Akutan and False Pass worked in the rationalized crab fisheries, and neither community had a harbor used by large numbers of crab vessels prior to rationalization. As CDQ communities, Akutan and False Pass continue to benefit from their CDQ groups' crab allocations.

A longer-term view is needed to understand the full economic and social effects of crab rationalization on the study communities. To an outside observer, the effects of crab rationalization may not seem that large by themselves. But the combined effects of the changes in many fisheries over time from multiple rationalization programs are very significant.

A few decades ago, study community residents could and did participate in a wide variety of local fisheries over the course of a year, focusing on those for which local abundance and markets were favorable. For example, many King Cove fishermen fished for salmon in the summer on their own boats and crewed on larger boats for crab in the winter. This pattern of participation in multiple season fisheries persists but has been weakened. Successive rationalization programs—including salmon limited entry, halibut and sablefish IFQs, and most recently crab rationalization—have limited participation in these fisheries to holders of permits and quotas.

Initially the majority of permits and IFQs were distributed to non-local residents. Over time, more permits and IFQs have been sold to non-local residents able to pay a higher price for them. Acquiring high-priced permits and quotas creates barriers for entry into these fisheries for many young people, making becoming a diversified fisherman no longer a realistic option for many young fishermen. Meanwhile, consolidation has reduced the total number of crew jobs in many fisheries, and with fewer local permit and IFQ holders it is harder for local residents to get crew jobs. Although seasonal patterns of participation in a wide variety of fisheries persist, the number of residents participating in fisheries has declined.

Put simply, crab rationalization is one more of many changes which have made it harder and harder for residents of these communities to participate in and make a living from commercial fishing—the activity which defined their communities for generations.

In general, study community residents perceived management programs that keep participation local as helpful and those that don't as harmful. Key informants perceived these programs in different ways, reflecting different ways in which they and other community residents had participated in these fisheries and were affected by these programs. For example, King Cove residents perceived the effects of salmon limited entry as relatively favorable because of the high number of local boat owners who received permits. In contrast, they perceived halibut IFQs unfavorably because very few residents received enough halibut quota to fish

economically. They perceived crab rationalization very unfavorably because most community participation in the fishery was as crew and support industry personnel, and many crewmen lost their jobs and support business income declined.

Community residents expressed a variety of concerns about a long-run decline in fishing opportunities, effects of crab rationalization, and potential implications of future rationalization. Broad concerns which emerged in conversations with key informants included:

- Quota allocation and loss of jobs in IFQ Programs. Informants expressed concerns about job losses under IFQ programs resulting from quota leasing and fleet consolidation, and lack of recognition of historical participation in IFQ fisheries for crew and captains in allocation of quota.

- Reduction in fishing options. Informants indicated that the most important perceived effect of rationalization might be associated with a restriction in their option to participate in crab fisheries in the future.

- Lack of entry-level opportunities. Informants were concerned about a lack of entry-level opportunities in restricted access fisheries and barriers for younger generations in participating in these fisheries.

- Complexity of rationalization plans and perceived lack of transparency in NPFMC process. Interviews conducted in the study communities demonstrated that the complexity of rationalization programs made them difficult to understand, and that study community residents felt there was a lack of transparency in the rationalization process.

- Processor quota share. Informants expressed concerns over the processor quota share feature of crab rationalization. Specific concerns expressed included perceptions that processor quotas contributed to reduced competition and lower prices, and could be transferred out of the community

- Future programs modeled on crab rationalization. King Cove fishermen expressed apprehension about new IFQ programs in other fisheries modeled after crab rationalization, particularly proposed Gulf of Alaska groundfish rationalization. Concerns included the perception that the majority of the quota would be awarded to fishing interests outside of the local area, that the leasing of quota would reduce the number of local jobs and there would be few provisions made for local entry-level opportunities.

Study community youth face declining local options and difficult choices. Interviews and focus groups provided insights into the current lives of study community youth and their options, perceptions and aspirations for the future. Youth originating in the study communities were culturally oriented towards outdoor and subsistence activities and especially those that involve a relationship with the sea. They place an importance on family and their home communities. They value occupations with which they are familiar in their own communities such as air piloting, fishing, construction/trades, city or entrepreneurial business. (In contrast, local youth

originating from outside the region place more value on occupations that are dominant in greater American society such as computers and health care.) With diminishing opportunities in the fishing industry, young people face alternatives of leaving their communities and/or seeking higher education or training for other careers. However, it is difficult for local schools to fully prepare them for these other options. Youth face challenges adjusting to life outside of their small communities without familiar support and social networks.

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I. INTRODUCTION

In the fall of 2005, significant changes were implemented in the management of Bering Sea Aleutian Islands (BSAI) crab fisheries. These changes are commonly referred to as "crab rationalization." Major features of crab rationalization include quota share allocations to harvesters and processors (which are used to calculate annual individual fishing quota and individual processing quota allocations), regional restrictions on where some kinds of crab IFQ may be landed, use caps on quota share and IFQ holdings, crab harvesting cooperatives, "sideboard" regulations to protect Gulf of Alaska fisheries, and a price arbitration system.[2]

In its first two years (2005-06 and 2006-07), crab rationalization brought major changes to BSAI fisheries, with significant impacts on fishermen, processors, and fishing communities.

This report discusses economic and social effects of crab rationalization on the three Aleutians East Borough communities of King Cove, Akutan and False Pass. The report focuses particularly on King Cove because it is a larger community and has experienced effects of crab rationalization to a greater degree.

The report was prepared by Dr. Marie Lowe and Dr. Gunnar Knapp, both of whom are on the faculty of the University of Alaska Anchorage's Institute of Social and Economic Research (ISER). We also received assistance and advice from Dr. Steve Langdon, Professor of Anthropology at the University of Alaska Anchorage. The report was prepared at the request of the Aleutians East Borough and the City of King Cove, which together provided funding for the study.

Dr. Lowe undertook the fieldwork, literature review and analysis of social impacts for the study. Dr. Knapp did the economic analysis for this study. The economic analysis also borrows from research conducted by Dr. Knapp for the City of Kodiak on economic impacts of crab rationalization on Kodiak.[3]

We began research for the study in January 2006. Fieldwork was conducted during the winter of 2006. The social impact analysis was completed during the summer of 2006 and thus focuses on effects during the first year of rationalization. The economic analysis was completed in 2007 and includes some analysis of effects during the second year of rationalization.

Methodology

Our analysis is based on a literature review, interviews conducted during visits to each study community, interviews with fishery mmeanagers and participants, analysis of federal and state

[2] Detailed information about crab rationalization may be found at the "Bering Sea and Aleutian Islands (BSAI) Crab Rationalization Program" website of the National Marine Fisheries Service Alaska Regional Office, at: http://www.fakr.noaa.gov/sustainablefisheries/crab/crfaq.htm#CRreports.

[3] Dr. Knapp's report for the City of Kodiak, "Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses" (June 2006) is available at www.iser.uaa.alaska.edu/iser/people/knapp.

fisheries data, and analysis of local, state and federal data for the three study communities, and a household survey conducted by the City of King Cove.

Community Visits

Dr. Marie Lowe visited False Pass between April 4 and 6, 2006, King Cove between April 6 and 14, 2006, and Akutan between April 24 and 29, 2006. Table I-1 summarizes methods used to collect information during these community visits.

Table I-1: Data Collection for this Study During Community Visits

Data Source	False Pass	King Cove	Akutan
Structured Interviews with Key Informants	1	15	7
Informal Conversations with Residents	X	X	X
Unstructured Interviews with Plant Managers		1	1
Informal Conversations with Processing Workers		X	X
Unstructured Interview with Outside Crab Boat Owner/Captain		1	
Focus Group Interviews with Community Youth	1	3	2
Participant Observation at Community Potlucks	1	2	
Participant Observation at Church Services		X	
Participant Observation at Bars		X	X
Participant Observation at Community Stores		X	X
School Visits	X	X	X

Note: Numbers in the table indicates numbers of persons interviewed.

In King Cove, community fishermen were randomly recruited for structured interviews at the harbormaster's facility and were identified through a convenience sampling method. The reasons for this method include the short period of time available and the chance extension of the cod fishing season at the time of the fieldwork visits. Fishermen were occupied with delivering their catch and working on their boats in the immediate days after the closure. There was some reluctance on the part of the younger fishermen in their 20s and 30s to take the time to be interviewed and so the majority of the interviews were conducted with fishermen in the 40-50 age range in this community who were more aware of the purpose of the study.

In Akutan, all local fishermen who were in town at the time of the visit were interviewed. This included most active community fishermen.

In False Pass, the four active fishermen were fishing the extended cod opener. Therefore only one former fisherman and the only available community elder were interviewed.

In addition to interviewing fishermen, during community visits Dr. Lowe also talked with individuals during meals in school teachers' homes, at the processing plants, on a crab boat with its captain and crew, and in the Chinese Restaurant in King Cove. The trip to King Cove also included informal conversations and participant observation in the King Cove Harbor House (harbormaster's facility) with a variety of community members, attendance at a City Council meeting and a ride on a fishing vessel between King Cove and Cold Bay.

In this report, informants who consented to be identified and quoted are referred to by name, while those who wished to remain anonymous are referred to by descriptions such as "King Cove Fisherman."

City of King Cove's 2006 Household Survey

During the spring of 2006, a survey of 136 King Cove households was conducted for the City of King Cove by Cordova Consulting. The primary purposes of the survey were to help the City in understanding the wants, needs and desires of its residents, and to document this information for the purposes of completing a Community Comprehensive Plan to enable the City to meet Denali Commission guidelines and be eligible for grants and other funding. Several questions were included in the survey about household fisheries participation and the effects of crab rationalization. Our analysis of survey results in this report is based on the survey report[4] as well as an Excel spreadsheet of survey data provided by the city.

Other Data Sources

The City of King provided data on sales taxes, fish taxes, and harbor revenues. The Aleutians East Borough provided additional data for fish taxes collected by the Borough. Sales and fish tax data are presented in this report in a way that preserves confidentiality of the data for individual businesses. Fisheries data analyzed for the study include data posted on websites of the Commercial Fisheries Entry Commission (CFEC) and the National Marine Fisheries Census; Bureau of the Census data from the 2000 and 1990 censuses; crab fisheries data from various publications of the Alaska Department of Fish and Game, and additional crab fisheries data generously provided by Forrest Bowers of the Alaska Department of Fish and Game.

Challenges in Studying Effects of Crab Rationalization on the Study Communities

We faced a number of challenges in conducting this study, which limit the extent to which the study represents a comprehensive analysis of how crab rationalization affected the study communities. These challenges included:

1. The study communities are small places.

The small and disparate populations of the study communities make them difficult to generalize about and to write about. Because there are so few businesses, many kinds of business data are confidential. For example, because there is only one processor in King Cove and one processor

[4] Cordova Consulting, "Community Development Survey Results," prepared for the City of King Cove.

in Akutan, information about the processing industry which can be reported for communities with multiple processors is confidential for these communities.

2. The high cost of travel to the study communities combined with the mobility of the populations made it difficult to contact some residents during field visits. .

The cost of travel limited the number of field visits to the study communities and the time which could be spent in them. Fishermen are often away from their communities fishing, such as in False Pass where the community fishermen had left to fish an extended cod opener during the fieldwork visit. Many other community residents are frequently traveling, seeking services in Anchorage or visiting other destinations, such as the King Cove high school senior class which had left on a field trip to Hawaii during the week of the fieldwork trip there. The methodology employed, however, yielded productive interviews with long-term fishermen in each community which lent a qualitative richness to the data and a "face" to economic indicators such as the number of jobs lost and changes in income levels.

2. **Rationalization began only recently**. **The effects of crab rationalization will happen over a long period of time.**

Crab rationalization had been in place for less one year when the field research for this study was done. Crab rationalization is a learning experience for everyone involved. The crab fisheries will not necessarily stay the same as they were during the first two years of crab rationalization. It is far too early to know what the long-term effects of crab rationalization will be on how many boats fish, on crab fishing jobs and earnings, on quota lease rates, on crab markets and prices, and on communities. Note that it took far longer than one year to begin to see the long-term economic and social effects on small communities of salmon limited entry, halibut and sablefish IFQs, the CDQ program, and the American Fisheries Act.

Although the first two seasons can't show all the effects of crab rationalization, it is important to study the effects of crab rationalization from the beginning. It is only by beginning to study these effects that we can begin to understand the challenges involved in studying them. Early studies help to identify more questions that should be asked and more data that should be collected in future studies.

3. Many factors besides rationalization affect crab fisheries.

Not all of the changes in the crab fishery since rationalization were caused by rationalization. Nor will all future changes be due to rationalization. Crab resource conditions and quotas change from year to year; world crab market conditions change from year to year; and fuel prices change from year to year. It is difficult to separate the effects of rationalization from the effects of these other factors on the crab fishery.

4. Many factors besides crab fisheries affect the study communities.

Not all of the economic and social changes in the study communities since crab rationalization have been caused by rationalization, nor will all future changes be due to crab rationalization.

Economic conditions in other fisheries, such as salmon and halibut, change from year to year. Federal spending and state spending change from year to year. Permanent fund dividends change from year to year. It is difficult to separate the effects of rationalization from the effects of these other factors on the study communities. This is particularly important for small communities where a single event—such as a building burning down, a school or business opening or closing, or a construction project beginning or ending--may have an important economic impact.

5. The crab fisheries would have changed even without rationalization.

We can't assume that the crab fishery would have stayed the same if rationalization hadn't happened, providing the same number of crab fishing jobs and the same income. It is likely that some consolidation would have happened in the crab fishery without rationalization—as has occurred, for example, in salmon fisheries. The true effects of rationalization can't be measured by the changes we observe over time. They are, rather, how the fisheries differ from what they would have become without rationalization—which we can't know exactly.

6. Crab rationalization affects more fisheries than crab.

Different Alaska fisheries are economically linked in many ways. Changes in one fishery may affect other fisheries. People may work in several different fisheries. Losing an opportunity to fish in one fishery may affect whether a fisherman is able to stick with fishing, or has to give up fishing entirely to try to earn income in another job or community. Put simply, we can't understand the effects of crab rationalization by only looking at the crab fishery.

Focus of the Study

Crab rationalization has had far-ranging effects, which have been the subject of a great deal of debate. Our study focuses specifically on how crab rationalization has affected the three study communities. We attempted to develop the best possible objective information on economic and social impacts on these communities given the limited available data, the limited time and resources available for the study, and the significant practical challenges and costs involved in traveling to and conducting research in small communities in western Alaska.

The study does not address other effects of rationalization such as effects on wholesale and ex-vessel prices; fishing and processing costs; efficiency and profitability of the crab fishery and processing industry; quota lease rates; safety; and costs of management and enforcement. While these issues are clearly important, they are far beyond the scope of this study.

While this study is not a comprehensive analysis of the effects of crab rationalization, we believe that the issues that it raises are important. What happens to these three communities and their residents matters, and should be understood and considered in the broader ongoing debate about crab rationalization and the rationalization of other fisheries.

II. OVERVIEW OF CHANGES IN BSAI CRAB FISHERIES DURING THE FIRST TWO YEARS OF RATIONALIZATION

To understand the economic and social impacts of crab rationalization on Aleutians East Borough communities, it is useful to begin by reviewing several broad economic changes in the crab fisheries in the first two years of rationalization. These include changes in the number of boats fishing for crab, the number of people working on crab fishing boats, and payments to captains and crews.

Changes in Bering Sea Crab Fisheries

Several different BSAI crab fisheries were affected by crab rationalization. As shown in Table II-1, the two fisheries which account for most of the harvest volume are the Bristol Bay Red King Crab (BBR) fishery and the Bering Sea Snow (Opilio) Crab fishery (BSS). This chapter focuses on these two fisheries.

Table II-1
Overview of Rationalized Bering Sea Crab Fisheries

Fishery name	Season	Bristol Bay red king crab	Bering Sea snow crab	Eastern Aleutian Islands golden king crab	Western Aleutian Islands golden king crab	Bering Sea Bairdi Tanner crab	Eastern Bering Sea Bairdi Tanner crab	Western Bering Sea Bairdi Tanner crab	TOTAL
Fishery code		BBR	BSS	EAG	WAG	BST	EBT	WBT	
Allocation (lbs)	2005-06	16,496,100	33,465,600	2,700,000	2,430,000	1,458,000			56,549,700
	2006-07	13,974,300	32,909,400	2,700,000	2,430,000		1,687,500	984,600	54,685,800
Total catch (lbs)	2005-06	16,483,312	33,256,303	2,569,209	2,382,963	791,315			55,483,102
	2006-07	13,887,531	32,699,911	2,692,009	2,002,186		1,267,106	633,910	53,182,653
Percent of total catch	2005-06	30%	60%	5%	4%	1%			100%
	2006-07	26%	61%	5%	4%		2%	1%	100%
Percent of allocation	2005-06	100%	99%	95%	98%	54%			98%
	2006-07	99%	99%	100%	82%		75%	64%	97%
Vessel landings	2005-06	259	304	33	42	74			712
	2006-07	183	273	32	31		58	63	640
Pounds per Landing	2005-06	63,642	109,396	77,855	56,737	10,693			77,926
	2006-07	75,888	119,780	84,125	64,587	84,125	64,587	10,062	83,098

Source: NMFS Alaska Region Restricted Access Management Division, http://www.fakr.noaa.gov/sustainablefisheries/crab/crfaq.htm#Crreports.

Harvest volumes have been higher in recent years for the Bering Sea Snow Crab fishery, but ex-vessel prices and ex-vessel value have been higher for the Bristol Bay Red King Crab fishery (Table II-2). The Bristol Bay Red King Crab fishery opens in October while the Bering Sea Snow Crab fishery opens in January. Prior to and after implementation of rationalization, the average number of days fished has been longer for the Bering Sea Snow Crab fishery.

Table II-2
Comparison of the Two Major BSAI Crab Fisheries, 2002/03-2006/07

		2002-03	2003-04	2004-05	2005-06	2006-07
Harvest (million pounds)	BBR	8.9	14.5	14.1	16.5	13.9
	BSS	26.3	22.2	23.0	33.3	32.7
Ex-vessel price ($ millions)	BBR	$6.14	$5.08	$4.71	$4.24	$3.48
	BSS	$1.83	$2.05	$1.81	$0.84	$1.40
Ex-vessel value ($ millions)	BBR	54.2	72.7	65.7	69.5	48.0
	BSS	47.0	45.0	41.3	27.7	45.3

Note: BBR refers to the Bristol Bay red king crab fishery; BSS refers to the Bering Sea snow crab fishery. 2002-03 refers to the Bristol Bay Red King Crab season which began in October 2002 and the Bering Sea Snow Crab season which began in January 2003; references are similar for other years. Sources are listed in Tables II-3 and II-4.

Tables II-3 and II-4 provide summary data for the Bristol Bay Red King Crab and the Bering Sea Snow Crab fisheries. (Note that data for the 2006/07 season are preliminary.)

Table II-3

Bristol Bay Red King Crab Fishery Summary Data, 1996-2006/07

	Before Rationalization									After Rationalization	
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005/06	2006/07
Harvest (000 pounds)	8,406	8,756	14,233	11,091	7,546	7,786	8,857	14,530	14,112	16,478	13,892
Deadloss (000 pounds)	24	14	54	44	76	57	32	228	161	78	99
Estimated live deliveries (000 pounds)*	8,381	8,743	14,179	11,047	7,470	7,729	8,825	14,302	13,952	16,401	13,793
Number of vessels registered	196	256	274	257	246	230	242	252	251	89	81
Number of landings	198	265	284	268	256	238	254	275	270	264	187
Number of pots registered	39,461	27,499	56,420	42,403	26,352	24,571	25,833	46,964	49,506	15,713	14,685
Number of pots pulled	76,433	90,510	141,707	146,997	98,694	63,242	68,328	129,019	90,972	99,573	64,325
Catch per unit of effort (CPUE)	16	15	15	12	12	19	20	18	23	25	34
Estimated avg. days fished per vessel	4	4	5	5	4	3	3	5	3	26	21
Ex-vessel price ($/lb)	$4.01	$3.26	$2.64	$6.26	$4.81	$4.81	$6.14	$5.08	$4.71	$4.24	$3.48
Estimated ex-vessel value ($ million)*	$33.6	$28.5	$37.4	$69.2	$35.9	$37.2	$54.2	$72.7	$65.7	$69.5	$48.0
Average pots registered per vessel*	201	107	206	165	107	107	107	186	197	177	181
Average pots pulled per vessel*	390	354	517	572	401	275	282	512	362	1,119	794
Average harvest per vessel (pounds)*	42,886	34,205	51,945	43,155	30,675	33,854	36,598	57,660	56,225	185,151	171,507
Average ex-vessel value per vessel ($)*	$171,478	$111,333	$136,619	$269,078	$146,057	$161,640	$223,898	$288,310	$261,806	$781,349	$592,602
Average landings per vessel*	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	3.0	2.3
Average live deliveries per landing*	42,331	32,991	49,927	41,219	29,179	32,475	34,743	52,007	51,674	62,125	73,761

Sources: 1996-2004, all data except for ex-vessel prices: Review of major BSAI crab fisheries, 2005/06. Powerpoint presentation prepared by Forrest R. Bowers, ADFG, May 2006; 1996-2004, ex-vessel prices: ADFG 2004 Shellfish Management Report, Table 2-2; 2005/06: Alaska Department of Fish and Game (ADF&G). In prep. Annual Management Report for the Commercial and Subsistence Shellfish Fisheries of the Aleutian Islands, Bering Sea and the Westward Region's Shellfish Observer Program, 2005. Alaska Department of Fish and Game, Fishery Management Report No. YY-XX, Anchorage; 2006/07: Unpublished preliminary ADFG data provided by Forrest Bowers, Alaska Department of Fish and Game. Note: Catch per unit of effort (CPUE) is defined as number of legal crabs retained per pot lift.

** Calculated from data in table.*

Table II-4

Bering Sea Snow Crab Fishery Summary Data, 1997-2006/07

	Before Rationalization									After rationalization	
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2005/06	2006/07
Harvest (000 pounds)	119,543	243,341	184,530	30,775	23,382	30,253	26,342	22,170	23,036	33,256	32,700
Deadloss (000 pounds)	2,352	2,894	1,828	338	430	583	665	224	224	323	379
Estimated live deliveries (000 pounds)*	117,191	240,447	182,702	30,437	22,952	29,670	25,677	21,946	22,812	32,934	32,321
Number of vessels registered	226	229	241	229	207	191	192	189	164	78	67
Number of landings	1127	1767	1630	287	293	403	230	240	196	310	274
Number of pots registered	47,036	47,909	50,173	43,407	40,379	37,807	20,452	14,444	12,930	13,734	10,851
Number of pots pulled	754,140	891,268	899,043	170,064	176,930	307,666	139,903	110,087	69,617	108,397	79,869
Catch per unit of effort (CPUE)	133	209	159	137	97	76	155	157	240	204	342
Estimated avg. days fished per vessel	65	64	66	7	30	24	9	8	5	42	36
Ex-vessel price ($/lb)	$0.79	$0.56	$0.88	$1.81	$1.53	$1.49	$1.83	$2.05	$1.81	$0.84	$1.40
Estimated ex-vessel value ($ million)*	$92.6	$134.7	$160.8	$55.1	$35.1	$44.2	$47.0	$45.0	$41.3	$27.7	$45.3
Average pots registered per vessel*	208	209	208	190	195	198	107	76	79	176	162
Average pots pulled per vessel*	3,337	3,892	3,730	743	855	1,611	729	582	424	1,390	1,192
Average harvest per vessel (pounds)*	528,951	1,062,626	765,684	134,388	112,957	158,390	137,198	117,302	140,465	426,359	488,060
Average ex-vessel value per vessel ($)*	$409,652	$587,994	$667,126	$240,570	$169,646	$231,456	$244,732	$238,036	$251,768	$354,663	$676,119
Average landings per vessel*	5.0	7.7	6.8	1.3	1.4	2.1	1.2	1.3	1.2	4.0	4.1
Average live deliveries per landing*	103,985	136,077	112,087	106,052	78,335	73,623	111,638	91,441	116,388	106,239	117,960

Sources: 1997-2005, all data except for ex-vessel prices: Review of major BSAI crab fisheries, 2005/06. Powerpoint presentation prepared by Forrest R. Bowers, ADFG, May 2006; 1996-2004, ex-vessel prices: ADFG 2004 Shellfish Management Report, Table 2-29; 2005 ex-vessel price: ADFG Preliminary 2005 Alaskan Shellfish Summary, posted at www.cf.adfg.state.ak.us/geninfo/shellfsh/shellfish_harvest.php; 2005/06: Alaska Department of Fish and Game (ADF&G). In prep. Annual Management Report for the Commercial and Subsistence Shellfish Fisheries of the Aleutian Islands, Bering Sea and the Westward Region's Shellfish Observer Program, 2005. Alaska Department of Fish and Game, Fishery Management Report No. YY-XX, Anchorage; 2006/07: Unpublished preliminary ADFG data provided by Forrest Bowers, Alaska Department of Fish and Game. Note: Catch per unit of effort (CPUE) is defined as number of legal crabs retained per pot lift.

* Calculated from data in table.

Table II-5 and III-6 summarize *changes* in the Bristol Bay Red King Crab fishery during the first two years of rationalization, compared with averages for the three years prior to rationalization. Figures II-1 through II-16 (on the following page) compare eight of these indicators over the five-year period, for each fishery.

Table II-5
Changes in the Bristol Bay Red King Crab Fishery During the First Two Rationalized Seasons

Type of measure	Measure	Average for the three seasons before rationalization (2002-2004)	First two rationalized seasons		% change from 2002-2004 average during first two rationalized seasons	
			2005/06	2006/07	2005/06	2006/07
Catches, prices & value	Harvest (000 pounds)	12,500	16,478	13,892	32%	11%
	Assumed ex-vessel price ($/lb)	$5.31	$4.24	$3.48	-20%	-34%
	Estimated ex-vessel value ($ million)	$64.2	$69.5	$48.0	8%	-25%
Pots, landings & CPUE	Number of pots pulled	96,106	99,573	64,325	4%	-33%
	Number of landings	266	264	187	-1%	-30%
	Average pots registered per vessel	163	177	181	8%	11%
	Catch per unit of effort (CPUE)	20	25	34	23%	67%
Vessel participation	Number of vessels registered	248	89	81	-64%	-67%
	Number of pots registered	40,768	15,713	14,685	-61%	-64%
Average effort, harvest and value per vessel	Average pots pulled per vessel	386	1,119	794	190%	106%
	Estimated avg. days fished per vessel	4	26	21	609%	473%
	Average landings per vessel	1.1	3.0	2.3	177%	115%
	Average harvest per vessel (pounds)	50,161	185,151	171,507	269%	242%
	Average ex-vessel value per vessel ($)	$258,005	$781,349	$592,602	203%	130%

Sources: See Table II-3.

Table II-6
Changes in the Bering Sea Snow Crab Fishery During the First Two Rationalized Seasons

Type of measure	Measure	Average for the three seasons before rationalization (2002-2004)	First two rationalized seasons		% change from 2002-2004 average during first two rationalized seasons	
			2005/06	2006/07	2005/06	2006/07
Catches, prices & value	Harvest (000 pounds)	23,849	33,256	32,700	39%	37%
	Assumed ex-vessel price ($/lb)	$1.90	$0.84	$1.40	-56%	-26%
	Estimated ex-vessel value ($ million)	$44.4	$27.7	$45.3	-38%	2%
Pots, landings & CPUE	Number of pots pulled	106,536	108,397	79,869	2%	-25%
	Number of landings	222	310	274	40%	23%
	Average pots registered per vessel	87	176	162	102%	86%
	Catch per unit of effort (CPUE)	184	204	342	11%	86%
Vessel participation	Number of vessels registered	182	78	67	-57%	-63%
	Number of pots registered	15,942	13,734	10,851	-14%	-32%
Average effort, harvest and value per vessel	Average pots pulled per vessel	579	1,390	1,192	140%	106%
	Estimated avg. days fished per vessel	7	42	36	473%	391%
	Average landings per vessel	1.2	4.0	4.1	226%	235%
	Average harvest per vessel (pounds)	131,655	426,359	488,060	224%	271%
	Average ex-vessel value per vessel ($)	$244,845	$354,663	$676,119	45%	176%

Sources: See Table II-4.

Figure II-1

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Total Harvest (pounds)

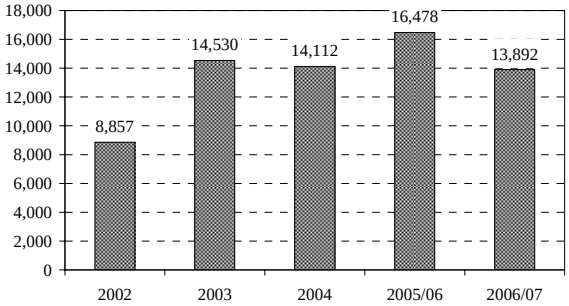


Figure II-2

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Total Pots Pulled

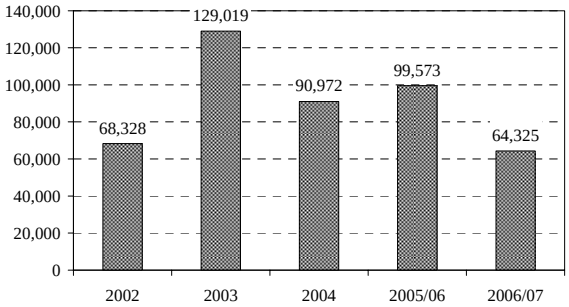


Figure II-3

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Total Landings

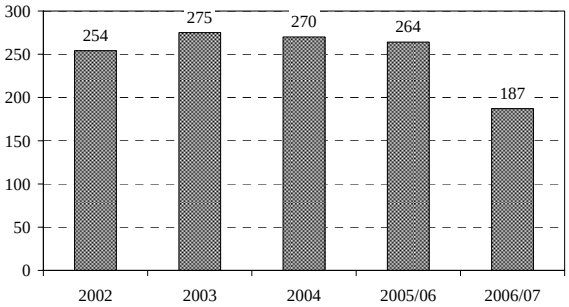


Figure II-4

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Total Vessels Registered

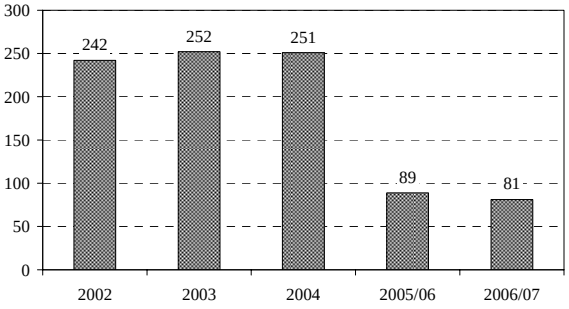


Figure II-5

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Average Pots Pulled per Vessel

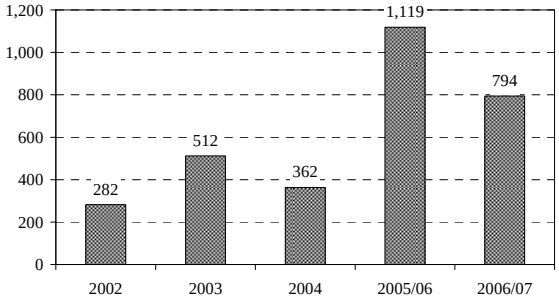


Figure II-6

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Average Harvest per Vessel (pounds)

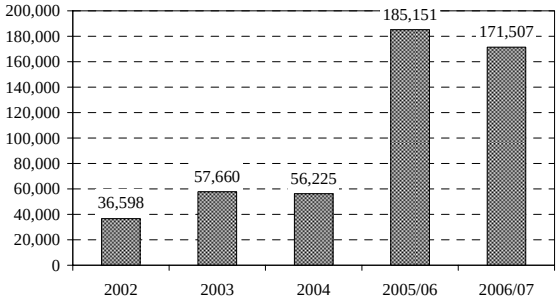


Figure II-7

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Average Landings per Vessel

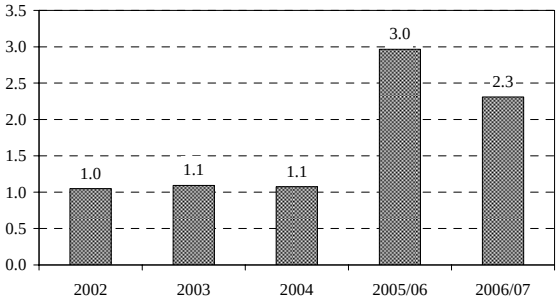


Figure II-8

Bristol Bay Red King Crab Fishery, 2002-2006/07:
Average Days Fished per Vessel

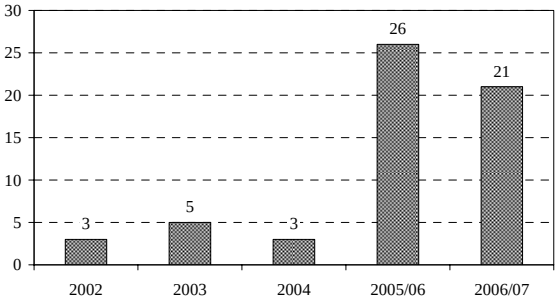


Figure II-9

Bering Sea Snow Crab Fishery, 2003-2006/07:
Total Harvest (pounds)

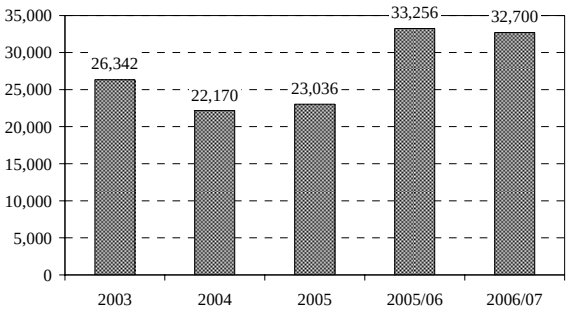


Figure II-10

Bering Sea Snow Crab Fishery, 2003-2006/07:
Total Pots Pulled

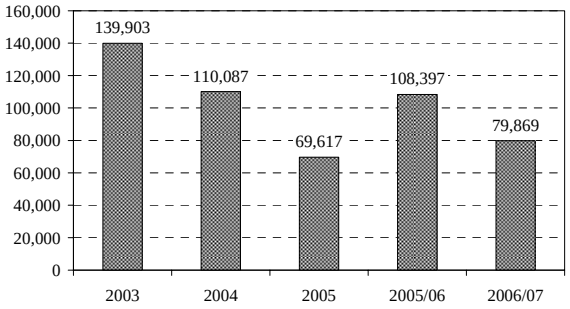


Figure II-11

Bering Sea Snow Crab Fishery, 2003-2006/07:
Total Landings

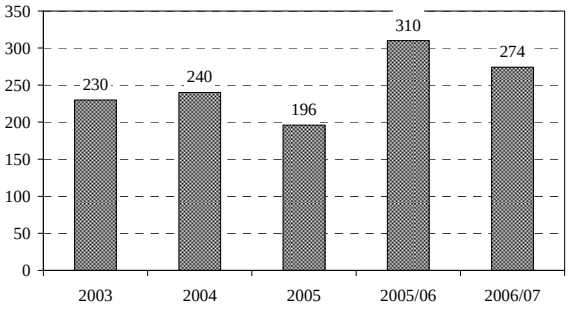


Figure II-12

Bering Sea Snow Crab Fishery, 2003-2006/07:
Total Vessels Registered

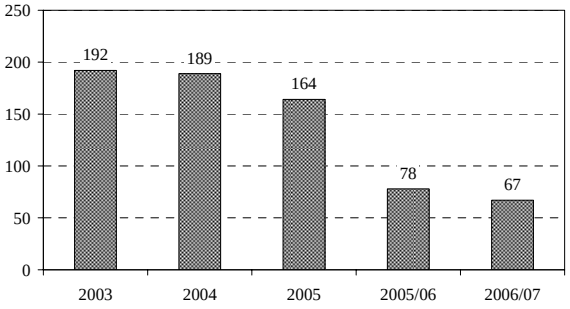


Figure II-13

Bering Sea Snow Crab Fishery, 2003-2006/07:
Average Pots Pulled per Vessel

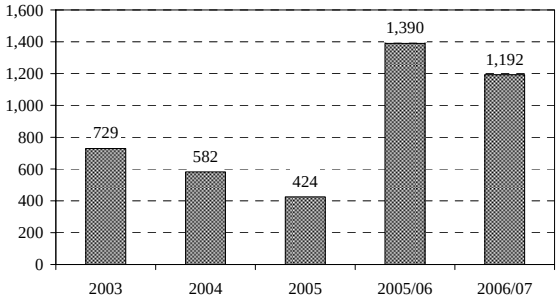


Figure II-14

Bering Sea Snow Crab Fishery, 2003-2006/07:
Average Harvest per Vessel (pounds)

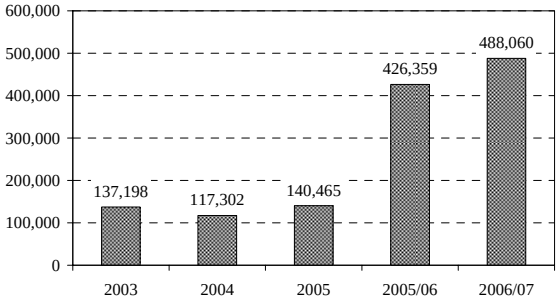


Figure II-15

Bering Sea Snow Crab Fishery, 2003-2006/07:
Average Landings per Vessel

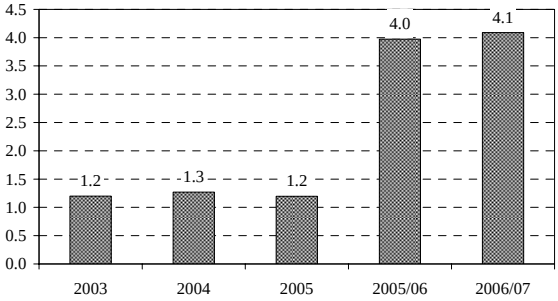
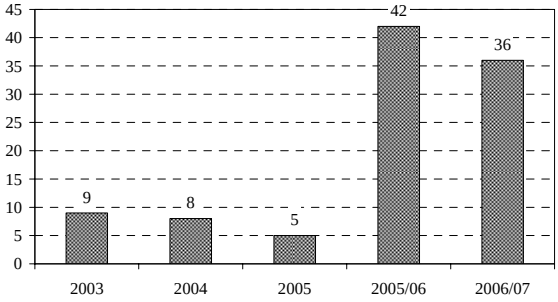


Figure II-16

Bering Sea Snow Crab Fishery, 2003-2006/07:
Average Days Fished per Vessel



Understanding the effects of crab rationalization is complicated by the fact that harvests and prices changed in both fisheries during the first two years of rationalization. These resulted in changes in both the value of the fisheries and in the effort to required to harvest the catch.

For the purposes of this report, the most important and dramatic change in both fisheries was a dramatic consolidation in the number of vessels fishing. The number of vessels registered for the Bristol Bay Red King Crab fishery declined from an average of 248 for the three years prior to rationalization to 89 in 2005/06 and 81 in 2006/07. The number of vessels registered for the Bering Sea Snow Crab fishery declined from an average of 182 for the three years prior to rationalization to 78 in 2005/06 and 67 in 2006/07. In both fisheries, with the decline in vessel participation there was a dramatic increase in average days fished, harvest, and ex-vessel value per vessel.

Not all of the decline in vessel participation in the these fisheries is attributable to the crab rationalization program. As shown in Table II-7, of the vessels which registered for either of the two 2004/05 major BSAI crab fisheries, 155 did not register for either fishery in 2005/06. Of these 155 vessels, 23 were "bought out" under the buyback program. In addition, one boat was lost at the start of the 2004/05 Bering Sea Snow Crab season. The remaining 131 boats which did not register left the crab fishery for other reasons—presumably associated with crab rationalization. Based on this reasoning, crab rationalization accounted for about 85% of the decline between the 2004/05 and the 2005/06 seasons in the number of vessels registering for the Bristol Bay Red King Crab season, and 99% of the decline in the number of vessels registering for the Bering Sea Snow Crab season.[5]

Table II-7
Reasons for Changes in Fishery Participation Between 2004/05 and 2005/06

				Did not register in 2005/06					
		Registered in 2004/05	Also registered in 2005/06	Total	Bought out	Lost during 2004/05 season	Other reasons (presumably rationalization)	*% bought out or lost*	*% other reasons (presumably rationalization)*
All vessels	Either fishery	254	99	155	23	1	131	*15%*	*85%*
	Bristol Bay Red King Crab	251	89	162	23	1	138	*15%*	*85%*
	Bering Sea Snow Crab*	169	76	97	0	1	96	*1%*	*99%*

*Four vessels registered for the Bering Sea Snow Crab fishery in 2005/06 which had not registered in 2004/05.

As noted in the previous chapter, a challenge in estimating the effects of rationalization—especially over longer periods of time—is that we can't assume that the crab fishery would have stayed the same if rationalization hadn't happened, providing the same number of crab fishing jobs. Rather, it is likely that some consolidation (and accompanying job losses) would have occurred over time. Thus the fleet consolidation observed in the first year of rationalization may overstate the actual effects of rationalization on fleet size—particularly over the longer term.

[5] The buyout was implemented prior to 2004/05 Bering Sea Snow Crab season, which began in January 2005. As a result, the buyout did not account for any of the decline in the Bering Sea Snow Crab fleet between the 2004/05 and 2005/06 seasons, although it did account for a significant decline in participation from the prior 2003/04 season.

Effects of Rationalization on Bering Sea Crab Fishing Jobs

For this study, we use the term "job" to refer to a job on a BSAI crab fishing boat—regardless of the length of the season. The job includes not only days fishing but also days traveling to and from the fishing ground and days working before and after the season. Prior to rationalization, BSAI crab fishing jobs were relatively short-term jobs, lasting a few weeks of very hard work. With rationalization crab fishing jobs last longer. How long they last varies because boats vary in how much quota they catch and how long they fish for it.

We do not have data on the average number of people working on board Bering Sea crab boats, either before or after rationalization. Discussions with fishermen suggest that most Bering Sea crab boats fish with either 5 or 6 people working on board (captain and crew total). For the following simple analysis we assumed an average of 5.5 crab fishing jobs per boat.

Given this assumption, the decline in the number of boats fishing between 2004/05 and 2005/06 resulted in a loss of 891 total jobs in the Bristol Bay Red King Crab fishery and 462 jobs in the Bering Sea Snow Crab fishery. Adjusting for the percentage of the decline in vessel participation attributable buyback and vessel loss, the first year of rationalization resulted in an estimated loss of 757 total jobs in the Bristol Bay Red King Crab fishery and an estimated loss of 457 total jobs in the Bering Sea Snow Crab fishery.

Table II-8

Estimated Job Losses in Major BSAI Crab Fisheries Between 2004/05 and 2005/06

		Bristol Bay Red King Crab Fishery	Bering Sea Snow Crab Fishery
Number of vessels	2004/05	251	164
	2005/06	89	80
	Change	-162	-84
Estimated fishing jobs	2004/05	1381	902
	2005/06	490	440
	Change	-891	-462
% of job losses attributable to rationalization*		85%	99%
Estimated job losses due to rationalization		**757**	**457**

Note: Assumes average of 5.5 jobs per vessel. *Based on percentage of vessels not registering in 2005/06 for reasons other than buyback or vessel loss (see Table II-7 for derivation). Totals may not add exactly due to rounding.

Preliminary data suggest that the number of vessels participating in the Bristol Bay Red King Crab fishery and the Bering Sea Snow Crab fisheries fell further by 8 and 11, respectively, between the 2005/06 and 2006/07 seasons (Tables II-5 and II-6). This suggests that the number of jobs in these two fisheries fell further by about 44 and 60, respectively, during the second year of rationalization.

These estimates of job losses attributable to rationalization are only rough estimates. The basic point, however, is clear. The dramatic consolidation in the number of boats participating in the

rationalized BSAI crab fisheries resulted in a corresponding dramatic reduction in the number of people working in the fishery—a loss of many hundreds of crab fishing jobs.

Although rationalization caused a dramatic decline in the number of crab fishing jobs, the remaining jobs lasted longer. According to Alaska Department of Fish and Game estimates (Tables II-5 and II-6) the average number of "days fished" in the Bristol Bay Red King Crab fishery increased from 4 days in the three years prior to rationalization to 26 days in 2005/06 and 21 days in 2006/07. The average number of "days fished" in the Bering Sea Snow Crab fishery increased from 7 days in the three years prior to rationalization to 42 days in 2005/06 and 36 days in 2006/07.

In an earlier study done for the City of Kodiak,[6] after adjusting for assumptions about days in port and in transit to and from the fishing grounds, we estimated that the loss in crab fishing jobs was approximately offset by the increase in days worked per job. Thus the effect of crab rationalization was that a much smaller number of people worked at jobs which lasted a much longer period of time, and did about the same total amount of work in about the same total number days.

After rationalization, some boats which had fished for BSAI crab in earlier seasons switched to other fisheries—in effect creating new jobs in those fisheries, and reducing the total job losses attributable to rationalization. Data are not available for how many former crab boats fished in other fisheries during crab seasons, and we have not estimated how many new jobs may have been created in other fisheries.

Effects of Rationalization on Earnings of Captains and Crew

Although the total amount of work and the total number of days worked in BSAI crab fisheries may have remained about the same after rationalization, this does not mean that Bering Sea captains and crew continued to earn the same amount from working in the fishery. It is likely that the share of the value of total ex-vessel value paid to captains and crew declined significantly.

Prior to rationalization, most captains and crew were paid a share of net earnings after deducting taxes and costs of fuel and bait, with subsequent further deductions for costs of groceries. How payments were calculated varied from boat to boat. In the first season of rationalization, a share system remained in place on most crab vessels, but with an important change. Of those vessels which fished, many fished for not only their own quota, but also additional quota leased from other vessel owners. On most vessels the lease payments to other vessel owners were deducted from gross earnings before calculating share payments to captains and crew.

In the Bristol Bay Red King Crab fishery, the typical quota lease rate was about 70% of ex-vessel value after taxes. In the Bering Sea Snow Crab fishery, the typical lease rate was about

[6]Gunnar Knapp, *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis*, prepared for the City of Kodiak, June 2006. www.iser.uaa.alaska.edu/iser/people/knapp.

50% of ex-vessel value after taxes. Deducting this large share of ex-vessel value before calculating share payments meant that captains and crew received a much smaller share of ex-vessel value for that portion of the vessel's catch for which the quota was leased.

How much quota leasing occurred, what quota lease rates were, and how they affected payments to captains and crew are complicated issues that are well beyond the scope of this study. In our earlier study for the City of Kodiak, we modeled costs and payments to captains and crew on a hypothetical crab fishing vessel. The greater the share of leased quota fished by the vessel, the lower the share of captains and crew in total earnings projected by the model. Based on this model, we estimated that in the first year of rationalization, payments to captains and crew might have declined from about one-third to about one-fifth or less of the ex-vessel value of the Bristol Bay Red King Crab fishery.

These should be considered very rough estimates; more and better data would be needed to develop more precise estimates.[7] The important point, however, is that even if the number of days worked in BSAI crab fisheries remains similar to what it was before rationalization, the total earnings of captains and crew are likely considerably smaller. Most of the people working longer seasons in the rationalized crab fisheries are probably not earning correspondingly higher incomes.

[7] Over time it is likely that how crab fishermen are paid will continue to change in the Bering Sea crab fisheries as rationalization continues. Some factors may tend to raise the share of ex-vessel value paid to captains and crew. As former crab fishermen find other jobs, fewer will be looking for crab jobs, and this may put upward pressure on average crew shares or daily earnings. Other factors may tend to lower the share of ex-vessel value paid to captains and crew. With boats fishing for known quota volumes, captains and crew may be willing to work for lower average shares. With less pressure to catch crab fast, some vessels may not be willing to pay as much for highly skilled crew.

III. OVERVIEW OF STUDY COMMUNITIES

In this chapter we briefly describe the three study communities of King Cove, Akutan and False Pass. Our purpose is to not to provide a full socio-economic description of these communities, but rather to provide context for our subsequent discussion of the role of fisheries in these communities and the effects of rationalization programs.[8]

King Cove

King Cove is situated at the western end of the Alaska Peninsula on its Pacific side, 625 air miles southwest of Anchorage. It is accessible by boat as well as by aircraft. It is incorporated as a first-class city. Major economic activities include a large seafood processing facility operated by Peter Pan Seafoods, Inc., commercial fishing, a boat harbor, local government and the school.

As discussed below, although the processing plant is located in the center of the community and is by far the largest employer in King Cove, it is in some ways separate from the local resident community. Most of the processing workers are not long-term local residents, but rather live in group housing at the processing plant. Similarly, relatively few long-term local residents work at the processor; they tend rather to identify themselves as fishermen (Reedy-Maschner 2004).

History

Like many of today's centers of population in the Aleutians, King Cove was populated by a consolidation of area villages and by the presence of Euro-American commercial activity, first in fur-trading and later in salmon and codfish fishing and processing. One such entrepreneur and the community's namesake, Robert King, settled in present-day village site with an Aleut wife from the neighboring village of Belkofski in the 1880s. In 1911, Pacific American Fisheries built a salmon cannery in King Cove and its presence was the impetus for its settlement by Scandinavian and German fishermen as well as local area Aleut. Pacific American became Pacific Alaska Fisheries and then merged with Peter Pan Seafoods in 1971. By 1995, Peter Pan had merged with the Japanese Nichiro Pacific Ltd. Corporation as the major shareholder in the company.

Population

The people in King Cove at any given time may be broadly divided into two different groups. One group is the resident community--people who consider King Cove their home. This group includes people of all ages, many of whom have lived in King Cove for much or all of their lives. Although some work for the processing plant, most make their living in other ways.

The other group consists of processing workers who live in group housing at the processing plant. All of these people are working age. Most of them stay in King Cove for at most a few months

[8] More detailed descriptions of these communities may be found in the Alaska Division of Community Advocacy's "Community Online Database" at www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm, and in EDAW, Inc. with Northern Economics, *Comprehensive Baseline Commercial fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska* (2005).

or years. They do not have families with them. Most would not consider King Cove to be their home.

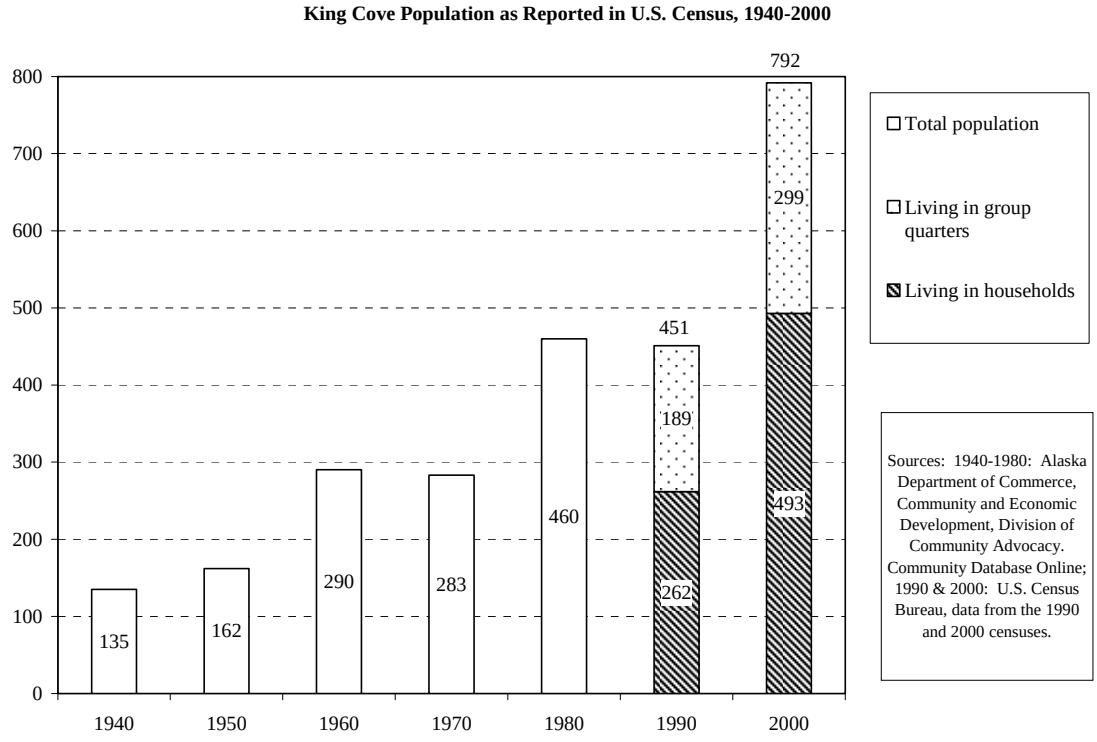
Almost all of the impacts of crab rationalization have been experienced by the resident community. The *relative* impacts of crab rationalization—on income and employment, and by other measures—are greater when considered for the resident community than for the King Cove population as a whole.

The number of processing workers in King Cove varies over the course of the year, depending on what fisheries are underway and the volume of processing that is occurring. As a result, the total number of people present in the community varies over the course of the year. This in turn complicates the problem of measuring and describing the relative numbers of residents and non-resident processing workers.

The best indicators of long-term trends in population are the decennial census figures. As shown in Figure III-1, the population of King Cove, as reported by the U.S. census, grew from 135 in 1940 to 792 in 2000. In 2005 the population was estimated by the State Demographer at 723.

The 1990 and 2000 censuses collected data on the number of people living in group housing and the number of people living in households. These two figures provide approximate indicators of the "processing worker population" and the "resident community population" at the time these censuses were taken.

Figure III-1



Defined in this way, as shown in Figure III-1, the "processing worker community" consisted of about 189 persons in 1990 and about 299 persons in 2000, while the "resident community" consisted of about 262 persons in 1990 and about 493 persons in 2000.[9]

Processor Housing in King Cove

[9] Note that these population data count only those processing workers living in group quarters who were in the community on the day on which the census was taken.

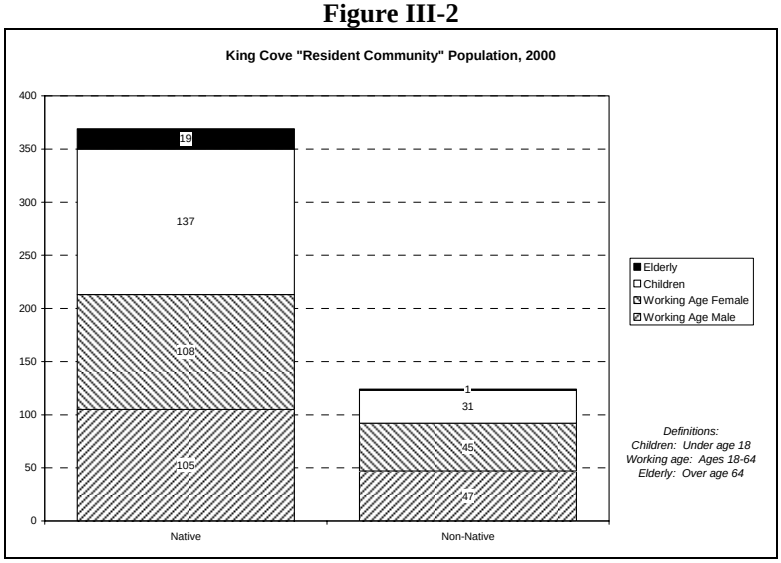
Table III-1 and Figure III-2 provide a more detailed overview of these two communities by race and age in 2000. The "resident community" population was 75% Native, of whom 168 were under age 18, 305 were between 18 and 64, and 20 were 65 or older.

Table III-1
Overview of King Cove Population, 2000

"Community"	"Resident Community"	"Processing Worker Community"	King Cove Total
Included persons	Persons living in households	Persons living in group quarters	All persons
Total population	**493**	**299**	**792**
17 or younger	168	1	169
Age 18-64: Total	305	294	599
Age 18-64: Male	*152*	*225*	*377*
Age 18:64: Female	*153*	*69*	*222*
65 or older	20	4	24
Native*	**369**	**1**	**370**
17 or younger	137	0	137
Age 18-64: Total	213	1	214
Age 18-64: Male	*105*	*1*	*106*
Age 18:64: Female	*108*	*0*	*108*
65 or older	19	0	19
Non-Native*	**124**	**298**	**422**
17 or younger	31	1	32
Age 18-64: Total	92	293	385
Age 18-64: Male	*47*	*224*	*271*
Age 18:64: Female	*45*	*69*	*114*
65 or older	1	4	5
% Native	75%	0.3%	47%
% Non-Native	25%	99.7%	53%

*"Native" refers to persons classified by the census as "Amerian Indian and Alaska Native alone." "Non-Native" refers to all other persons. Note that "Non-Native" includes 9 persons who listed themselves as being of two or more races, of which one was "American Indian and Alaska Native."
Source: U.S. Census Bureau data.

Figure III-2



Economy

King Cove's economy is dominated by fish harvesting and processing. King Cove residents have been actively involved in both fish harvesting and processing since the community's founding. However, in recent years, long-term residents have participated primarily in fish harvesting rather than the processing industry, and identify themselves as fishermen (Reedy-Maschner 2004).

There is no comprehensive source of data for King Cove employment and income by industry over time. However, several different data sources provide a general indicator of the structure of the King Cove economy and the significance of fishing and fish processing to the King Cove economy.

The most detailed recent overview of King Cove employment was provided by the 2000 U.S. census. A significant drawback of the census data is that they only show employment during the reference week of the census (one week between January and April, seven years ago). Seasonal fishing jobs at other times of the year—such as salmon fishing and most crab fishing--were not counted in the census employment data.

Of total King Cove employment of 450 estimated from the 2000 U.S. census, the "manufacturing" industry accounted for 264 jobs, or 59% of all jobs (Table III-2). This shows the dominant role of the Peter Pan Seafoods, Inc (PPSI) fish processing plant in the economy of King Cove. As many as 500 people work at the plant during peak summer and winter seasons (see the box on the following page).

Table III-2
Employment by Industry Reported by the 2000 U.S. Census: King Cove
(Includes only jobs at which people were working during the reference week)

Industry	Male	Female	Total	% of Subtotal	
Fishing	**20**	**7**	**27**	**15%**	**15%**
Wholesale trade	26	8	34	18%	27%
Retail trade	2	15	17	9%	
Construction	7	0	7	4%	26%
Transportation and warehousing, and utilities:	6	7	13	7%	
Finance, insurance, real estate and rental and leasing:	2	0	2	1%	
Professional, scientific, management, administrative, and waste management services	3	6	9	5%	
Arts, entertainment, recreation, accommodation and food services	1	6	7	4%	
Other services (except public administration)	2	8	10	5%	
Educational, health and social services	2	38	40	22%	32%
Public administration	13	7	20	11%	
SUBTOTAL EXCLUDING MANUFACTURING	**84**	**102**	**186**	**100%**	**100%**
Manufacturing	215	49	264		
TOTAL	**299**	**151**	**450**		
Manufacturing share of total	*72%*	*32%*	*59%*		

Note: "Fishing" is assumed to be all jobs reported for "Agriculture, forestry, fishing and hunting."
Source: Census 2000 Summary File 3 (SF 3) - Sample DataP49 (Sex by Industry for the Employed Civilian Population 16 Years and Over). Note: Data are based on a sample of households. Totals may not add exactly due to rounding.

According to the 2000 census, excluding "manufacturing" there were 186 jobs in King Cove in all other industries (Table III-2). Fishing accounted for 27 jobs, or 15% of all non-manufacturing employment—but note that this is an estimate of fishing jobs during a week in winter, and excludes employment during the salmon and crab seasons. Public administration and "educational health and social services" jobs accounted for 33% of non-manufacturing employment, and wholesale and retail trade accounted for 27% of non-manufacturing employment.

Peter Pan Seafoods, Inc. King Cove Plant

(Source: Peter Pan Seafoods website: www.ppsf.com/facilities/index.aspx)

King Cove, located 600 air miles SW of Anchorage at the end of the Alaska Peninsula is home to Peter Pan's largest processing facility. King Crab, bairdi and opilio tanner crab, pollock, cod, Salmon, halibut and black cod harvested in both the Bering Sea and the Gulf of Alaska are processed throughout the year. The plant, with origins back to the early 1900's, has the largest salmon canning capacity of any plant in Alaska. All five species of salmon are abundant in the waters nearby King Cove. Salmon still remains a major part of the annual operation but in recent years the plant has expanded and streamlined whitefish operations. The plant produces several different product forms including pollock fillet block, shatterpack fillets, mince and surimi. Cod shatterpack fillets and salt cod are mainstays. At peak seasons, both winter and summer, nearly 500 employees man the operation.

Counts of the number of King Cove residents holding commercial fishing permits or crew licenses (Table III-3) suggest that the fishing was much more important to the economy of King Cove than suggested by the census employment data. In 2000, 62 King Cove residents (individuals with King Cove addresses) held commercial fishing permits, and another 165 held crew licenses. While some of the crew licenses were doubtless held by children, and many permit holders and crew may have worked for only part of the year (for example, in a seasonal salmon fishing operation), these data suggest that a substantial fraction of the King Cove resident population (estimated above at 493) participated in commercial fishing.

Table III-3
Number of Residents Holding Permits or Crew Licenses, 2000-2005: King Cove

Year*	2000	2002	2003	2004	2005
Permit holders	62	55	55	54	57
Crew	165	108	110	120	73
Total	227	163	165	174	130

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

The 2006 King Cove household survey provides another indicator of the importance of commercial fishing to the economy of King Cove (Table III-4). In 65% (two-thirds) of all households surveyed, a household member had fished commercially within the past five years. Among longer-term residents—those in which the person responding to the survey for the household had lived in King Cove for 20 or more years—77% of all households reported that a household member had fished commercially within the past five years.

Table III-4
King Cove Household Survey Responses:
Has anyone in this household fished commercially in the past five years?

		Reponses			Percent of Responses	
		Yes	No	Total	Yes	No
All households		88	48	136	65%	35%
Length of residence in King Cove (years)	0-9	6	20	26	23%	77%
	10-19	2	4	6	33%	67%
	20-29	25	10	35	71%	29%
	30-39	22	3	25	88%	12%
	40-49	15	4	19	79%	21%
	50-59	7	1	8	88%	13%
	60-69	9	3	12	75%	25%
	70-79	2	3	5	40%	60%
	Less than 20	8	24	32	25%	75%
	20 or more	80	24	104	77%	23%

Chapter IV of this report provides more detailed information about trends in fishery participation in King Cove, and the relative importance of different fisheries.

In addition to fish processing and fishing, a number of local businesses derive much or all of their income from providing supplies and services to the fishing industry. We may refer to these businesses as the fishing support sector. Based on our discussions with community residents, King Cove fishing support sector businesses include (but are not necessarily limited to):

MARINE SERVICES

- City of King Cove Harbor (operated by the City of King Cove, which collects fees for moorage and transportation of pots across the dock)
- Mack Trucking (crab pot hauling)
- Warren Wilson Welding
- Two independent boat watch operations

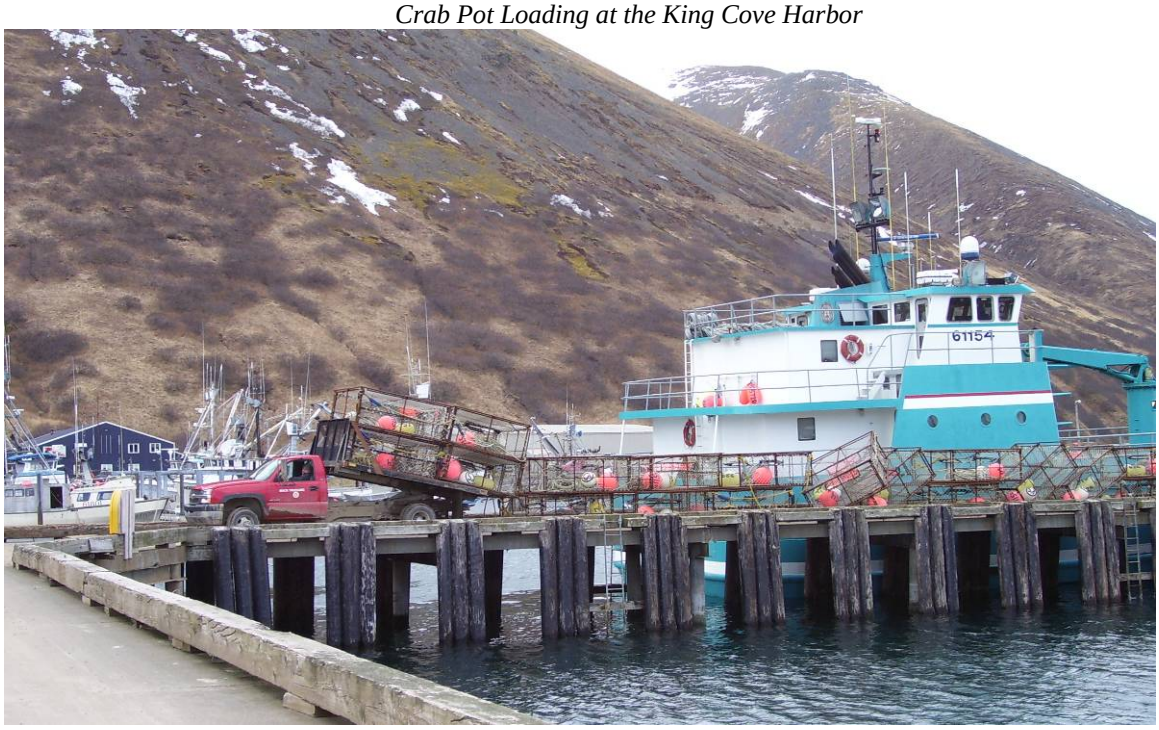
STORES

- Peter Pan Sales (operated by Peter Pan Seafoods, Inc.; operations include fuel, company store, hardware, and custom processing)
- Alaska Commercial Company Store
- Gould's Store
- Marine Filter Sales

RESTAURANTS, BARS & TAXI SERVICES:

- King Cove China Restaurant
- Fleets Inn (owned by King Cove Corporation
- Last Hook-off Bar (owned by King Cove Corporation)
- MC's Bar
- My Cab

Crab Pot Loading at the King Cove Harbor



Subsistence

King Cove's informal (non-cash; subsistence) economy consists of subsistence harvest for salmon, halibut, crab and other invertebrates, cod, caribou, geese and ptarmigan. ADFG's subsistence community database defines community subsistence activities by percentage of households using, trying, harvesting, receiving and giving subsistence foods. These data demonstrate a high level of usage of fish, marine invertebrates and vegetation by King Cove residents. Participation in harvest is greatest for fish (97% of households) and marine invertebrates (94% of households).

Government

Traditionally, in the early years of the community, political power in King Cove was negotiated between an informal chief, the cannery superintendent and a representative of the BIA school. King Cove was incorporated as a 2nd class city in 1952 and a 1st class city in 1974 which enabled it to collect sales tax (Black and Jacka 1999).

Today there is a six-member city council which is comprised of long-term community local residents and presided over by a mayor who is a King Cove local and a member of one of the community's leading families. The City Administrator is a hired professional based in Anchorage. Unlike several other communities in the BSAI area, the processor in King Cove is not regularly politically represented within the city council structure although the plant managers attend its meetings.[10]

King Cove Russian Orthodox Church

[10] Over the past 17 years one processor employee has served a term on the Council (personal communication, King Cove City Administrator). Recently, a local resident who is a retired long-term employee of the processor was elected to the Council.

Fisheries-based taxes account for a significant share of City of King Cove revenues. The City of King Cove collects a 2% fish tax and also receives a share of revenues collected by the state-administered fisheries business tax and fishery resource landing tax.[11] All of these taxes are based on the ex-vessel value of landings in King Cove, and are thus affected by both the volume of fishery landings as well as ex-vessel prices.[12]

In addition to the taxes described above, which are based on the value of landings, the City of King Cove also collects a Fish Processing Business Tax. The fish processing business tax is based on the weight of fish processed. The City establishes an annual rate of levy per pound of fisheries resources in order to collect a target revenue goal, which has ranged between $75,000 and $100,000 since the tax was enacted in 2002.

Table III-5
City of King Cove Revenues

		FY02	FY03	FY04	FY05	FY06
Revenue ($)	**Total Revenue**	**$1,289,410**	**$1,538,301**	**$1,730,341**	**$1,913,636**	**$2,496,002**
	Revenues based on ex-vessel value of landings	**$718,463**	**$811,292**	**$952,216**	**$1,153,446**	**$1,468,670**
	City of King Cove 2% fish tax	$376,836	$603,561	$716,118	$795,313	$1,064,357
	Sharing of State of Alaska fisheries business tax	$318,188	$184,041	$211,092	$326,453	$365,638
	Sharing of State of Alaska fishery resource landing tax	$23,439	$23,690	$25,006	$31,680	$38,675
	All other revenues	**$570,947**	**$727,009**	**$778,125**	**$760,190**	**$1,027,332**
	Non-fish sales taxes	$272,537	$322,627	$506,140	$563,103	$620,576
	Other*	$298,410	$404,382	$271,985	$197,087	$406,756
Share of total revenue	**Total Revenue**	**100%**	**100%**	**100%**	**100%**	**100%**
	Revenues based on ex-vessel value of landings	**56%**	**53%**	**55%**	**60%**	**59%**
	City of King Cove 2% fish tax	29%	39%	41%	42%	43%
	Sharing of State of Alaska fisheries business tax	25%	12%	12%	17%	15%
	Sharing of State of Alaska fishery resource landing tax	2%	2%	1%	2%	2%
	All other revenues	**44%**	**47%**	**45%**	**40%**	**41%**
	Non-fish sales taxes	21%	21%	29%	29%	25%
	Other*	23%	26%	16%	10%	16%

*Includes Fish Processing Business Tax. Source: City of King Cove.

As shown in Table III-5, in FY06 revenues based on the ex-vessel value of landing accounted for $1.468 million out of total City of King Cove revenues of $2.496 million, or 59% of total city

[11] The fisheries business tax is levied on businesses that process or export fisheries resources from Alaska. Although the tax usually is levied on the act of processing, the tax is often referred to as a "raw fish tax" because it is based on the value of the raw fishery resource. Tax rates vary from 1% to 5%, depending on whether a fishery resource is classified as "established" or "developing," and whether it was processed by an on-shore or floating processor. The fishery resource landing tax is levied on fishery resources processed outside and first landed in Alaska, and is based on the unprocessed statewide average value of the resource. The tax is collected primarily from factory trawlers and floating processors that process fishery resources outside the state's 3-mile limit and bring their products into Alaska for shipment. The tax rates vary from 1% to 3%, based on whether the resources classified as "established" or "developing." All revenue derived from both taxes is deposited in the General Fund. Fifty percent of the revenue (before credits) is shared to qualified municipalities, ands treated as restricted in this forecast.. (Alaska Department of Revenue, Tax Division, *Fall 2006 Revenue Sources Book*, page 48).

[12] In addition to taxes collected by the City of King Cove and the State of Alaska, the Aleutians East Borough also collects a fish tax of 2% of the ex-vessel value of landings.

revenues. Between FY02 and FY06, fisheries-based taxes accounted between 53% and 60% of city revenues.

A 4% tax on non-fish sales accounts for the largest share of non fisheries-based tax revenues for the City of King Cove. Of this, Peter Pan Sales (PPSF's fuel sales, company store, hardware and custom processing operations) account for by far the largest share—more than half--of non-fish sales tax revenues**.**

In recent years, crab has accounted for about one-third of the ex-vessel value of fishery landings in King Cove. Correspondingly, crab has accounted for about one-third of the value of King Cove fisheries-related revenues and about one-fifth of total city revenues.

Harbor

There are two harbors in King Cove. The older harbor primarily serves the local fleet, consisting mostly of vessels less than 60 feet in length, and holds a peak of 100 to 120 fishing boats. The new harbor, which opened in 2001, was designed primarily to accommodate boats 60 feet and larger--particularly crab fishing and tender boats--and has space for as many as 40 large crab boats.

A 1997 Army Corps of Engineers planning study characterized demand for the new harbor as follows:

> "Commercial demand for expanded moorage comes from vessels currently operating in the King Cove area throughout the fishing season. . . Initial interviews with fishers, processors, and King Cove harbor personnel indicated that the tender/crabber class fleet represents the vast majority of vessels requiring moorage, both permanent and transient, at King Cove. . . An average of 92 large commercial vessels use the harbor on a transient basis each year. During the extremely busy fall months, up to 70 vessels may require space in King Cove in a single day. When skippers call the King Cove harbormaster to request docking space and are told none is available, this information is quickly circulated around the fleet, so other skippers never bother calling in. This contributes to underestimating the total number of large transients desiring space at King Cove.
>
> The transient fleet uses King Cove's harbor throughout the year for moorage during closed fishing periods, to obtain essential provisions for fishing operations, for crew rotations, and as a harbor of refuge during the area's frequent and severe storms. The fleets also use King Cove as a service center and location for short-term (several days) and long-term (3 to 4 weeks) moorage. . .

Table III-6
King Cove Transient Vessel Moorage, 1995

Vessel length	Number of vessels	Total days/year	Average days
85-100	40	337	8
101-125	37	1103	30
126-145	7	457	65
146-165	8	239	30
Total	92	2136	23

Source: King Cove Harbor Department data cited in U.S. Army Corps of Engineers, *Navigation Improvements Detailed Project Report and Environmental Assessment: King Cove, Alaska* , April 1997.

The new harbor was built at a cost of $9.4 million with funding from the U.S. Army Corps of Engineers, the State of Alaska and the Aleutians East Borough.[13]

King Cove Harbors, May 25, 2006

Source: U.S. Army Corps of Engineers, http://www.poa.usace.army.mil/co/CoOrg/p_i_book/p&ione_2006.html#Kin

[13] Harbor capacity and completion date is from the U.S. Army Corps of Engineers (www.poa.usace.army.mil/co/CoOrg/p_i_book/p&ione_2006.html). Cost information was provided by the King Cove City Administrator.

The New King Cove Harbor

The harbor operates as a department of the City of King Cove, which is obligated to maintain and operate the harbor in a financially prudent manner. The harbor collects revenues from moorage and pot storage fees. In addition, in recent years, the harbor has been supported in part by other city revenues sources, as discussed more in Chapter V.

Peter Pan Seafoods Dock

Akutan

The village of Akutan is situated on Akutan Island of the Krenitzin Islands in the Fox Island group of the Aleutian chain, 766 air miles southwest of Anchorage. It has a deep and protected bay suitable for fishing vessel moorage. It currently does not have a harbor but the Aleutians East Borough has plans to build one in Akutan in the future. By air, Akutan is accessible only by sea plane.

The resident population of Akutan is only about 80. However, Akutan also hosts the largest seafood processing facility in North America, owned by Trident Seafoods, which operates independently of village utilities and services.

Source: Google Earth

History

Historically, the present site of the village of Akutan was the center of industry for villages on the neighboring islands of Akun, Tigalda and Avatanik and the place to which the residents of these outlying villages migrated in the latter half of the 19th century and the beginning of the 20th. This pattern of village consolidation is common to all of the communities in this study.

In 1878, it was established as a fur trading post by the Western Fur and Trading Company. In 1912, it became a whale blubber and oil processing center under the Pacific Whaling Company and was unique to the region in supporting this industry. When crab fisheries were developed from as early as immediately after WWII, Akutan harbor became the site of floater processor operations and eventually the home of Deep Sea Fisheries in 1948. Trident Seafoods acquired Deep Sea's operations in 1982.

Population

For most of the century between 1880 and 1980, Akutan maintained a small local resident average population of less than 100 people; most of whom were Alaska Natives. The population reported by the U.S. census (Figure III-3) grew from 80 in 1940 to 101 in 1970 and 169 in 1980, and then grew dramatically to 589 in 1990 and 713 in 2000. All of the reported increase in

population were persons living in group quarters—presumably at the Trident Seafoods processing facility.

According to the 2000 census, the number of people living in households—a measure of the "resident community"—was 75, of whom 65 (87%) were Alaska Natives (Table III-7). The number of persons living in group quarters—a measure of the "processing worker community" was 638, of whom 47 (7%) were Alaska Natives (or potentially American Indians).

Figure III-3

Akutan Population as Reported in U.S. Census, 1940-2000

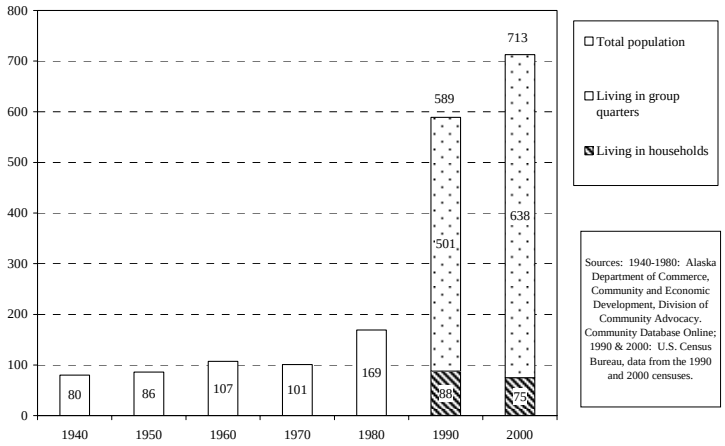


Table III-7
Overview of Akutan Population, 2000

"Community"	"Resident Community"	"Processing Worker Community"	Akutan Total
Included persons	Persons living in households	Persons living in group quarters	All persons
Total population	**75**	**638**	**713**
17 or younger	20	2	22
Age 18-64: Total	50	631	681
Age 18-64: Male	*30*	*496*	*526*
Age 18:64: Female	*20*	*135*	*155*
65 or older	5	5	10
Native*	**65**	**47**	**112**
17 or younger	20	1	21
Age 18-64: Total	40	46	86
Age 18-64: Male	*23*	*37*	*60*
Age 18:64: Female	*17*	*9*	*26*
65 or older	5	0	5
Non-Native*	**10**	**591**	**601**
17 or younger	0	1	1
Age 18-64: Total	10	585	595
Age 18-64: Male	*7*	*459*	*466*
Age 18:64: Female	*3*	*126*	*129*
65 or older	0	5	5
% Native	87%	7%	16%
% Non-Native	13%	93%	84%

*"Native" refers to persons classified by the census as "Amerian Indian and Alaska Native alone." "Non-Native" refers to all other persons. Note that "Non-Native" includes 5 persons who listed themselves as being of two or more races, of which one was "American Indian and Alaska Native."
Source: U.S. Census Bureau data.

Economy

Only limited published data are available on the economy of the resident community of Akutan. Employment data from the 2000 U.S. Census (Table III-8) suggest that transportation, utilities, public administration, education, and services account for most non-processing employment.[14]

Table III-8
Employment by Industry Reported by the 2000 U.S. Census: Akutan
(Includes only jobs at which people were working during the reference week)

Industry	Male	Female	Total	% of Subtotal	
Fishing	**2**	**0**	**2**	**3%**	**3%**
Construction	5	0	5	7%	70%
Transportation and warehousing, and utilities:	30	3	33	48%	
Arts, entertainment, recreation, accommodation and food services	3	5	8	12%	
Other services (except public administration)	0	2	2	3%	
Educational, health and social services	2	2	4	6%	28%
Public administration	9	6	15	22%	
SUBTOTAL EXCLUDING MANUFACTURING	**51**	**18**	**69**	**100%**	**100%**
Manufacturing	0	28	28		
TOTAL	**51**	**46**	**97**		
Manufacturing share of total	*0%*	*61%*	*29%*		

Note: "Fishing" is assumed to be all jobs reported for "Agriculture, forestry, fishing and hunting."
Source: Census 2000 Summary File 3 (SF 3) - Sample DataP49 (Sex by Industry for the Employed Civilian Population 16 Years and Over). Note: Data are based on a sample of 47.1% of households. Totals may not add exactly due to rounding.

Businesses operating in Akutan include the Akutan Corporation (the Native village corporation) which owns the Bayview Hotel, the Salmonberry Inn and the McGlashen store (EDAW 2004); Pelkey's Dive Service which employed five Akutan residents as divers and stevedores in 2005, and The Roadhouse Tavern. The Trident Seafoods processing facility is almost entirely self-sufficient and has relatively little interaction with the economy of the community.

Counts of the number of Akutan residents holding commercial fishing permits or crew licenses (Table III-9) provide an indication of the importance of commercial fishing to Akutan residents. In 2005 nine Akutan residents held commercial fishing permits and another eight (some of whom may have been children) held crew licenses.

[14] Note that these data are based on employment of individuals from a small sample of households during the reference week during which the census data were collected. It is unclear to what extent the data include processing plant workers who were not community residents: the reported employment of 28 women in "manufacturing" presumably includes some (but only a small percentage of) processing workers.

Table III-9
Number of Residents Holding Permits or Crew Licenses, 2000-2005: Akutan

Year*	2000	2002	2003	2004	2005
Permit holders	6	7	10	9	9
Crew	15	15	15	13	8
Total	21	22	25	22	17

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

Akutan is a CDQ-designated community and is part of the Aleutian Pribilof Island Community Development Association (APICDA) CDQ group. We discuss commercial fisheries participation of Akutan residents in greater detail in Chapter IV.

Akutan's informal (non-cash subsistence) economy consists of subsistence harvest for seal, salmon, herring, halibut, clams, wild cattle, game birds (DCED 2006). According to the Alaska Department of Fish and Game 1990 subsistence report, Akutan residents have a high level of usage for fish, marine mammals, birds and eggs, marine invertebrates and vegetation. Participation in subsistence harvest is greatest for fish (92% of households) and vegetation (96% of households). Sharing subsistence foods among households is common with 100% giving and 92% receiving, especially fish, marine mammals, birds and eggs. Participation is lower in hunting marine mammals (44% of households involved in harvesting, but with 92% using).

Government

Traditionally, the village of Akutan was governed under an Aleut chief. The last chief, Luke Sheilikoff, held the office for over 46 years (University of Alaska 1978). Today, Akutan's formal political structure is based upon two local entities: the Akutan City Council (7 members, 3-year term) and the Akutan Native Village tribal entity (5 members). The council elects a mayor for a one-year term.

Akutan is a 2nd class city incorporated under the Aleutians East Borough in 1987. The Aleutians East Borough collects 2% raw fish tax in Akutan and the city collects a 1% fish tax on fish landings. The City of Akutan does not collect a sales tax or property tax.

The City of Akutan maintains its own water, sewer and electric systems. It does not receive any revenues from the Trident processing facility for utilities because Trident is a self-contained operation with its own utility sources. The City of Akutan does share maintenance of the landfill with Trident.

Akutan

Penair "Goose" Landing at Akutan

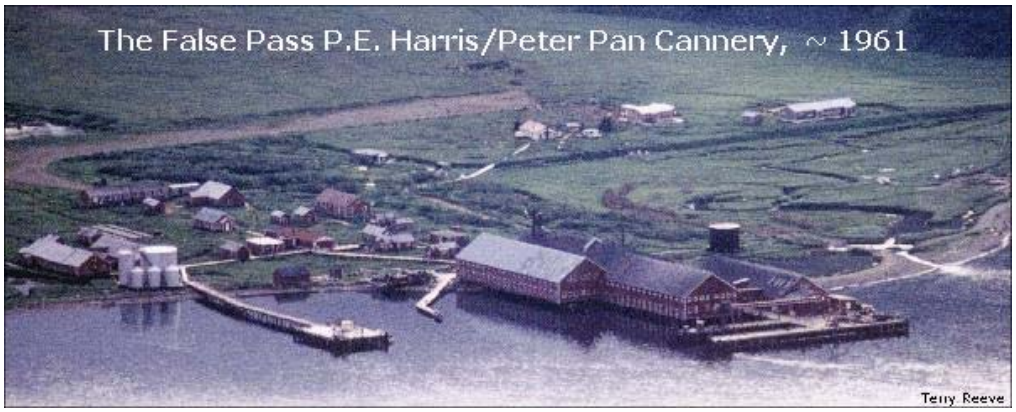
Unloading the "Goose"

False Pass

False Pass is located 646 air miles southwest of Anchorage on the eastern end of Unimak Island and on the banks of the shallow Isanotski Strait which connects the Bering Sea to the North Pacific.

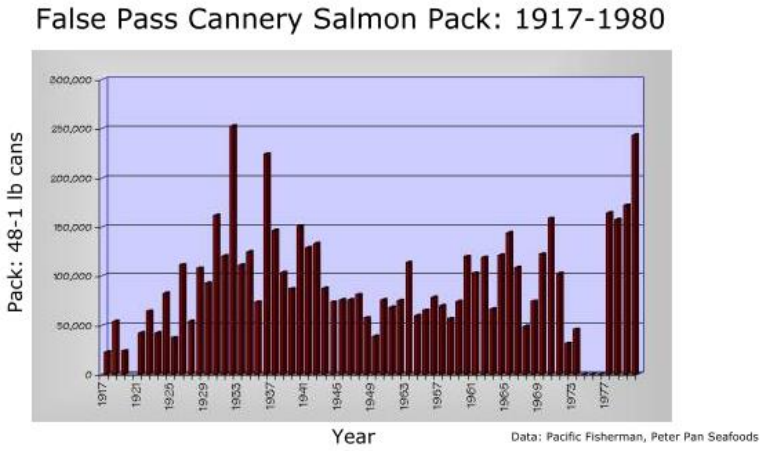
The community of False Pass was established in 1920 when P.E. Harris moved a salmon canning operation from Morzhovoi to False Pass because of the site's strategic location and the availability of a large supply of fresh water. The cannery attracted workers from neighboring Aleutian villages and a community grew around it. In 1962 the cannery facility was acquired by Peter Pan Seafoods.

Black and Jacka (1999) describe the cannery's significance to the community's existence: "The cannery is the economic center and therefore its history is a focal point of the story of False Pass."



Source: City of False Pass website.

After more than 60 years of operation, the cannery was destroyed by fire in 1981. Since that time the population of False Pass has declined as residents migrated to communities with more economic opportunities such as King Cove and Sand Point.



Source: City of False Pass website.

Population

Over the past 70 years, the estimated year-round population of False Pass has fluctuated between 40 and 90 (Figure III-1). According to the 2000 census, in 2000 the population was 64, of whom 63% were Alaska Native (Table III-10).

Figure III-4

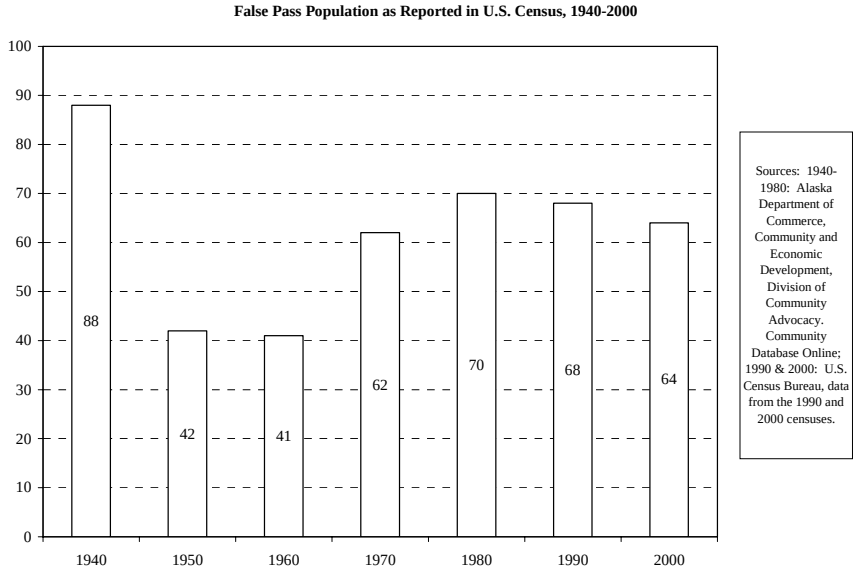


Table III-10
Overview of False Pass Population, 2000

	Native*	Non-Native*	Total
Total population	**40**	**24**	**64**
17 or younger	14	9	23
Age 18-64: Total	23	15	38
Age 18-64: Male	*11*	*9*	*20*
Age 18:64: Female	*12*	*6*	*18*
65 or older	3	0	3
Percentage of total	63%	38%	100%

*"Native" refers to persons classified by the census as "Amerian Indian and Alaska Native alone." "Non-Native" refers to all other persons. Note that "Non-Native" includes 2 persons who listed themselves as being of two or more races, of which one was "American Indian and Alaska Native."
Source: U.S. Census Bureau data.

The Alaska state demographer estimated the 2005 False Pass population as 63. However, fieldwork in False Pass identified 44 residents as the actual current population. Bill Shellikoff, a lifetime resident, estimated that 35 residents live in False Pass year-round. In addition to the year-round population, there are several individuals who have primary residences elsewhere but who come to fish for salmon in the summer.

During the winter of 2006, one False Pass family had recently moved to King Cove to be able to offer its children more educational opportunities. From the 44 who were counted during fieldwork, 16 were under the age of 20. The school had only 10 students, 5 of whom came from one family, which placed the school at risk for closing. Of greatest demographic concern was the lack of both males and females between the ages of 10-20 and the lack of residents from age 20-40.

Economy

Fieldwork during the winter of 2006 indicated that False Pass residents of working age were employed by the City of False Pass, the Isanotski Corporation (local Alaska Native Corp), the False Pass Tribal Council and the Aleutian Pribilof Islands Community Development Association (APICDA). Peter Pan Seafoods maintains a refueling station at the old cannery site and employs one individual there.

False Pass is a CDQ community, and is a member of the Aleutians Pribilof Islands Community Development Association (APICDA) CDQ group. As such, it has economic development opportunities which the community is pursuing with the hope of reinforcing the city's infrastructure, creating jobs and boosting the population.

In 2005, 6 False Pass residents held commercial fishing permits (down from 11 in 2000) and another 5 held crew licenses (down from 12 in 2000) (Table III-11). We discuss commercial fisheries participation of False Pass residents in greater detail in Chapter IV.

Table III-11
Number of Residents Holding Permits or Crew Licenses, 2000-2005: False Pass

Year*	2000	2002	2003	2004	2005
Permit holders	11	11	7	6	6
Crew	12	12	4	11	5
Total	23	23	11	17	11

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

In 2000, Bering Pacific Seafoods (a subsidiary of APICDA) brought a processor-barge, the Dipper, to False Pass to process frozen salmon. The Dipper tied up at the City Dock and housing and other facilities were built on shore nearby. After two seasons of operation, Bering Pacific Seafoods decided to suspend operations. The operation was unable to compete with other larger-volume established Alaskan salmon processors (City of False Pass website).

APICDA and Bering Pacific Seafoods subsequently planned to build a small shore-based value-added processing plant. This activity might generate local employment and a small amount of raw fish tax for the City of False Pass.

In addition to the new processor, a harbor is being built in False Pass constructed in part by federal funding and in part by both Aleutians East Borough and APICDA. Between the new

processor and new harbor, False Pass residents will be in an improved position to service fishing fleets as well as accommodate tourists who visit on the bimonthly ferry. Several community residents spoke of the excitement of when the Alaska State ferries dock during the summer, when they can sell local food and handicrafts made over the winter.

False Pass's informal (non-cash; subsistence) economy consists of subsistence harvest for salmon, halibut, caribou, seals and wild cattle on Sanak Island (DCED 2006). Locals report mainly eating salmon, halibut and cod for subsistence foods.

Government

False Pass was incorporated as a second class city in 1990 and is organized under the Aleutians East Borough. False Pass is governed by a mayor and a 7-seat city council. The city levies a 2% raw fish tax and a 3% sales tax.

False Pass

Fishing boats in False Pass, 2004

IV. FISHERY PARTICIPATION IN STUDY COMMUNITIES

Introduction

In this chapter we review available information on fisheries participation by residents of the study communities. For each community, we review available information on fishery participation from several data sources. Most of the available data are for years since 1980. However, it should be noted that residents of the study communities were actively involved in commercial fishing and processing for many decades prior to the 1980s.

We do not discuss effects of crab rationalization in this chapter. Our purpose is partly to set the stage for our analysis of effects of crab rationalization by providing an overview of the role of commercial fisheries in each community prior to rationalization. It is also to show that study community residents—particularly in King Cove--experienced significant changes in commercial fisheries in the decades prior to crab rationalization. The effects of crab rationalization cannot be understood in isolation from the effects of these broader, longer-term changes.

Salmon Gillnetters, King Cove

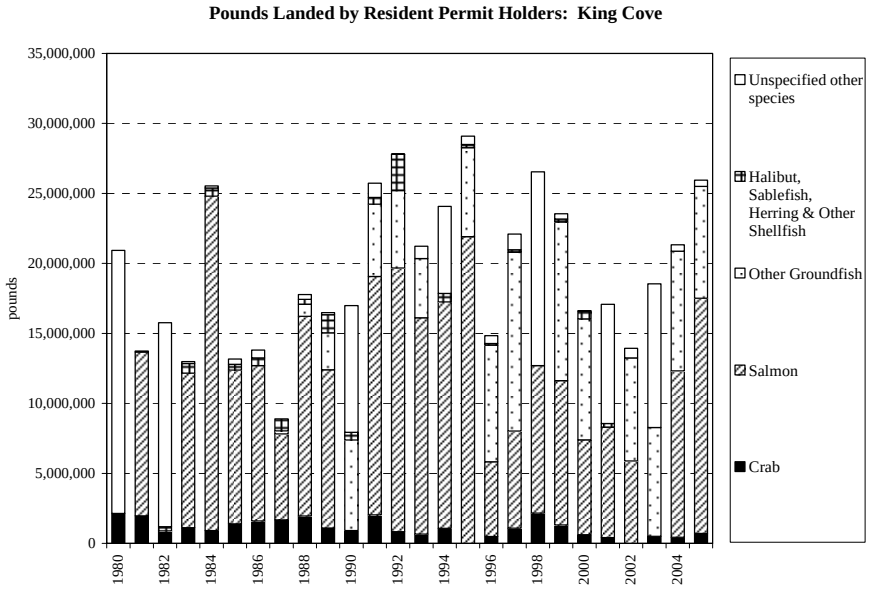
King Cove

King Cove residents have been actively involved in both fish harvesting and processing since the community's founding. However, in recent years, long-term residents have participated primarily in fish harvesting rather than the processing industry, and identify themselves as fishermen (Reedy-Maschner 2004).

Overview of Harvests and Earnings of King Cove Permit Holders

Figures IV-1 shows CFEC data for pounds landed by King Cove resident permit holders for the years 1980-2005. [15] For some years, data for some species groups are confidential. Landings for these species groups are shown in white as "unspecified other species." For example, the white portion of the data bar for 1980 includes landings of all species except for crab. The white portion of the data bar for 2003 includes landings of all species except for crab and "other groundfish" (groundfish species other than halibut and sablefish).

Figure IV-1



As can be seen in Figure IV-1, pounds landed by King Cove permit holders have varied significantly from year to year for individual species groups, as well as for total pounds landed. However, over the entire period, there was no clear upward or downward trend in total landings. In any given five year period, average landings were about the same. Total landings of crab trended downwards, while landings of "other groundfish" trended upwards. Landings of salmon were extremely variable, peaking in the mid 1990s, falling to much lower levels in the 1996-2002 period, and then increasing in 2004 and 2005. Salmon has accounted for the largest share of harvest volume by King Cove resident permit holders, followed by "other groundfish."

[15]Except where otherwise noted, data in this chapter are from the Commercial Fisheries Entry Commission "permit and fishing activity database," which is posted at www.cfec.state.ak.us/fishery_statistics/earnings.htm.

Figures IV-2a and IV-2b show estimated gross earnings of King Cove permit holders for the same species groups over the same period of time. (The two figures present the same information in two different ways.) Trends in gross earnings differ from trends in harvests because ex-vessel prices differ between species and change over time. Total gross earnings peaked in the late 1980s at more than $18 million in 1988, and averaged more than $10 million annually for the period 1984-1995. Gross earnings trended downwards after the mid-1990s, and fell to a low of $4.3 million in 2002 before rebounding to slightly under $7 million in 2004 and 2005. Most of the change in value was due to changes in gross earnings from salmon—reflecting changes in both salmon harvests and salmon prices.

Figure IV-2a

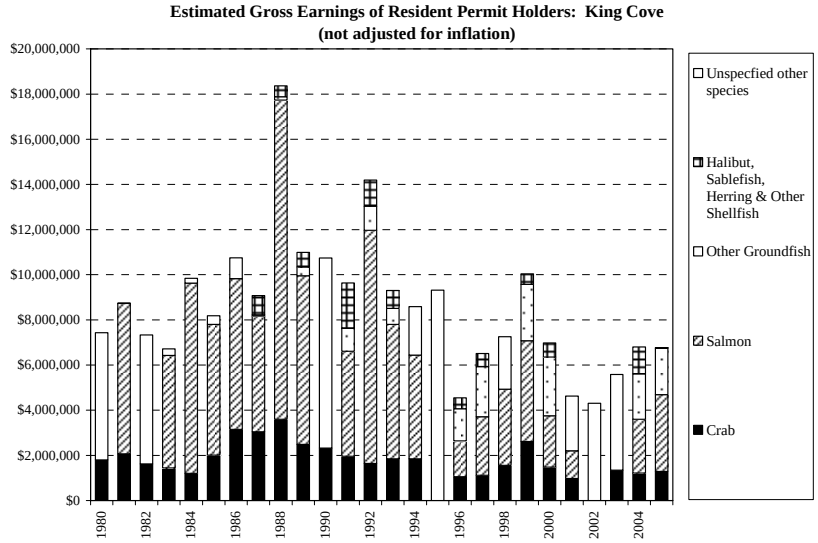
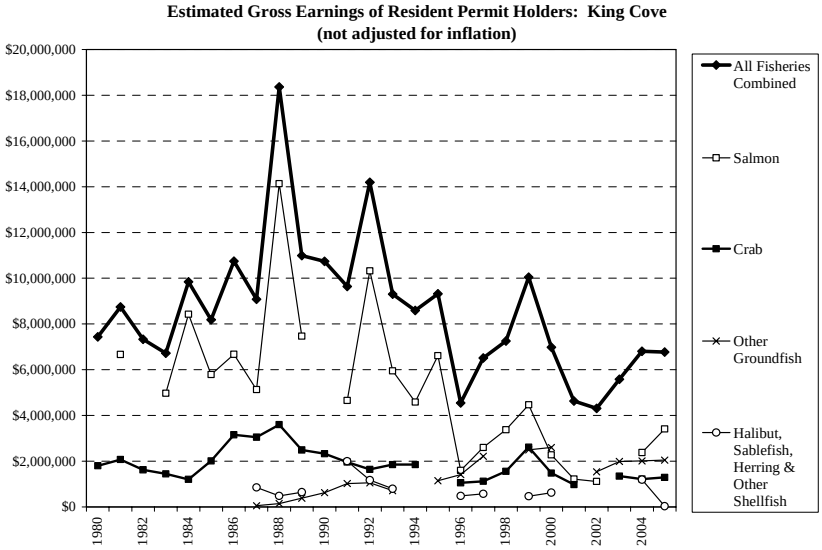


Figure IV-2b



Because crab prices are generally higher than salmon prices, crab has accounted for a relatively larger share of King Cove permit holders' gross earnings than of harvest volume. Over the period

1980-2005 crab accounted for an average of 22% of gross earnings, with a low of 12% or gross earnings in 1992 and a maximum of 34% of gross earnings in 1987.

Figures IV-3a and IV-3b present the same data gross earnings data as Figures IV-2a and IV-2b, adjusted for inflation. After adjusting for inflation, it is clear that gross earnings of King Crab permit holders have declined dramatically since the 1980s, driven particularly by lower earnings from salmon and crab.

Figure IV-3a

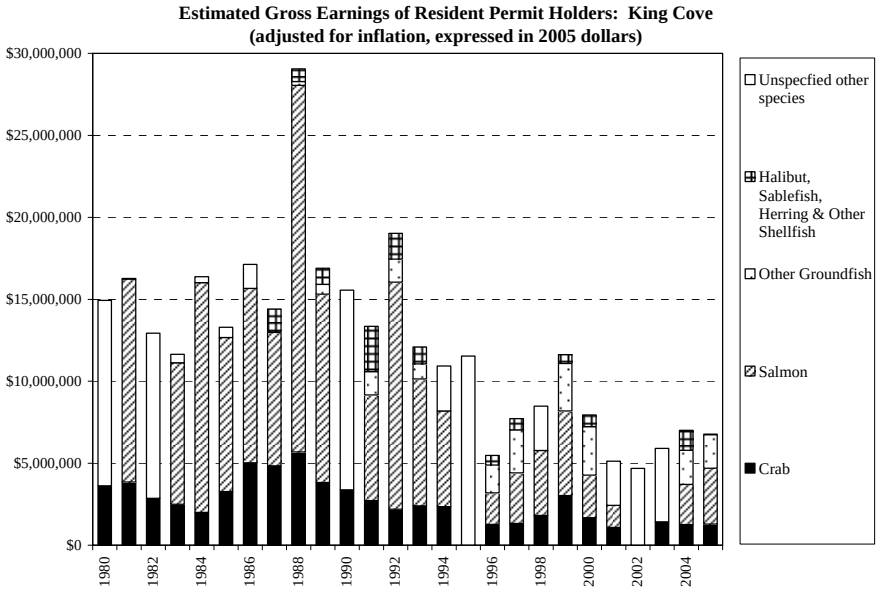
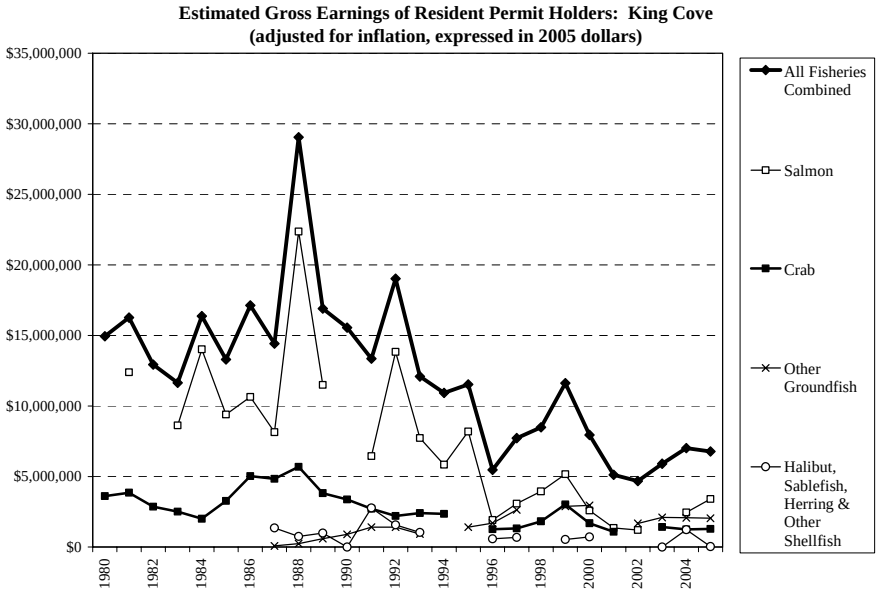


Figure IV-3b

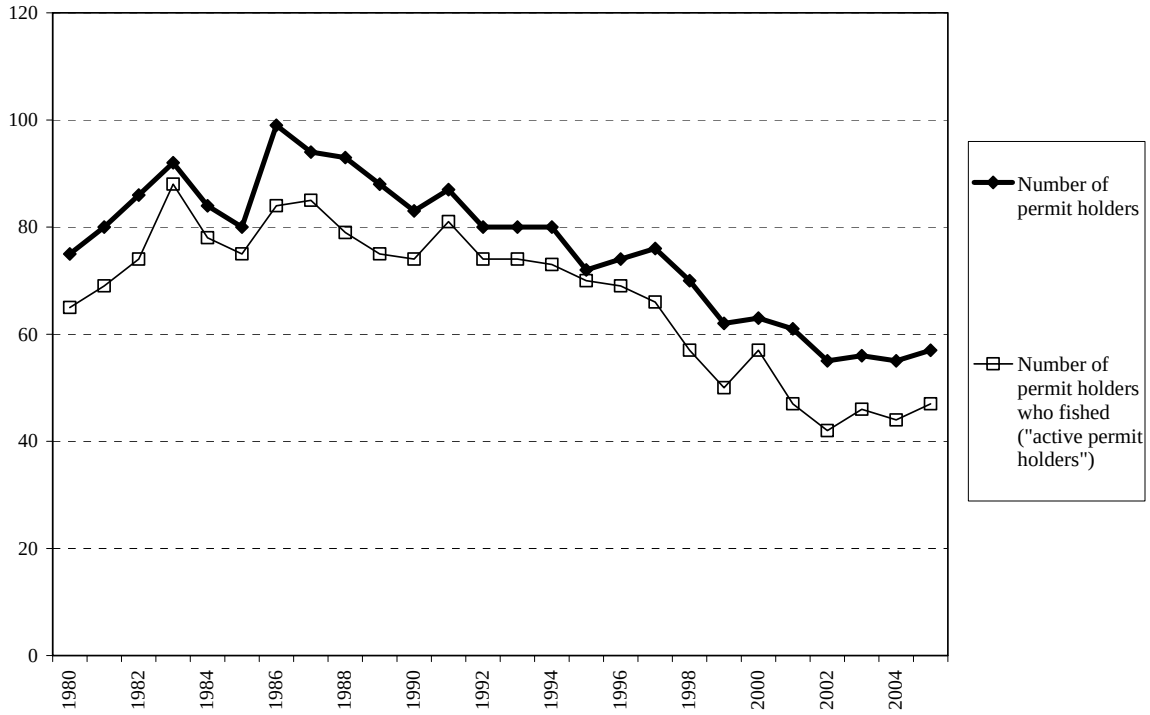


Overview of Trends in King Cove Permit Holdings

Figure IV-4 shows, for the years 1980-2005, the number of individuals in King Cove who were permit holders in one or more fisheries, as well as the number of fishermen who fished one or more permits.[16] The number of fishermen who fished is less than the number of permit holders because in any given year some permit holders do not fish their permits. In the subsequent discussion we focus on the number of fishermen who fished, whom we refer to as "active permit holders." There has been a clear and significant downward trend in the number of active King Cove permit holders since the early1980s--from a peak of 88 in 1983 to 47 in 2005.

Figure IV-4

Number of Permit Holders and Permit Holders Who Fished: King Cove

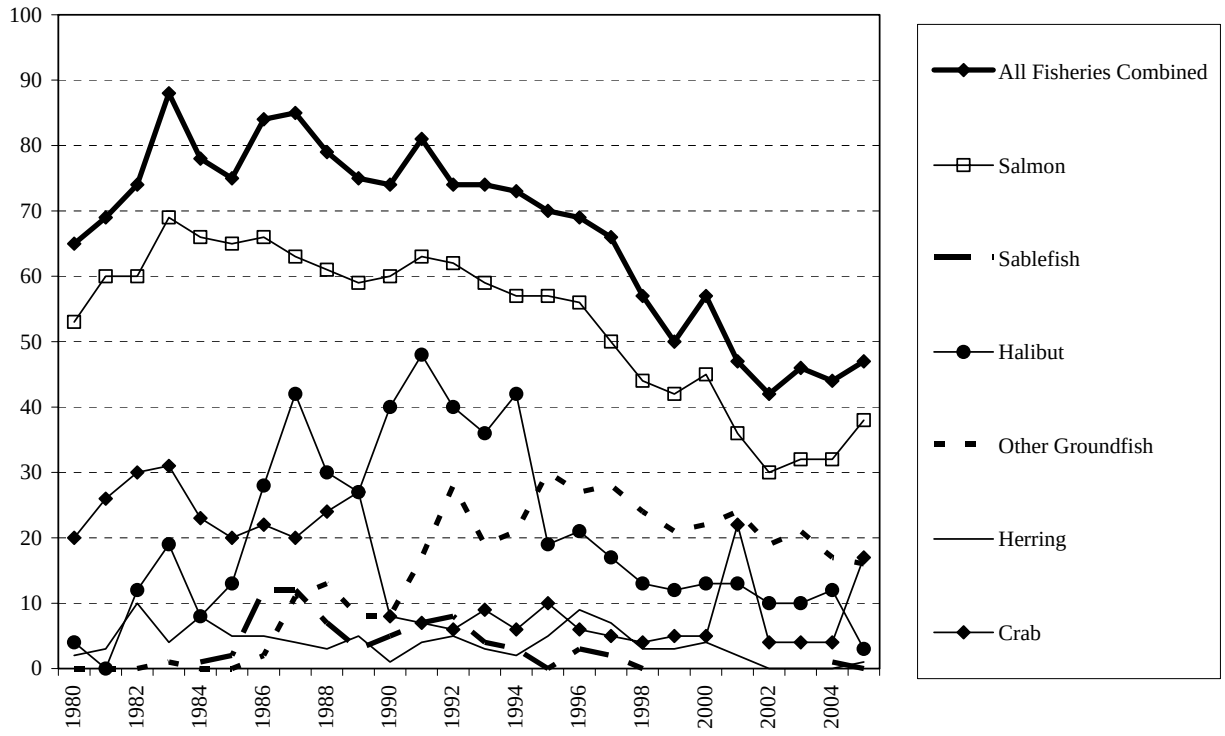


[16] "Number of permit holders" is a count of current holders of the permits as of the end of the year. "Number of fishermen who fished" is the number of fishermen who made at least one landing as a permit holder. Note that in cases where a permit has been transferred, more than one person may have fished the same permit.

Figure IV-5 shows trends in the number of active permit holders by species group. Note that the same individuals may be active permit holders in multiple fisheries. Over the entire period 1980-2005, salmon fisheries accounted for the largest number of active permit holders. The number of active salmon permit holders was only slightly lower than number of active permit holders in all fisheries combined--suggesting that most individuals who were active permit holders in other fisheries were also active permit holders in salmon fisheries. Since the mid-1990s, "other groundfish" fisheries have generally accounted for the second largest number of active permit holders, followed by halibut and crab.

Figure IV-5

Number of Active Permit Holders, by Fishery Group: King Cove



Trends in King Cove Salmon Permit Holdings

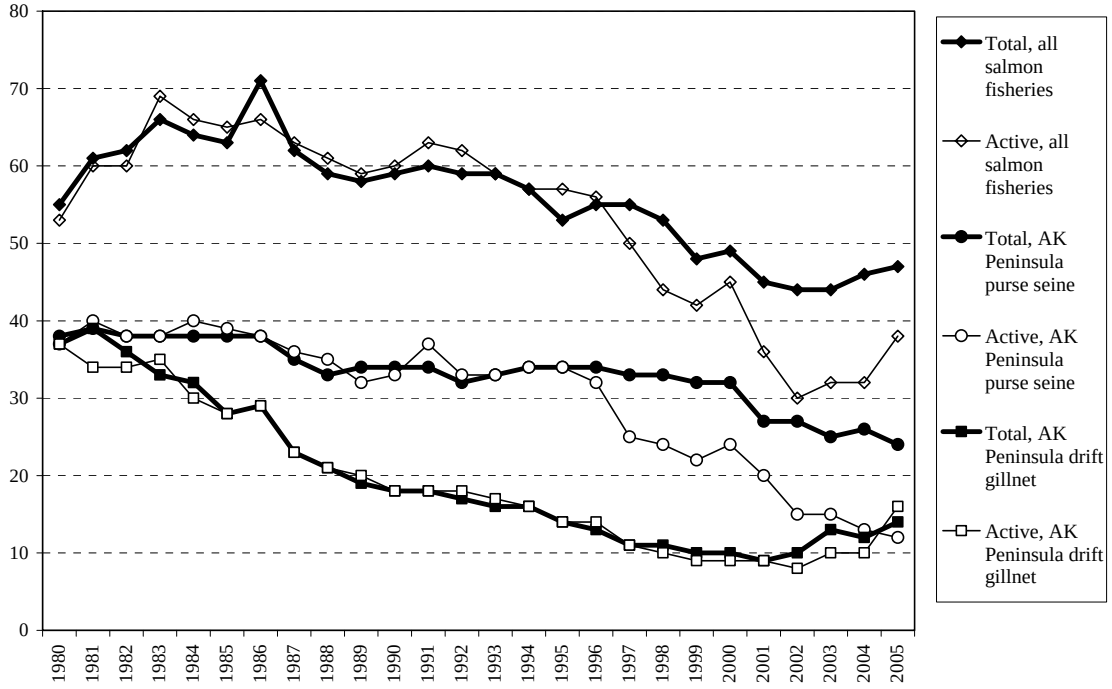
Table IV-6 shows trends over time in the number of King Cove resident total and active salmon fishery permit holders.[17] The number of active salmon permit holders fell from a high of 69 in 1984 to a low of 30 in 2002, and then increased to 38 in 2005. The decline in active permit holders is due to a combination of two factors:

- A decline in the total number of permit holders. This accounted for most of the decline in active permit holders prior to 2000.

- A decline in the share of permits which were fished. This accounted for most of the decline in active permit holders after 2000.

Figure IV-6

Number of Salmon Permit Holders: King Cove Residents



The two major salmon fisheries in which King Cove residents are permit holders are the Alaska Peninsula purse seine fishery and the Alaska Peninsula drift gillnet fishery. As can be seen in Figure IV-6, there has been a significant decline in total permit ownership by King Cove residents in both of these fisheries—although the number of permit holders in the drift net fishery grew slightly after 2001. Most King Cove drift gillnet permit holders have been active in

[17] Recall that we use the term "active permit holders" for the "number of fishermen who fished." If a permit is transferred during a season, the same permit may be fished by multiple fishermen. This is why "active permit holders" exceeds "total permit holders" in several years.

the fishery. In contrast, beginning in the second half of the 1990s, a large share of purse seine permit holders were not active.

The decline in the number of King Cove permit holders has not resulted from a change in the total number of permits in the fishery, but rather from a shift in permit holdings from residents of King Cove to residents of other communities. As shown in Figures IV-7a and IV-7b, there has been a significant shift in the residency of permit holders away from both King Cove residents and other "local" residents to other Alaska residents as well as non-Alaska residents.[18]

Figure IV-7a

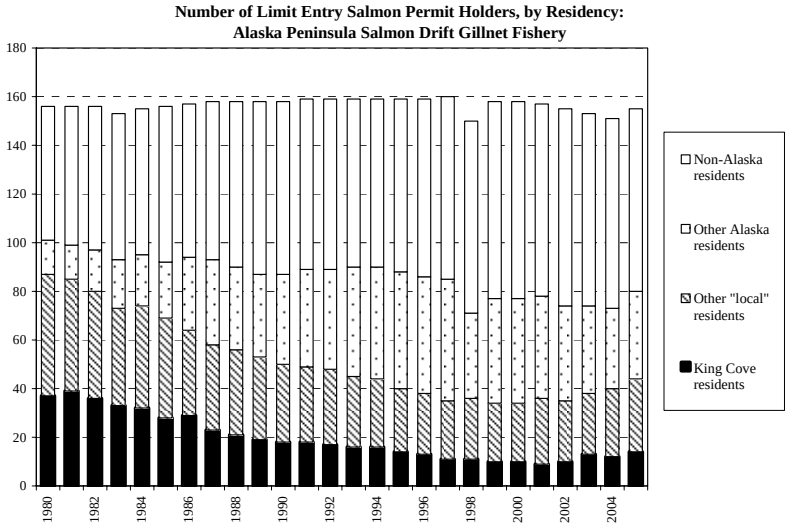
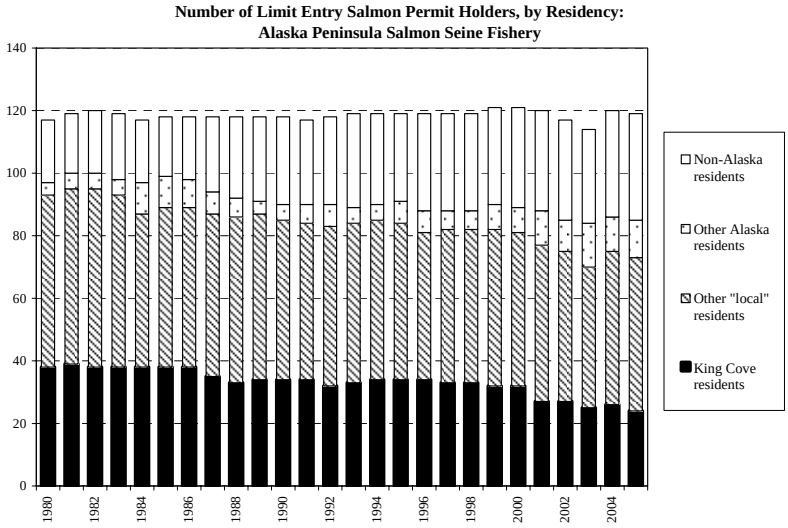


Figure IV-7b



[18] Data on permit holder residence are from Commercial Fisheries Entry Commission, Changes in the Distribution of Alaska's Commercial Fisheries Entry Permits, 1975-2005 (CFEC Report Number 06-2N), Tables 7 & 9. Data for the number of other "local" permit holders were calculated by subtracting the number of King Cove resident permit holders from data in these tables for total "rural local" and "urban local" permit holders.

CFEC data for net changes in permit ownership over the period 1975-2005 (Table IV-1) show that the primary cause of decline in the number of "local" salmon permit holders from the two major Alaska Peninsula salmon fisheries has been transfers (sales and gifts) rather than migration. This suggests that relatively little of the decline in salmon permit ownership by King Cove residents has been due to permit holders moving out of the community, and that most of the decline has been due to transfers of permit out of the community.

Table IV-1

Net Decline in Number of "Rural Local" Holders of Limited Entry Permits, 1975-2005, by Cause

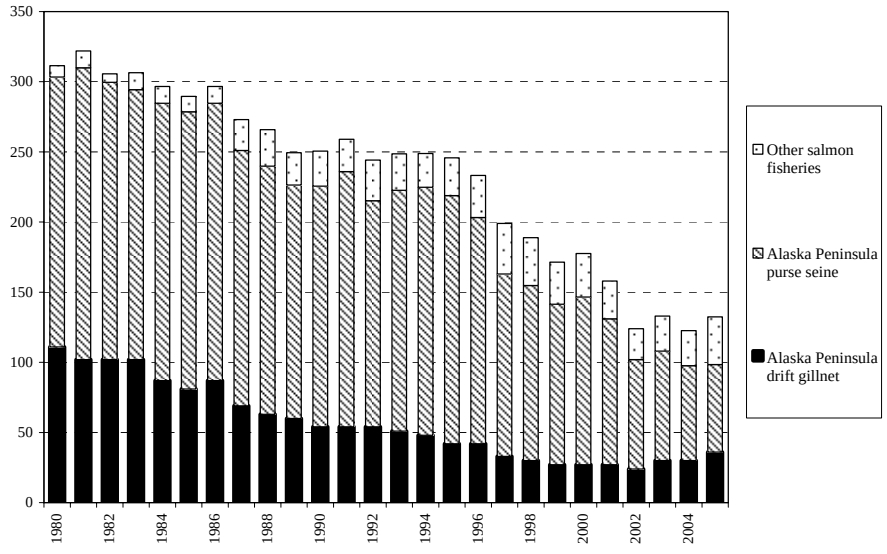
Fishery	Transfers	Migration
Peninsula/Aleutian Salmon Seine Permits	26	7
Peninsula/Aleutian Drift Gillnet Permits	60	0

Source: Commercial Fisheries Entry Commission, Changes in the Distribution of Alaska's Commercial Fisheries Entry Permits, 1975-2005 (CFEC Report Number 06-2N), Tables 7 & 9.

Data are not available for the number or residency of crew working in Alaska fisheries. We can however make a rough estimate of the number of persons working in salmon fishing by multiplying the number of permits fished by average "crew factors" developed by the Alaska Department of Labor and Workforce Development. These assumed crew factors were 5.2 for the Alaska Peninsula purse seine fishery and 3 for the Alaska Peninsula drift gillnet fishery.[19] Based on these assumed crew factors, the total number of persons working on fishing permits held by King Cove residents fell from more than 300 in 1980 to less than 140 in 2005 (Figure IV-8). Although not all of these individuals were necessarily King Cove residents, it is likely that many or most of them were.

Figure IV-8

Estimated Jobs in Salmon Fishing Operations of King Cove Salmon Permit Holders



[19] Crew factor data were provided by the Alaska Department of Labor and Workforce Development, Research and Analysis Division. The article on "Employment in the Alaska Fisheries" in the December 2004 issue of *Alaska Economic Trends* (http://labor.state.ak.us/trends/dec04.pdf) provides a detailed discussion of their derivation.

King Cove residents interviewed in fieldwork for this study indicated that salmon fishing is the staple fishery and the one with the most community participation. King Cove fishermen traditionally started out as salmon deckhands on family boats between the ages of 7 and 12.

Analysis of the causes of decline in the number of King Cove salmon permit holders, and the decline in the number of salmon permit holders actively fishing their permits, is beyond the scope of this report. It is likely that causes include:.

- Declining salmon prices which made fishing far less profitable, particularly for the salmon seine fishery.

- When permits were offered for sale, the number of potential buyers who were non-King Cove residents greatly exceeded the number of potential buyers who were King Cove residents. Non-King Cove residents may also have had better access to capital.

What is important to note, for the purposes of this report, is that King Cove experienced a very significant decline in salmon fishery permit holdings and participation over the period 1980-2005.

Trends in King Cove Halibut and Sablefish Fishery Participation

As was shown above in Figure IV-5, the number of King Cove resident halibut permit holders grew rapidly during the 1980s and reached a peak of 48 in 1991. There were 42 King Cove resident halibut permit holders in 1994, the year prior to implementation of the halibut IFQ program.

As shown in Table IV-2, after the implementation of halibut IFQs the number of active King Cove resident halibut permit holders fell to 19 in 1995 and to 13 or fewer by 1998. Although 40 King Cove residents held IFQ in the first year of the program, the number of IFQ holders fell to 14 by 2002, of whom only 12 fished their IFQ. This decline is likely due to the same factors driving consolidation in the number of IFQ holders throughout the fishery: many of the initial quota share recipients received only small volumes which could not be fished economically, and sold their quota share to other quota share holders.[20] In Chapter VI we discuss King Cove residents' perceptions of the effects of introduction of IFQs in the halibut fishery.

Table IV-2
King Cove Resident Halibut IFQ Holders, Landings and Earnings

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of active permit holders	42	19	21	17	13	12	13	13	10	10	12
Persons holding IFQ		40	36	24	20	18	18	19	14	14	14
Number of IFQ holders who fished		21	26	20	14	15	14	15	12	12	12
Number of permits fished, vessels over 5 tons (assumed crew factor = 3)	43	19									
Number of permits fished, vessels 60' or over (crew factor = 4)			14	9	6	7	6	4	1	1	1
Number of permits fished, vessels under 60' (crew factor = 3)			7	8	7	5	7	9	9	9	11
Estimated jobs	129	57	77	60	45	43	45	43	31	31	37
Total IFQ holdings (2004 equalivalent pounds)		483,990	390,237	288,380	268,213	268,122	282,235	294,251	269,896	245,315	243,265
Pounds issued		136,969	112,548	169,955	191,040	226,746	273,410	313,505	297,990	269,379	243,265
Pounds landed		104,598	114,583	171,330	175,460	218,862	263,825	296,337	298,197	266,467	240,868
Percent fished		76%	102%	101%	92%	97%	96%	95%	100%	99%	99%
Estimated earnings		$213,357	*	*	$227,851	$437,284	*	$505,039	$534,052	$702,896	$573,263
Average earnings		$10,160	*	*	$16,275	$29,152	*	$33,669	$44,504	$58,575	$47,772

Source: Active permit holders and number of permits fished: CFEC Permit and Earnings database. All other data: National Marine Fisheries Service, Alaska Region Report on Holdings of Individual Fishing Quota (IFQ) by Residents of Selected Gulf Of Alaska Fishing Communities, 1995–2004, March 2005. Available at: http://www.fakr.noaa.gov/ram/cqp/update2006.pdf. Crew factors are based on Alaska Department of Labor assumptions, as discussed above for salmon.
*Confidential

[20] In Tables IV-2 and IV-3, "Total IFQ holdings (2004 equivalent pounds)" are IFQ pounds derived from all QS held by residents of the subject community, computed using 2004 Quota Share Pool and TACs. NMFS reported total IFQ holdings in this way in order to provide a measure of holdings comparable across all reported years, without being influenced by changes in TACs. In contrast, "pounds issued" and "pounds landed" reflect effects of both changes in IFQ holdings and changes in TACs.

As a result of consolidation in the halibut fishery after implementation of IFQs, the estimated number of jobs in halibut fishing operations of King Cove resident permit holders fell from more than 125 in 1994 to less than 40 in 2004.

Although the number of King Cove halibut IFQ holders declined after 1995, their total pounds landed have increased substantially, due to increases in halibut fishery TACs, so that the same quota share holdings have corresponded to increased individual quota (as reflected by declining ratio of total IFQ holdings in 2004 equivalent pounds to IFQ pounds issued.) Total earnings have increased even more due to strengthening prices paid for IFQ. With higher total earning and fewer IFQ holders, average earnings per IFQ holder increased dramatically, from $10,000 in 1995 to $48,000 in 2004. However, these earnings are spread among a much smaller number of King Cove residents.

As shown in Table IV-3, participation by King Cove residents in the sablefish fishery was much smaller than for the halibut fishery, both before and after implementation of the IFQ program. However, the limited available data suggest that the IFQ program also contributed to a decline in King Cove participation in this fishery, with only one resident participating on an occasional basis.

Table IV-3

King Cove Resident Sablefish IFQ Holders, Landings and Earnings

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of active permit holders	3	0	3	2	0		1				1
Persons holding IFQ		11	8	4	4	4	4	3	3	3	3
Total IFQ holdings (2004 equalivalent pounds)		132,385	47,877	29,689	29,689	29,687	29,687	6,242	6,242	6,242	6,242
Pounds issued		113,237	33,371	17,458	17,653	17,589	17,962	3,424	4,187	4,187	6,205
Pounds landed			11,611	18,718			10,387				
Percent fished		0%	35%	107%	0%	0%	58%	0%	0%	0%	0%

Source: Active permit holders: CFEC Permit and Earnings database. All other data: National Marine Fisheries Service, Alaska Region Report on Holdings of Individual Fishing Quota (IFQ) by Residents of Selected Gulf Of Alaska Fishing Communities, 1995–2004, March 2005. Available at: http://www.fakr.noaa.gov/ram/cqp/update2006.pdf.

Trends in King Cove Crab Fishery Participation

King Cove has had a long history crabbing and processing crab. Pan American started canning crab in 1958 which diversified income for both fishers and the cannery after cod stocks crashed in the period before WWII. At this time, crabbing provided four to six months of work for King Cove fishermen (Jones 1976:32). As in other communities in the Aleutians, (cf. Lowe 2006 on Unalaska), in the early days of commercial crab fishing, King Cove fishermen could use relatively smaller boats than those used today because the stocks were plentiful inshore.

However, local residents had difficulty in upgrading to the larger vessels needed for open water crabbing when the inshore stocks were depleted from tanglenet gear that was initially used in the fishery. Jones notes that King Cove fishermen used their salmon boats, gillnetters and seiners, to fish for crab but that when the fishery moved offshore, they depended upon the cannery to finance larger boats for crabbing (Jones 1976:33). A King Cove Fisherman (age 80) made the comment:

> *We ran smaller boats—we ran company boats and we had our own boats…Those big 'ole Seattle boats, those big 'ole tankers, they made draggers out of them and put processors in all the bays and so we had to put small drags on our boats in order to compete with them. Fishing in some nasty weather.*

A King Cove fisherman (age 80) related that he and other King Cove veteran fishermen pioneered the Aleutian king crab fisheries in the 1950s. When the inshore areas were fished out, vessels had to move offshore which required them to be of a larger size (minimum of about 100 feet according to informants) to withstand the inclement weather.

From her ethnographic fieldwork conducted in King Cove in 1969, Jones described the local involvement in crab fisheries (Jones used "New Harbor" as a pseudonym for King Cove):

> The boom in king crab shortly after World War II added substance to the fishing tradition in New Harbor.[21] The company that processes fish in New Harbor began canning crabs in a nearby village. Therefore no one expected the New Harbor plant to diversify to crab canning. Nonetheless, in an apparent effort to prevent the emigration of its local salmon fleet to villages with a crab outlet or crab and salmon outlets, the New Harbor plant did diversify to crab canning in 1958.
>
> Before the crab era, dependent on the ups and downs of a two-month fishing season, New Harbor Aleuts faced continual financial insecurity. Company diversification into crab processing promised to stabilize income. In addition to summer salmon fishing, Aleuts could anticipate four to six months of crab fishing. At first, New Harbor fishermen relied exclusively on gill netters and purse seiners for crab fishing in inside waters, but the fishery soon moved to the open sea and larger vessels became necessary. Again, the company assisted in financing boats for some of the local fishermen. By 1969, about two-thirds of the New Harbor fishermen engaged in crab fishing on locally owned or company vessels. Thus the fishing tradition in New Harbor became entrenched. [22]

[21] New Harbor is Jones's pseudonym for King Cove.
[22] Jones, Dorothy M. 1976 Aleuts in Transition. Seattle: University of Washington Press. Pp. 32-33.

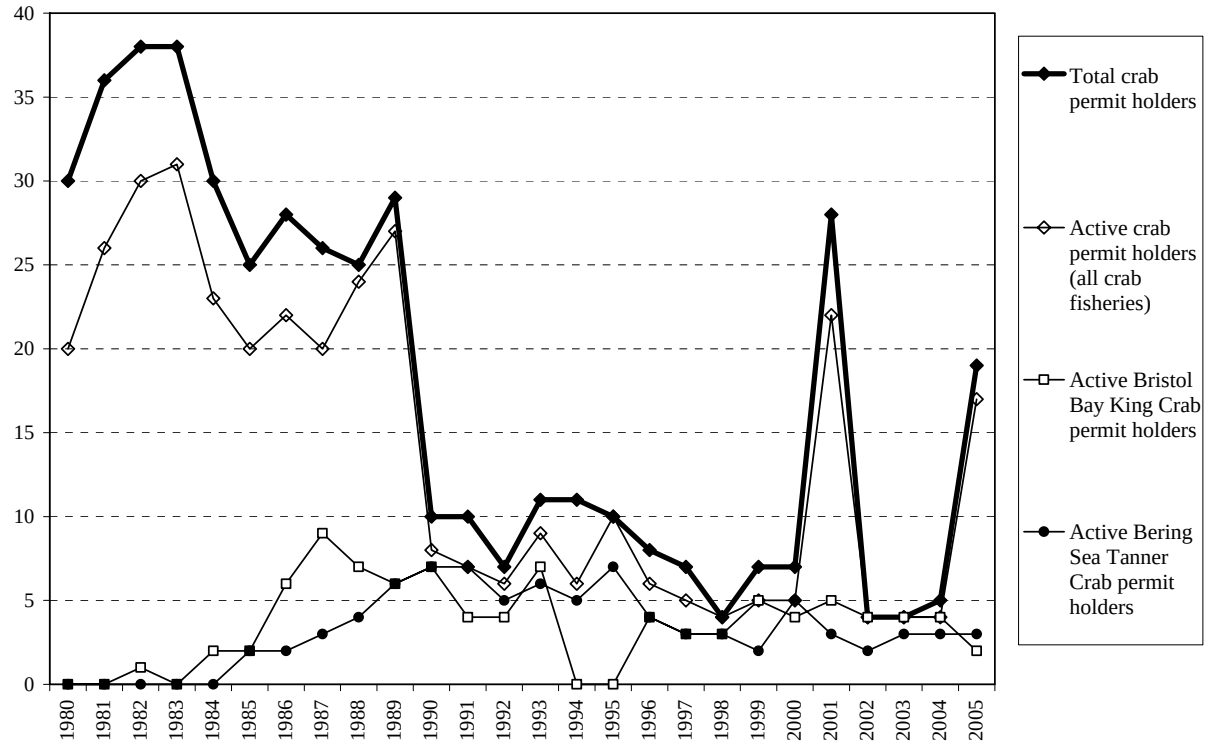
Jones's study highlights King Cove residents' long-standing historical involvement in crab fisheries, the importance of these fisheries in economic diversification for the community, and the historical movement of the fishery from inshore waters to open-sea fishing, with the accompanying increase in the size of vessels needed for participation in these fisheries.

Most King Cove fishermen did not have the capital to invest in the larger sized vessels required for offshore crab fisheries. While there are some 58' vessels owned by King Crab residents in addition to the two larger crab boats, the Denali and the Northern Spirit, the average size vessel in King Cove today is about 30'. In contrast to the salmon fisheries and other inshore fisheries, in which many local fishermen captain their own vessels, over time King Cove fishermen came to participate in the offshore BSAI crab fisheries primarily as crewmen on larger vessels.

As shown in Figure IV-9, the number of active King Cove crab permit holders exceeded 20 throughout most of the 1990s, but fell to below 10 for most of the 1990s. The total number of active permit holders in the two largest rationalized fisheries grew during the 1980s and was declining gradually in the years prior to rationalization. The number of active permit holders in Bristol Bay king crab fisheries peaked at 10 in 1995 and fell to 4 for the years 2002-2004. The number of active permit holders in Bering Sea Tanner crab fisheries peaked at 7 in 1995 and fell to 3 for the years 2003-2005.

Figure IV-9

Number of Crab Permit Holders: King Cove Residents



As shown in Table IV-4, King Cove residents have been active permit holders in a wide variety of crab fisheries since 1980. Part of this diversity is due to changes over time in how various fisheries were defined in terms of combinations of vessel sizes and area. It also reflects changes over time in which fisheries were open, as crab resource conditions changed, and the extent to which fisheries were in offshore waters not accessible to smaller boats.

Table IV-4
Overview of Participation in Crab Fisheries by King Cove Resident Crab Permit Holders, 1980-2005

Species	Vessel Size	Area	Most recent year with active permits	Highest number of active permits	Average number of active permits during years fished	Number of years with active permits
King crab	60' or over	Bristol Bay	2005	5	4	10
	60' or over	BB CDQ, YDFDA	2000	1	1	2
	60' or over	Bering Sea	1998	6	4	3
	Over 50'	Bering Sea	1995	8	2	13
	50' or less	Bering Sea	1993	2	1	2
	50' or less	Bristol Bay	1993	1	1	5
	Over 50'	Bristol Bay	1993	8	4	12
	Over 50'	Adak	1989	2	1	6
	Over 50'	Dutch Harbor	1987	2	1	6
	50' or less	AK Peninsula	1982	8	3	5
	50' or less	Kodiak	1982	1	1	1
	Over 50'	AK Peninsula	1982	12	4	8
Tanner crab	60' or over	Bering Sea	2005	5	3	10
	Under 60'	AK Peninsula	2005	19	16	2
	60' or over	BS CDQ, YDRFD	1999	1	1	2
	Over 50'	Bering Sea	1995	7	5	11
	50' or less	Bering Sea	1993	1	1	1
	50' or less	AK Peninsula	1989	14	7	7
	Over 50'	AK Peninsula	1989	10	9	5
	50' or less	Dutch Harbor	1988	2	1	2
	Over 50'	Dutch Harbor	1988	1	1	1
	Over 50'	Adak	1986	1	1	2
	50' or less	Statewide	1984	11	7	5
	Over 50'	Statewide	1984	21	14	5
Dungeness crab	60' or over	AK Peninsula	2005	1	1	2
	50' or less	Statewide	1986	1	0	5
	Over 50'	Statewide	1986	1	1	5
Hair crab	Over 50'	Statewide	1995	1	1	4
All Crab Fisheries			2005	31	14	26

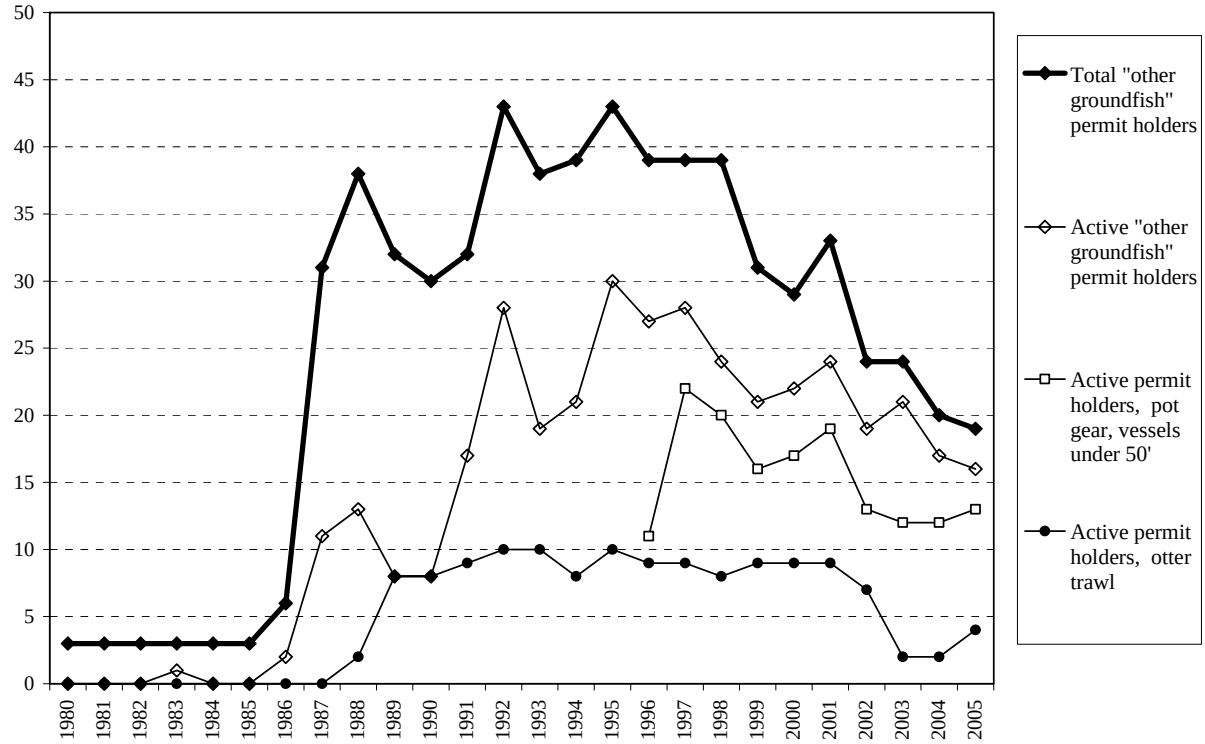
Source: CFEC, Permit and Fishing Activity Database

Trends in King Cove "Other Groundfish" Fishery Participation

"Other groundfish" refers to groundfish fisheries other than halibut and sablefish. The number of active permit holders in "other groudfish" fisheries was between 20 and 30 during the 1990s and then gradually declined to less than 20 after 2000 (Figure IV-10). In recent years, the "under 50 foot pot gear" fisheries " and "otter trawl" fisheries have accounted for the largest numbers of active permit holders.

Figure IV-10

Number of "Other Groundfish" Permit Holders: King Cove Residents



King Cove Crew Licenses

As noted earlier, no data are available on the number of King Cove residents participating in each fishery as crew. However, data are available for the years 2000 and 2002-2005 on the total number of King Cove residents who purchased commercial fishing crew licenses (Table IV-5).[23]

Table IV-5
Number of Residents Holding Permits or Crew Licenses, 2000-2005: King Cove

Year*	2000	2002	2003	2004	2005
Permit holders	62	55	55	54	57
Crew	165	108	110	120	73
Total	227	163	165	174	130

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

For the years 2000-2004, the number of King Cove residents who were crew licenses holders was generally double or more the number who were permit holders. There was considerable variation from year to year, from a high of 165 in 2000 to a low of 108 in 2002. The number of crew license holders fell sharply to in 2005 to only 73. It is uncertain what may have caused this sharp decline, as there was no corresponding decline in number of permit holders. The decline in crab fishing crew jobs resulting from consolidation of the crab fleet after rationalization of the Bristol Bay Red King Crab fishery (discussed in the next chapter) may have been a factor—but only to the extent that individuals working as crew in that fishery did not work as crew in other fisheries for which they would have required crew licenses.

[23] Anyone working in a commercial fishing operation who is not a permit holder in at least one fishery is required to purchase a crew license. Thus the number of individuals who are permit holders plus the number of crew license holders provides an indication of the total number of individuals working in some way in commercial fishing. However, unlike for permit holders, there are no data on which fisheries crew license holders participate in.

King Cove Vessel Ownership

Table IV-6 summarizes data from the CFEC vessel database for vessels owned by King Cove residents during the years 1980, 1990, 2000 and 2005. During these years, there were at most four larger vessels (60' or more in length) registered to King Cove residents. Most of the vessels owned by King Cove residents were smaller vessels less than 39' in length. Since 1990 there has been a sharp decline in the number of boats between 20'-39' in length 40'-59' in length.

Table IV-6
Number of Vessels Owned by King Cove Residents

	Vessel length	1980	1990	2000	2005
All vessels	Less than 20'	5	48	39	27
	20'-39'	65	64	37	27
	40'-59'	18	28	24	20
	60'+	4	2	4	1
	Total	**92**	**142**	**104**	**75**
Vessels registered for salmon fishing	Less than 20'	4	40	37	25
	20'-39'	61	55	34	25
	40'-59'	15	24	21	18
	60'+	2			
	Total	**82**	**119**	**92**	**68**
Vessels with pot gear	Less than 20'		1	2	3
	20'-39'	5	8	3	2
	40'-59'	10	17	19	16
	60'+	4	2	4	1
	Total	**19**	**28**	**28**	**22**
% registered for salmon fishing	Less than 20'	80%	83%	95%	93%
	20'-39'	94%	86%	92%	93%
	40'-59'	83%	86%	88%	90%
	60'+	50%	0%	0%	0%
	Total	**89%**	**84%**	**88%**	**91%**
% with pot gear	Less than 20'	0%	2%	5%	11%
	20'-39'	8%	13%	8%	7%
	40'-59'	56%	61%	79%	80%
	60'+	100%	100%	100%	100%
	Total	**23%**	**24%**	**30%**	**32%**

Source: CFEC Vessel Database. Data available at:
http://www.cfec.state.ak.us/fishery_statistics/vessels.htm.

Except for the largest vessel class (60'+) most King Cove vessels are registered for salmon fishing. Most larger boats have pot gear, while only a few smaller boats have pot gear.

In general, the vessel registration data suggest that vessels owned by King Cove residents were mostly smaller vessels used for salmon fishing, with relatively few larger boats suitable for crab fishing, especially in offshore crab fisheries.

King Cove Household Survey Responses About Fishery Participation

Table IV-7 summarizes responses from the King Cove household survey, conducted in the winter of 2006, about fishery participation by household members over the previous five years. As discussed in Chapter III, the survey results indicated that of the 136 households surveyed, 88 households (about two-thirds) had household members who had participated in at least one commercial fishery over the past five years. Of these households, more than 91% had participated in salmon fishing, 70% in cod fishing, 52% in crab fishing, and 26% in halibut fishing.

Table IV-7
King Cove Household Survey Responses:
What fisheries have household members fished in over the past five years?

Species	Number	Percent of households which fished	Percent of total households
Salmon	80	91%	59%
Cod	62	70%	46%
Crab	46	52%	34%
Halibut	23	26%	17%
Herring	4	5%	3%
Tendering	2	2%	1%
Pollock	1	1%	1%
Total households which fished	88	100%	65%

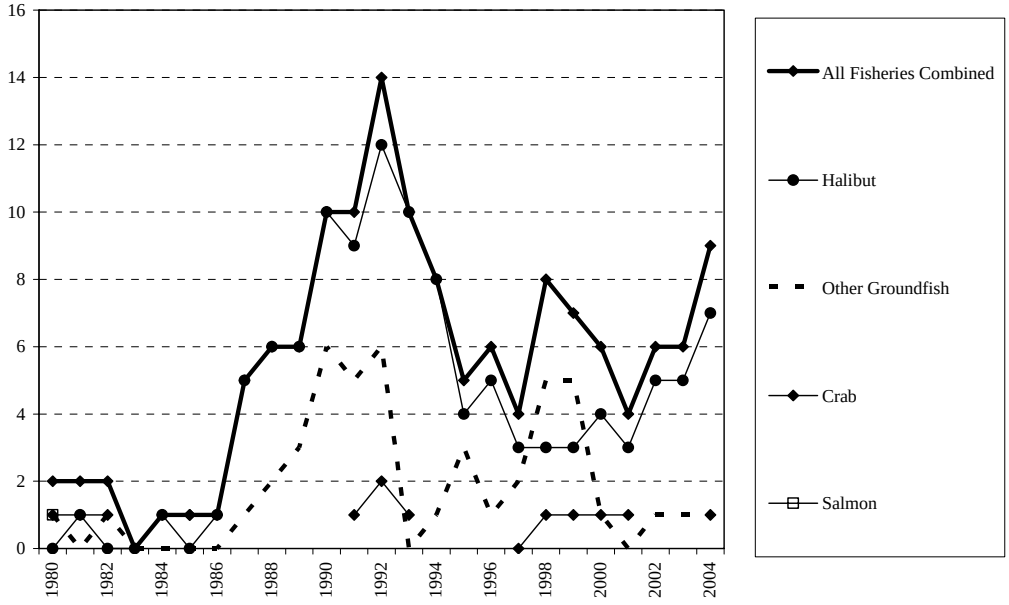
Source: Cordova Consulting, King Cove Draft Community Development Survey Results, Table 16.

Akutan

Akutan is a much smaller community than King Cove, with a much smaller number of fishermen. The number of active permit holders increased from only 2 in the early 1980s to 10 in 1989 and 14 in 1992, and then dropped off to about 8 for most of the late 19990s. Most Akutan permit holders hold halibut permits, and the number of halibut permits fished is much higher than for any other species. The number of "Other groundfish" permits fished by Akutan residents was as high as 6 in the early 1990s but declined to just 1 since 2000. Since 1980, only one or two Akutan residents have held permits to fish for crab or salmon.

Figure IV-12

Number of Active Permit Holders, by Fishery Group: Akutan



In 2003, Akutan's CDQ organization, APICDA, developed a halibut quota loan program for Akutan residents. APICDA made $500,000 available for the purchase of 60,000 lbs. of halibut quota, 59,000 of which was caught in 2005 (APICDA 2006). APICDA estimated 12 community residents participated in the halibut fishery. The fishermen delivered their catch to the Trident plant, where the fish were processed under a joint venture agreement with APICDA.

A 32' APICDA-owned boat, the Aleutian Pribilof No. 4 (AP-4) is moored in Akutan. According to EDAW, Inc. (2005) most IFQ permit holders fished their halibut quota on the AP-4. Fieldwork interviews indicated that community residents were unsatisfied with the profit split on the AP-4 and one resident has now purchased a 32' vessel for common use by several Akutan permit holders.

Because data on harvests and earnings are confidential for fisheries with fewer than four participants, data are not available for most years on Akutan permit holders' landings and earnings in specific fisheries. Total earnings were less than $150,000 for all but three years between 1989 and 2004. In three years (1992, 1993 and 1999) the total reported value of

landings was much higher (between $450,000 and $650,000). Data are not available on what species accounted for the bulk of harvests and earnings in these three years.

Figure IV-13

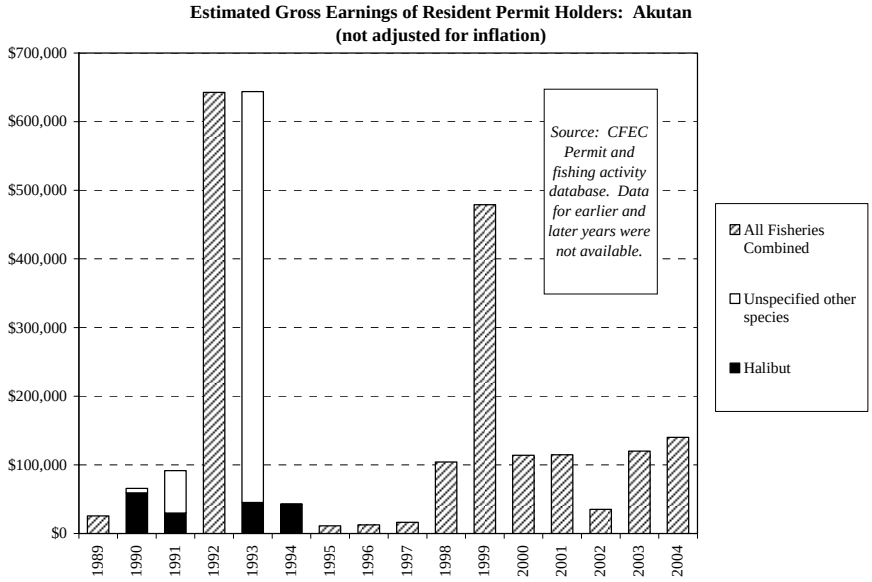
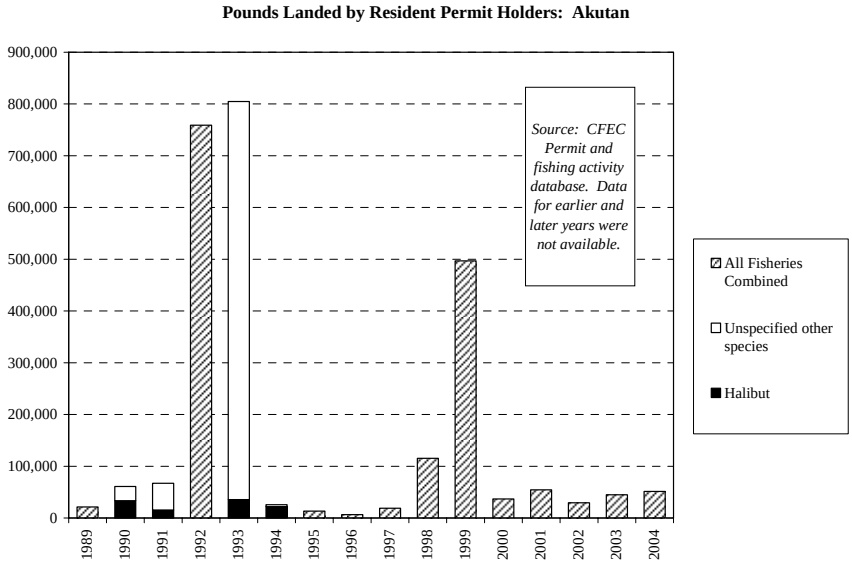


Figure IV-14



Akutan has a history of involvement in Alaska's crab fisheries since the post-WWII period and some of the community's residents involved in the crab fisheries are third generation crab fishermen. Floater processor barges and vessels were a common sight in Akutan Bay until the 1980s. A Wakefield Seafood Processor catcher-processor called the *Deep Sea* processed crab in Akutan Bay as early as 1948. As the crab industry expanded, Wakefield added more floater-processors and built a dock (McGowan 1999).

Local Akutan residents worked on the processors and at the height of the crab boom. A floater-processor called the *Akutan* provided seasonal employment for 25 locals (University of Alaska 1978). In 1979, Seawest bought Wakefield's operations in Akutan and replaced the *Akutan* with the *M/V Western Sea*. Soon the record harvests of king crab at that time supported 13 floater processors in Akutan Bay making it one of the most productive ports in the U.S. (McGowan 1999:54). Both Seawest and the Trident Seafood Company started to expand shoreside at this time.

Historically, 3 Akutan residents held registered permits for crab fisheries beginning in 1977. These Akutan residents fished for king, tanner and Korean hair crab until stocks began to crash in 1981. Seawest pulled its operation out of the locality in 1983, leaving Trident as the sole processor in the community.

Since 1980, there has been only limited participation in crab fisheries by Akutan residents, with a maximum of two permit holders fishing for crab in several different fisheries. The crab fishery for which an Akutan resident most recently fished a permit was the Dutch Harbor bairdi (tanner) crab fishery in 2004. This small, inshore fishery was developed by the Unalaska Native Fisherman's Association in conjunction with ADFG to benefit local fishermen.

Table IV-8
Overview of Participation in Crab Fisheries by Akutan Resident Crab Permit Holders, 1980-2005

Species	Vessel Size	Area	Most recent year with active permits	Highest number of active permits	Average number of active permits during years fished	Number of years with active permits
King crab	60' or over	Bristol Bay	2001	1	1	3
	60' or over	Bering Sea	1998	1	1	1
	Over 50'	Bering Sea	1992	1	1	2
	Over 50'	Bristol Bay	1992	1	1	2
	Over 50'	Adak	1982	1	1	1
Tanner crab	60' or over	Bering Sea	2001	1	1	2
	Over 50'	Bering Sea	1993	2	1	3
	60' or less	Dutch Harbor	2004	1	1	1
	50' or less	Statewide	1981	1	1	1
	Over 50'	Statewide	1982	1	1	3
All Crab Fisheries			2004	2	1	13

Source: CFEC, Permit and Fishing Activity Database

Akutan also participates indirectly in the crab fisheries through the profits earned by the 10% of the crab harvest quota that is allocated to CDQ organizations as well as the crab vessels owned by APICDA that employ locals or make their landings in Akutan. Some local fishermen occasionally find crew jobs on APICDA vessels.

Akutan's local fleet is small in size and all vessels owned by Akutan's residents are under 60' in length. EDAW, Inc. (2005) reports that there is one 28' vessel, one 24' vessel and that the remaining are skiffs. APICDA was planning to begin building a small boat harbor in Akutan in 2006.

Table IV-9
Number of Vessels Owned by Akutan Residents

	Vessel length	1980	1990	2000	2005
All vessels	Less than 20'	2	11	3	2
	20'-39'		3	3	5
	40'-59'	1			
	60'+	2	1		
	Total	**5**	**15**	**6**	**7**
Vessels registered for salmon fishing	Less than 20'	1			
	20'-39'		1		2
	40'-59'				
	60'+				
	Total	**1**	**1**	**0**	**2**
Vessels with pot gear	Less than 20'				1
	20'-39'	1			
	40'-59'	1			
	60'+				
	Total	**2**	**0**	**0**	**1**
% registered for salmon fishing	Less than 20'	50%	0%	0%	0%
	20'-39'		33%	0%	40%
	40'-59'	0%			
	60'+	0%			
	Total	**20%**	**7%**	**0%**	**29%**
% with pot gear	Less than 20'	0%	0%	0%	50%
	20'-39'		0%	0%	0%
	40'-59'	100%			
	60'+	0%	0%		
	Total	**40%**	**0%**	**0%**	**14%**

Source: CFEC Vessel Database. Data available at:
http://www.cfec.state.ak.us/fishery_statistics/vessels.htm.

The number of Akutan residents who held crew licenses declined from 15 in 2000 to 8 in 2005.

Table IV-10
Number of Residents Holding Permits or Crew Licenses, 2000-2005: Akutan

Year*	2000	2002	2003	2004	2005
Permit holders	6	7	10	9	9
Crew	15	15	15	13	8
Total	21	22	25	22	17

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

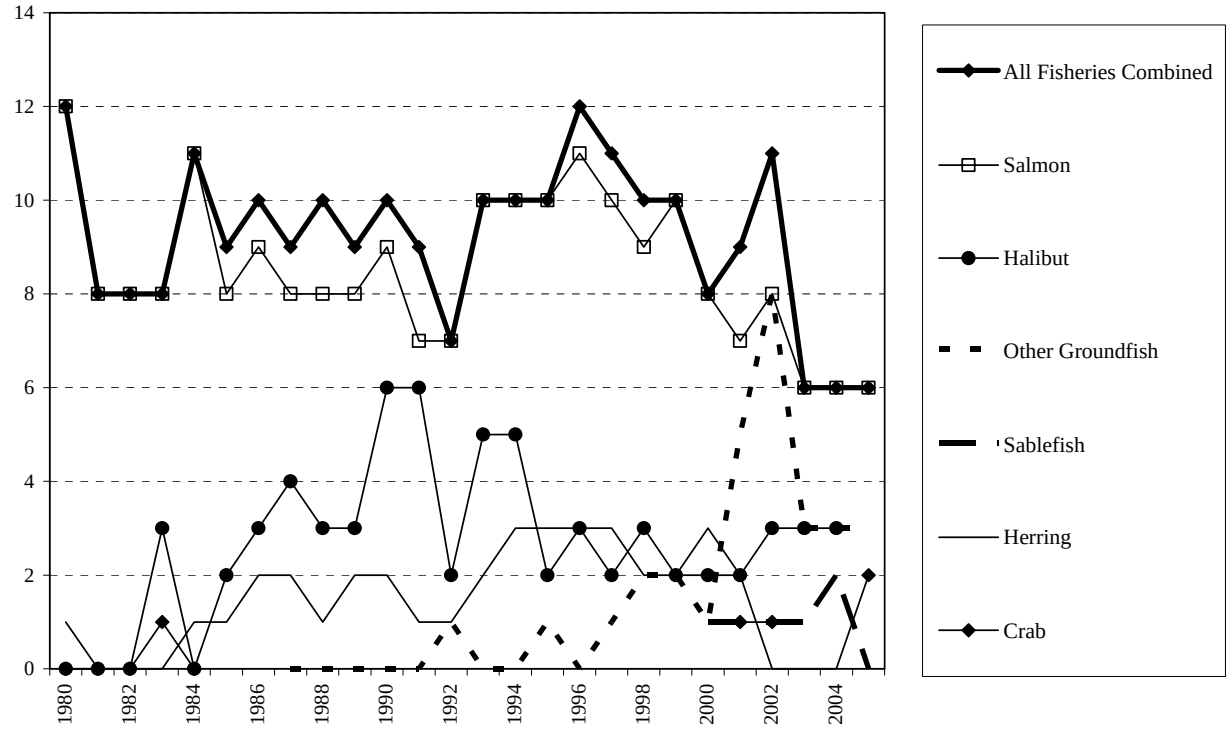
False Pass

In contrast to Akutan, False Pass was historically a salmon processing and salmon fishing community. Almost all active permit holders hold salmon permits. For most of the period between 1980 and 199, there were between 8 and 10 False Pass residents who were active salmon permit holders. This number declined to 6 for the years 2003-2005.

The number of active halibut permit holders grew from 0 to 6 during the 1980s and declined to 3 by the years 2002-2004. For a brief period, between 2001 and 2003, as many as 8 residents fished permits for "other groundfish."

Figure IV-17

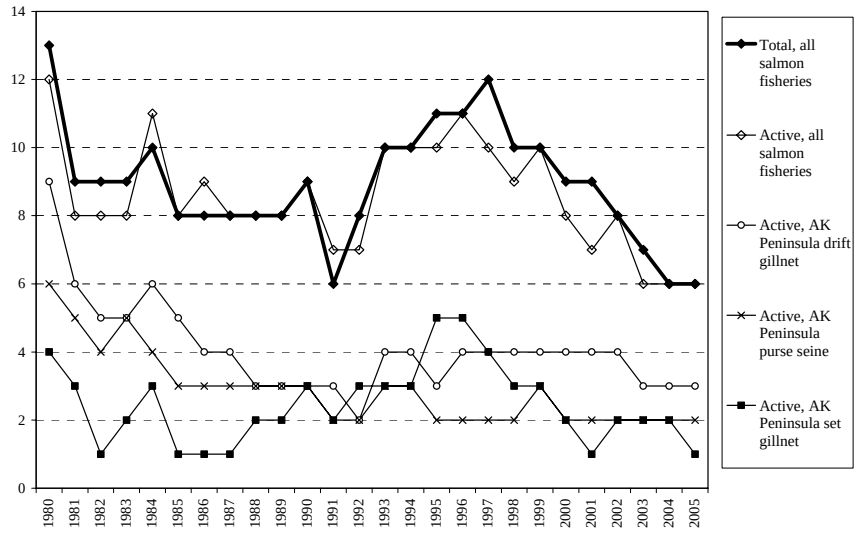
Number of Active Permit Holders, by Fishery Group: False Pass



Since 1980, False Pass residents have fished salmon permits in the Alaska Peninsula purse seine, drift gillnet, and set gillnet fisheries. The number of permits in all of these fisheries declined sharply in the early 1980s, shortly after the implementation of limited entry in the salmon fisheries.

Figure IV-19

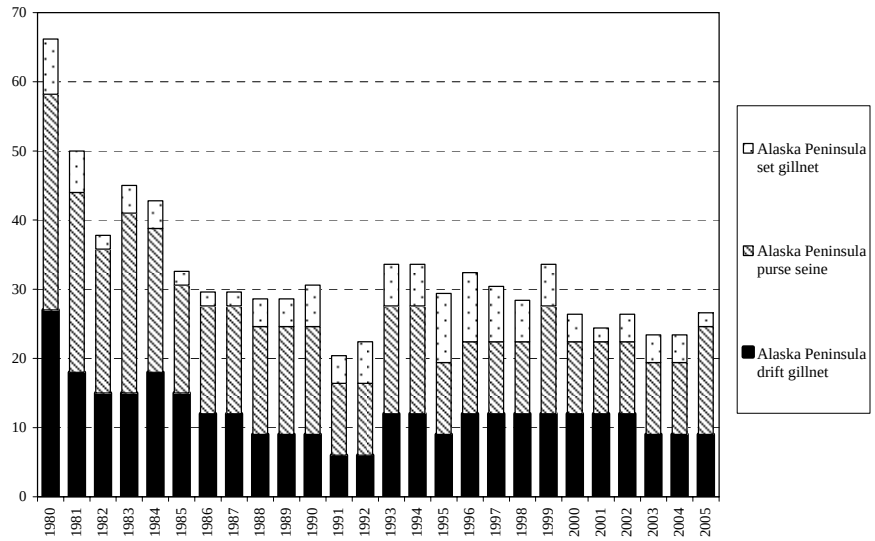
Number of Salmon Permit Holders: False Pass Residents



Based on assumed average crew shares for each type of operation, salmon fishing operations of False Pass permit holders have likely employed an average of about 25 persons since 2000 (not all of whom are necessarily False Pass residents)—about half as many people as in the early 1980s.

Figure IV-20

Estimated Jobs in Salmon Fishing Operations of False Pass Salmon Permit Holders



Prior to the 1990s, salmon accounted for most of the pounds landed and gross earnings of False Pass resident permit holders. During the 1990s, however, salmon harvests and earnings declined, while harvests and earnings from other species increased. Data on the number of permits fished suggest that the other species are primarily halibut and "other groundfish."

Figure IV-21

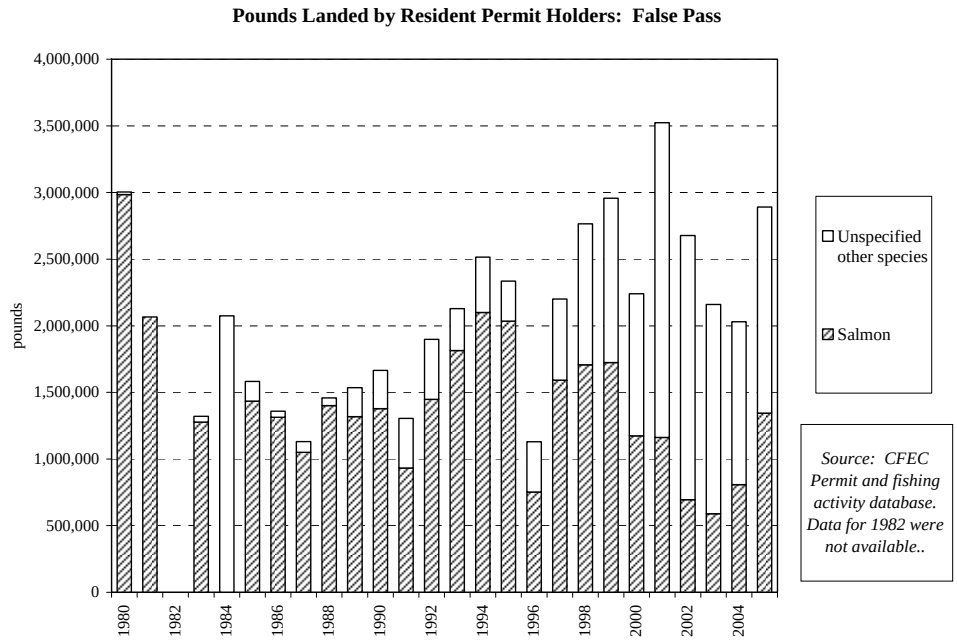
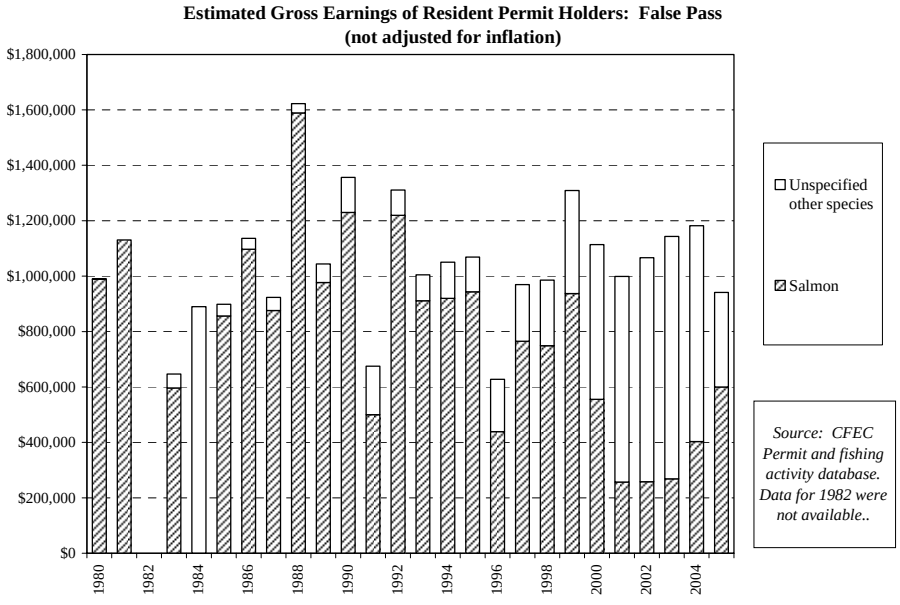


Figure IV-22



In 1995, when the IFQ program was implemented in the halibut fishery, the number of False Pass permit holders who fished for halibut fell from 5 to 2. It has since fluctuated between 2 and 3.

Table IV-11
False Pass Resident Halibut IFQ Holders and Estimated Jobs

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of active permit holders	5	2	3	2	3	2	2	2	3	3	3
Number of permits fished, vessels over 5 tons (assumed crew factor = 3)	4	2									
Number of permits fished, vessels under 5 tons (assumed crew factor = 3)	1										
Number of permits fished, vessels under 60' (crew factor = 3)			3	2	2	2	2	2	3	3	3
Estimated jobs	15	6	9	6	6	6	6	6	9	9	9

Source: CFEC Permit and Earnings database. Crew factors are based on Alaska Department of Labor assumptions, as discussed above for salmon.

Historically, False Pass residents worked as deckhands on crab boats throughout the history of the region's crab fisheries. Currently, the Hoblet family fishes the local, non-rationalized Alaska Peninsula bairdi (tanner) crab fishery on their own boat as does Larry Bear. Since 1992, the local Isanotski Corporation has operated a crab pot storage business which employs one individual, Bill Shellikoff.

Table IV-12
Overview of Participation in Crab Fisheries by False Pass Resident Crab Permit Holders, 1980-2005

Species	Vessel Size	Area	Most recent year with active permits	Highest number of active permits	Average number of active permits during years fished	Number of years with active permits
Tanner crab	60' or over	Bering Sea	2002	1	1	1
	Under 60'	AK Peninsula	2005	2	2	2
	Over 50'	Statewide	1983	1	1	2
All Crab Fisheries			2005	2	1	8

Source: CFEC, Permit and Fishing Activity Database

The number of False Pass residents who held crew licenses declined from 12 in 2000 to 5 in 2005.

Table IV-13
Number of Residents Holding Permits or Crew Licenses, 2000-2005: False Pass

Year*	2000	2002	2003	2004	2005
Permit holders	11	11	7	6	6
Crew	12	12	4	11	5
Total	23	23	11	17	11

*Data for 2001 were not available.
Note: Excludes crew licence holders who did not provide a social security number.
Source: CFEC, Permit Holder & Crew Member Counts by Census Area & City of Residence, http://www.cfec.state.ak.us/fishery_statistics/permits.htm

In 2005, the False Pass fishing fleet consisted of 11 CFEC registered vessels, down from 19 in 1980. The average length of these vessels was 31.1 feet and the average age was 22 years.

Table IV-14
Number of Vessels Owned by False Pass Residents

	Vessel length	1980	1990	2000	2005
All vessels	Less than 20'		3	3	3
	20'-39'	17	7	9	4
	40'-59'	2	2	3	4
	Total	**19**	**12**	**15**	**11**
Vessels registered for salmon fishing	Less than 20'		3	2	2
	20'-39'	16	5	7	4
	40'-59'	2	2	2	3
	Total	**18**	**10**	**11**	**9**
Vessels with pot gear	Less than 20'				
	20'-39'				
	40'-59'		1	2	3
	Total	**0**	**1**	**2**	**3**
% registered for salmon fishing	Less than 20'		100%	67%	67%
	20'-39'	94%	71%	78%	100%
	40'-59'	100%	100%	67%	75%
	Total	**95%**	**83%**	**73%**	**82%**
% with pot gear	Less than 20'		0%	0%	0%
	20'-39'	0%	0%	0%	0%
	40'-59'	0%	50%	67%	75%
	Total	**0%**	**10%**	**18%**	**33%**

Source: CFEC Vessel Database. Data available at:
http://www.cfec.state.ak.us/fishery_statistics/vessels.htm.

Fishing boats in False Pass, 2004

V. DIRECT ECONOMIC IMPACTS OF CRAB RATIONALIZATION ON STUDY COMMUNITIES

In this chapter we review direct economic impacts of crab rationalization on the three study communities. By "economic impacts" we mean changes in local jobs, income, sales and/or tax revenue. By "direct economic impacts" we mean changes in jobs, income, sales or government revenues since the last season before rationalization (2004-05) that are reasonably directly attributable to rationalization.

The most significant direct economic impacts of crab rationalization on the study communities have been:

- Loss of fishing jobs and income: Loss of BSAI crab fishing jobs and income for community residents.

- Decline in harbor use and fees: Decline in the use of King Cove harbor facilities by crab fishing vessels, with corresponding declines in revenues from harbor fees.

- Decline in support industry sales: Decline in sales for some businesses supporting the crab fishing industry.

We begin by reviewing potential economic impacts of rationalization upon Alaska coastal communities. There are a wide variety of potential economic impacts, both direct and indirect. These may vary by community and may occur over different periods of time. Some are not significant for our three study communities, but may be more important for other Alaska communities.

We then examine direct economic impacts on the three study communities. We focus most of our analysis on King Cove, because it is a larger community which has experienced a wider variety of impacts for which more data are available.

Potential Economic Impacts of Rationalization on a Community

To understand the potential economic impacts of crab rationalization on a community, it is important to begin with a clear understanding of the different mechanisms by which a fishery may potentially affect a community's economy, and which may in turn be affected by a change in fishery management. Figure V-1 summarizes some of the most important mechanisms by which *fish harvesting* may potentially create income and jobs within a community.

Fish harvesting creates fishing jobs. The number of jobs created for local residents depends on three factors: the total number of boats fishing, the number of jobs per boat, and the share of jobs held by local residents. Potentially all three of these factors could be affected by a change in fishery management.

Fish harvesting also brings income into a community through a wide variety of potential mechanisms, including payments to captains and crew, payments for services and supplies, taxes,

royalty payments to quota holders, and lease payments to vessel holders. How much income flows into the community through each of these mechanisms depends first on the total catch and the ex-vessel price, which determine the value of the fishery. It then depends on a wide variety of other factors shown in italics in the figure—many of which may also be affected by a change in fisheries management. The important point is that rationalization could potentially have a wide variety of economic effects on a community, and could affect not only fishermen but also fishing service and supply businesses and government.

Figure V-1
Major Mechanisms by which Fish Harvesting May Create Income and Jobs in a Community

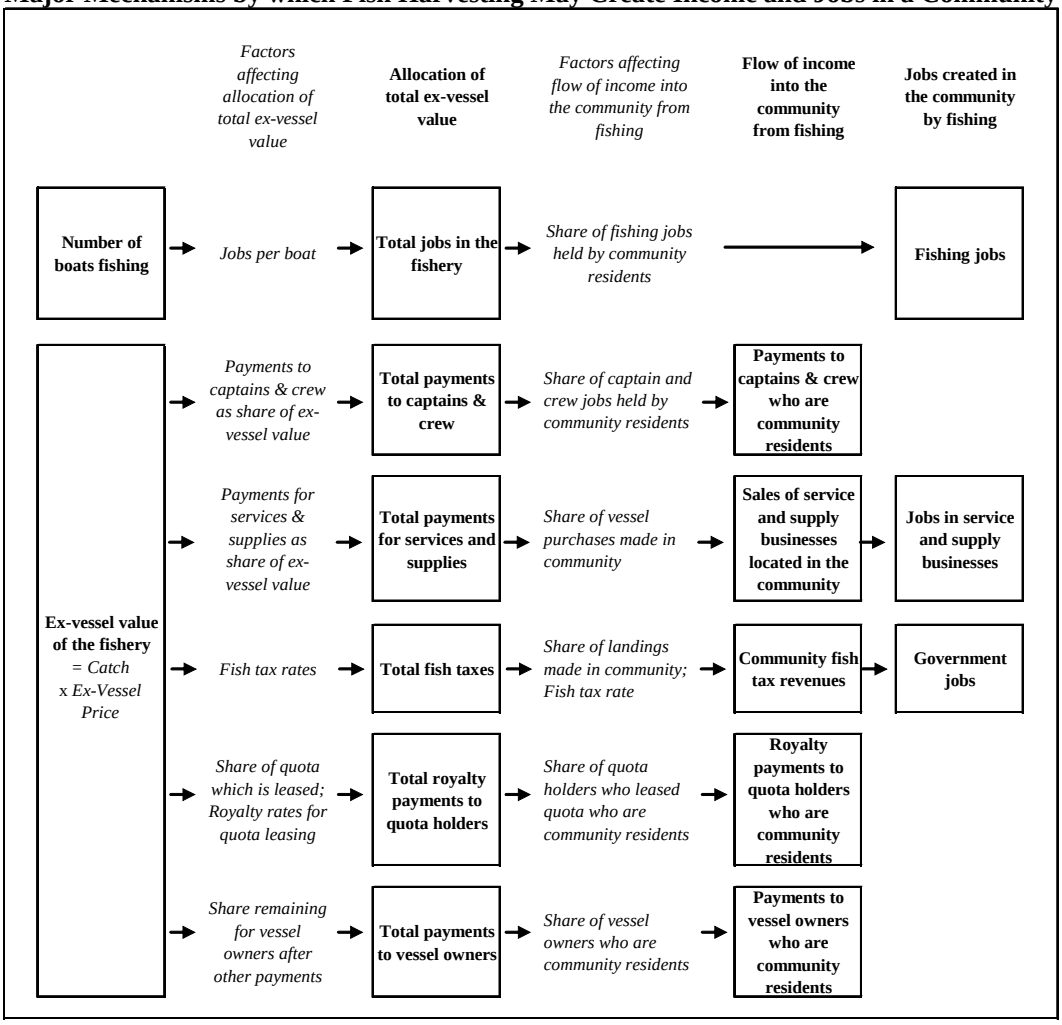
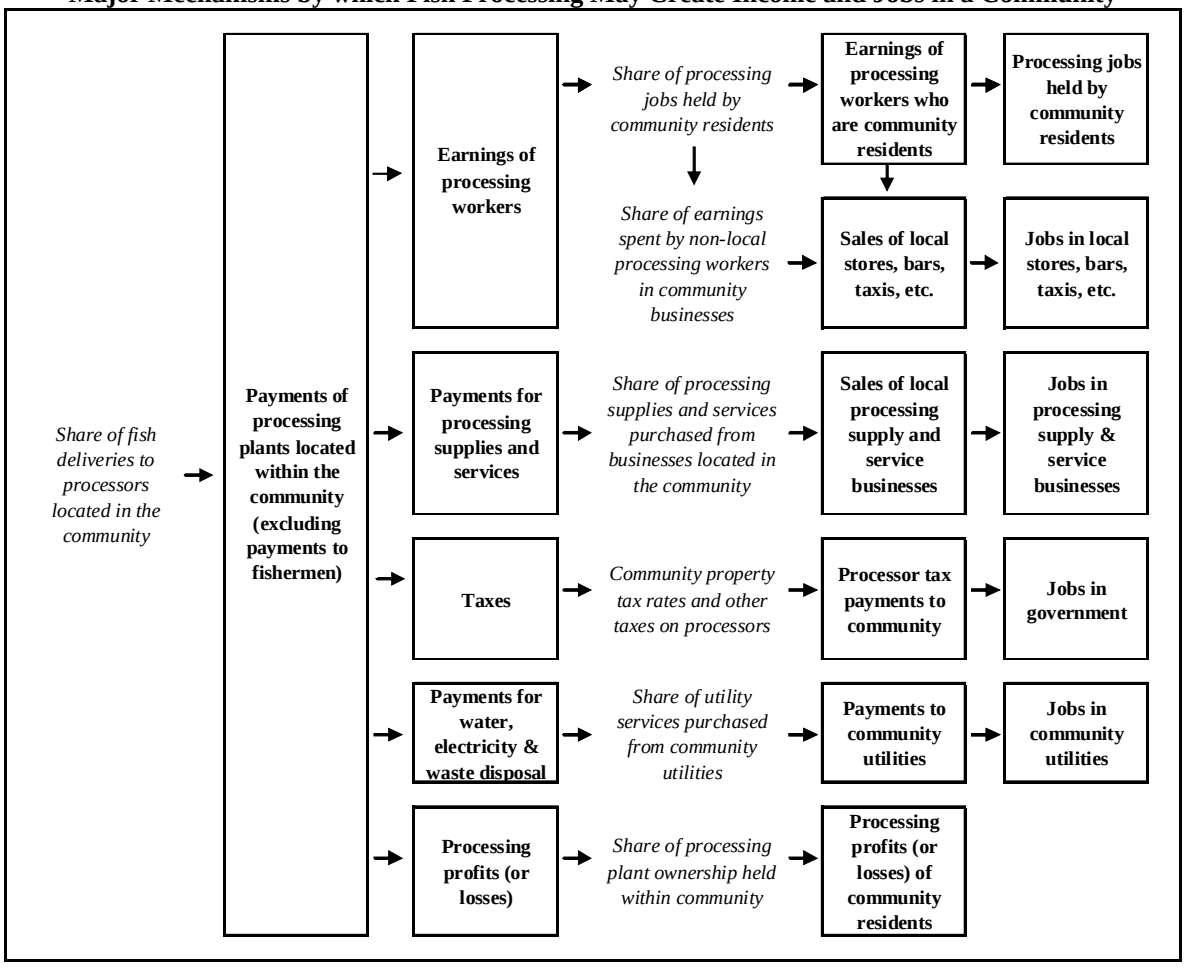


Figure V-2 summarizes some of the most important mechanisms by which *fish processing* may potentially create incomes and jobs within a community. Fish processing may create income and jobs not only at processing plants, but also indirectly through money spent by workers and processors at local businesses, tax revenues communities receive from processors, and utility payments by processors. In turn rationalization could theoretically affect income and jobs in a community not only by affecting income and jobs in processing, but also by affecting community tax revenues, sales of local businesses, and utility revenues.

Figure V-2
Major Mechanisms by which Fish Processing May Create Income and Jobs in a Community



In practice, different communities are likely to be affected by rationalization in different ways, because communities differ in the ways in which they are affected economically by fishing and processing. As we discuss in this chapter, in the three Aleutians East Borough communities studied in this report, the economic impacts of the first year of rationalization occurred primarily as a result of changes in fishing jobs and income and changes in sales of fishing service and supply businesses. Because there were no major changes in the share of crab landed in either King Cove or Akutan, crab rationalization does not appear to have caused significant changes in fish tax revenues or processing activity in the first year of rationalization.

Direct Economic Impacts of Crab Rationalization on King Cove

Fishing Jobs and Income

Probably the most significant direct economic impact of crab rationalization on King Cove has been the loss of crab fishing jobs in the Bristol Bay Red King Crab fishery and the Bering Sea Snow Crab fishery.

The City of King Cove's Community Development Survey, taken during the winter of 2006, provides the most direct indicator of the effect of crab rationalization on crab fishing jobs for King Cove residents. We requested that the following questions be included in the survey:

17. Did any member of your household fish as a skipper or crewmember in any Bering Sea or Aleutians crab fishery during the 2004-2005 season—the last season before the crab fisheries were "rationalized"?

____ Yes (continue with 17a-17c) ____ No (go to question 18)

17a. How many fished in the Bristol Bay king crab fishery? _____
17b. How many fished in the Bering Sea opilio crab fishery? _____
17c. How many fished in other Bering Sea or Aleutians crab fisheries? _____

18. Did any member of your household fish as a skipper or crewmember in any Bering Sea or Aleutians crab fishery during the 2005-2006 season—the first season after the crab fisheries were "rationalized"?

____ Yes (continue with 18a-18d) ____ No (go to question 20)

18a. How many fished in the Bristol Bay king crab fishery? _____
18b. How many fished in the Bering Sea opilio crab fishery? _____
18c. How many fished in other Bering Sea or Aleutians crab fisheries? _____

(if the answer to #18 was different than the answer to question 17)

18d. Why was there a change in the number of household members fishing for crab between last year and this year?

19. Was there any difference in how members of your household were paid for crab fishing this year, compared to other years?

As shown in Table V-1, the number of households participating in the Bristol Bay red king crab fishery fell by 13, or 68%. The number of households participating in the Bering Sea opilio crab fishery fell by 12, or 71%. Because some households likely had multiple household members who fished for crab, the decline in the number of BSAI crab fishing jobs[24] likely exceeded the decline in the number of households with members who fished for crab

Table V-1
King Cove Households' Participation in BSAI Crab Fisheries
Before and After Crab Rationalization

Fishery	2004-05	2005-06	Change	% Change
Any crab fishery	31	20	-11	-35%
Bristol Bay red king crab fishery	19	6	-13	-68%
Bering Sea opilio crab fishery	17	5	-12	-71%
Other BSAI crab fisheries	27	19	-8	-30%
All three fisheries	12	2	-10	-83%
Two fisheries	6	5	-1	-17%
Only one fishery	12	14	2	17%

Source: King Cove Community Development Survey, responses to questions 17 & 18. Responses for "any crab fishery" are from a data file of survey results provided by the City of King Cove. Other data are from Table 18 of a report entitled "Community Development Survey Results" prepared for the City of King Cove by Cordova Consulting. Based on responses of 136 households.

This is consistent with an estimate by Dr. Lowe, developed through key informant interviews, that 20 King Cove residents lost crab fishing jobs in the 2005-06 season as a result of rationalization. This estimate is based on a count of specific individuals who would probably have fished for BSAI crab in 2006 if the crab fisheries had not been rationalized, based on their past participation in these fisheries. This estimate does not distinguish between jobs lost in the the Bristol Bay Red King Crab fishery and the Bering Sea Snow Crab fishery. Most of these individuals who lost jobs would probably have fished in both fisheries.

Question 18d of the King Cove community survey asked (for those households which responded a change between seasons in whether household members had fished for crab):

18d. Why was there a change in the number of household members fishing for crab between last year and this year?

Most of the households which responded to this question attributed the change to rationalization.[25] Responses coded in the survey results were as follows:

Because of rationalization (5 responses)

Because of rationalization. My husband no longer participates in crab fisheries

[24]For this discussion, we define a crab fishing "job" as fishing on a crab vessel during a particular fishery, regardless of the length of time for which the fishery is open or the days of work involved.

[25] One household in which a household member fished for crab in 2004-05 but not 2005-06 responded "They had a choice of cod and tanner, not both. The boat chose cod over crab."

Crews couldn't make anything after "rationalization"

Loss of jobs locally - mostly outside boats and fishermen are left for crabbing industry

Due to rationalization and the new quota program being implemented

Did not go king crab because no jobs were available

Rationalization - no crew jobs - no skipper jobs

Boat leased out to the quota shares

Question 19 of the King Cove community survey asked (for those households which responded that a household member had fished for crab in 2005-06)::

19. Was there any difference in how members of your household were paid for crab fishing this year, compared to other years?

Responses coded in the survey results were as follows:

Because of rationalization (5 responses)

Because of rationalization. My husband no longer participates in crab fisheries

Crews couldn't make anything after "rationalization"

Loss of jobs locally - mostly outside boats and fishermen are left for crabbing industry

Due to rationalization and the new quota program being implemented

Did not go king crab because no jobs were available

Rationalization - no crew jobs - no skipper jobs

Boat leased out to the quota shares

Tables V-2 and V-3 provide very approximate estimates—based on numerous assumptions—of how job losses in the Bristol Bay Red King Crab fishery and the Bering Sea Snow crab fishery may have affected the income of King Cove residents in 2005, the first year of rationalization, based on the crab fishing jobs estimates from the household survey shown in Table V-1.

As shown in Table V-2, for the Bristol Bay Red King Crab fishery we begin by assuming that without rationalization the value of the fishery would have stayed the same ($69.5 million), and the number of boats would have been the same as in 2004 (251), resulting in average gross revenue per vessel of about $277,000. Based on anecdotal evidence about crew shares, an individual crew member might have been paid about 5% of the gross revenues of the boat he fished on.[26] Across the entire fishery, this would imply that crew members would have earned an average of about $14,000 from participating in the fishery. Some crew would have earned considerably more and other considerably less, given wide variation in earnings between different boats, as well as variation in crew shares between boats and for different crew.

Table V-2

Potential Effects of Rationalization of the Bristol Bay Red King Crab Fishery on the 2005 Income of King Cove Residents, based on Assumed Average Vessel Revenue and Crew Shares With and Without Rationalization

		Without rationalization	With rationalization			
			Assuming average crew share of 3.1% (d)		Assuming average crew share of 2.5% (d)	
			Value	Change	Value	Change
Assumptions and calculations for total fishery	Total income ($000) (a)	$69,540,032	$69,540,032	$0	$69,540,032	0
	Number of vessels fishing (b)	251	89	-162	89	-162
	Average gross revenue per vessel ($)	$277,052	$781,349	$504,297	$781,349	$504,297
	Average crew share (% of gross) (c)	5.0%	3.1%	-1.9%	2.5%	-2.5%
	Average crew income	$13,853	$24,222	$10,369	$19,534	$5,681
Assumptions and calculations for King Cove residents	Average crew income	$13,853	$24,222	$10,369	$19,534	$5,681
	Number of crew jobs (e)	19	6	-13	6	-13
	Total income for the 6 residents who kept jobs	$83,116	$145,331	$62,215	$117,202	$34,087
	Total income for the 13 residents who lost jobs	$180,084	$0	-$180,084	$0	-$180,084
	Total crew income	$263,199	$145,331	-$117,868	$117,202	-$145,997

(a) Based on 2005 total ex-vessel value reported in Table II-3. (b) Based on number of vessels registered in 2004 and 2005 reported in Table II-3. (c) Average crew share of 5% of gross revenues for non-rationalized fisheries based on discussions with crab vessels captains and crew. (d) Based on estimate in Gunnar Knapp, *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis* (2006), page 41, Table 5, that rationalization may have reduced the share of captains and crew in total earnings by between 38% and 58%. (e) Based on King Cove household survey.

Rationalization reduced the total number of boats fishing to only 89—dramatically increasing average earnings per boat to about $781,000. However, as discussed in Chapter II, rationalization also reduced the share of individual crew members in gross revenues of the boats they fished on, because most boats deducted the royalty costs for leased quota before calculating crew shares. A very rough estimate is that average crew shares of gross revenue may have been reduced from about 5% to between 3.1% and 2.5% of gross revenue. Thus average income for crew in the rationalized fishery may have risen to between $24,000 and $19,500—higher than if the fishery had not rationalized but not as high as if crew shares had stayed the same.

The survey results in Table V-1 suggest that of 19 residents who had jobs in the Bristol Bay red king crab fishery in 2004, 13 lost their jobs in 2005 while 6 kept their jobs. Given these

[26] Note that this assumption is 5% of *gross* revenues. Crew shares (which typically are larger than 5%) are typically shares of *net* revenues after deducting taxes and fuel costs from gross revenues.

assumptions, the total income of the 6 King Cove residents who didn't lose their fishing jobs would have increased from $83,000 to between $145,000 and $117,000. However, the total income of the 13 residents who lost their fishing jobs would have fallen by about $180,000. Thus the net loss in income to King Cove residents would have been between $118,000 and $146,000.

Using the same methodology, in the Bering Sea Snow Crab fishery rationalization may have resulted in a net loss of income to King Cove residents of between $88,000 and $99,000 (Table V-3).

Table V-3
Potential Effects of Rationalization of the Bering Sea Snow Crab Fishery on the 2005/06 Income of King Cove Residents, Based on Assumed Average Vessel Revenue and Crew Shares With and Without Rationalization

			With rationalization			
			Assuming average crew share of 3.1% (d)		Assuming average crew share of 2.5% (d)	
		Without rationalization	Value	Change	Value	Change
Assumptions and calculations for total fishery	Total income ($000) (a)	$27,663,720	$27,663,720	$0	$27,663,720	0
	Number of vessels fishing (b)	164	78	-86	78	-86
	Average gross revenue per vessel ($)	$168,681	$354,663	$185,982	$354,663	$185,982
	Average crew share (% of gross) (c)	5.0%	3.1%	-1.9%	2.5%	-2.5%
	Average crew income	$8,434	$10,995	$2,560	$8,867	$433
Assumptions and calculations for King Cove residents	Average crew income	$8,434	$10,995	$2,560	$8,867	$433
	Number of crew jobs (e)	17	5	-12	5	-12
	Total income for the 6 residents who kept jobs	$42,170	$54,973	$12,802	$44,333	$2,163
	Total income for the 13 residents who lost jobs	$101,209	$0	-$101,209	$0	-$101,209
	Total crew income	$143,379	$54,973	-$88,406	$44,333	-$99,046

(a) Based on 2005 total ex-vessel value reported in Table II-4. (b) Based on number of vessels registered in 2004 and 2005 reported in Table II-4. (c) Average crew share of 5% of gross revenues for non-rationalized fisheries based on discussions with crab vessels captains and crew. (d) Based on estimate in Gunnar Knapp, *Economic Impacts of BSAI Crab Rationalization on Kodiak Fishing Employment and Earnings and Kodiak Businesses: A Preliminary Analysis* (2006), page 41, Table 5, that rationalization may have reduced the share of captains and crew in total earnings by between 38% and 58%. (e) Based on King Cove household survey.

The estimates in Table V-2 and V-3 are based on numerous assumptions and should be considered highly approximate. However, they do suggest that job losses from crab fishing may have resulted in a net loss of income to King Cove residents of more than $200,000.

Harbor Use and Fees

As discussed in Chapter III, the King Cove harbor is operated by the City of King Cove. The city has been concerned that fleet consolidation and/or changes in landings resulting from crab rationalization could lead to a decline in use of the harbor and associated revenues from transient vessel moorage and pot storage.

The King Cove harbormaster, David Bash, described the effects of rationalization on the use of the new harbor by large crab vessels as follows:[27]

> *"Before rationalization it was very busy. Every single spot was taken up in the new harbor, plus we had a few boats along what we call the T dock in the old*

[27] Paraphrased from notes taken during a telephone interview by Gunnar Knapp, May 15, 2007.

harbor. So we definitely had a full house—as many as sixty boats. They were getting their crab pots ready and waiting for the tank inspections before heading out fishing. About a third to a half would deliver here.

The king crabbers would come in a week or two ahead of the king crab season (to load crab pots). Once the king crab season was over, they would come back to town and offload their pots. Some would convert to opies while waiting to deliver. They'd leave their boats here in town until the opie season. The guys who would leave their boats here would be gone a month.

The first year of crab rationalization we probably saw a total of between 10 and 12 boats—whereas before we were doing between 50 and 60 boats—so it dropped off that much. And it wasn't a big rush right prior to the season, like in the derby days. They trickled in a lot slower. There wasn't any big rush. And we didn't have boats staying over between seasons. That's where the harbor lost most of its revenue. Generally the ones we did get were ones that had stored their pots here."

Community residents interviewed by Dr. Lowe estimated that during pre-rationalization crab fisheries about 65 crab boats typically used the King Cove boat harbor, either to deliver crab to Peter Pan Seafoods, purchase supplies, or pick up and store crab pots. During the 2005-06 season, the estimated number of crab vessels using the harbor dropped to 14.

The harbor earns revenue from transient crab vessels in two major ways[28]:

- Moorage fees ($50/day for 91-105 foot boats and $60/day for 107-125 foot boats)
- Over-the-dock pot fees of $1.50/pot (charged for both onloading and offloading)

Table V-2 summarizes King Cove Harbor revenues from these fees for the months corresponding approximately to the Bristol Bay Red King Crab season (October-December) and the Bering Sea Snow Crab season (January-March) for the years 2004-05 (the last year prior to rationalization) and the 2005-06 and 2006-07 (the first two years of rationalization). Both kinds of fees showed a significant decline during the first two years of rationalization.

[28] Transient vessels also pay forklift fees. Total forklift fees paid by all users of the King Cove harbor between October and March 2004-05 were $2125.

Table V-4
King Cove Harbor Transient Moorage and Pot Onloading/Offloading Fees

	Transient Moorage			Pot Onloading/Offloading Fees		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
July	$4,810	$8,555	$8,765	$0	$0	$66
August	$60	$8,524	$10,565	$0	$687	$0
September	$0	$3,520	$6,230	$0	$1,094	$520
October	$17,035	$4,525	$7,694	$533	$1,865	$3,760
November	$0	$1,335	$1,945	$20,321	$2,427	$2,064
December	$215	$50	$350	$158	$60	$0
January	$7,975	$3,216	$4,660	$6,695	$0	$2,315
February	$7,715	$8,085	$3,125	$1,613	$5,666	$143
March	$80	$3,925	$2,225	$1,193	$0	$1,662
April	$7,240	$6,518	$1,070	$54	$0	$1,761
May	$730	$3,015	$2,125	$0	$0	$0
June	$10,145	$4,675	NA	$0	$0	NA
Oct.-Dec., Total	$17,250	$5,910	$9,989	$21,011	$4,352	$5,824
Jan-Mar., Total	$15,770	$15,226	$10,010	$9,500	$5,666	$4,119
Oct-Mar., Total	$33,020	$21,136	$19,999	$30,510	$10,017	$9,943

Source: City of King Cove.

Table V-5 shows the changes in King Cove Harbor revenues from these fees during the first two years of rationalization, in comparison with the last year prior to rationalization (2004-05). In each year, the combined revenues from both types of fees for the combined seasons (October-March) declined by about $32,000, or approximately one-half. Combined transient moorage fees declined by about one-third, and combined pot onloading/offloading fees declined by about two-thirds.

Table V-5
Changes In King Cove Harbor Transient Moorage and Pot Onloading/Offloading Fees During the First Two Seasons of Rationalization, Compared with 2004-05

	Type of Fee	Year	Bristol Bay Red King Crab Fishery (Oct-Dec)	Bering Sea Snow Crab Fishery (Jan-Mar)	Combined fisheries (Oct-Mar)
Change	Transient Moorage frees	2005-06	-$11,340	-$544	-$11,884
		2006-07	-$7,261	-$5,760	-$13,021
	Pot On/Off Fees	2005-06	-$16,659	-$3,834	-$20,493
		2006-07	-$15,187	-$5,381	-$20,567
	Combined Fees	2005-06	-$27,999	-$4,378	-$32,377
		2006-07	-$22,448	-$11,141	-$33,588
% Change	Transient Moorage frees	2005-06	-66%	-3%	-36%
		2006-07	-42%	-37%	-39%
	Pot On/Off Fees	2005-06	-79%	-40%	-67%
		2006-07	-72%	-57%	-67%
	Combined Fees	2005-06	-73%	-17%	-51%
		2006-07	-59%	-44%	-53%

Source: City of King Cove data in Table V-4.

Total King Cove harbor revenues from all fees were $298,000 in FY 2004-05 (Table V-6). Thus the decline in transient moorage and pot onloading/offloading fees attributable to rationalization represented about 10% of total harbor revenues. Note however that crab rationalization was not the only factor affecting harbor revenues. In 2005-06, transient moorage revenues increased for

the periods July-September and April-June, offsetting the decline in transient moorage revenues during the October-March crab seasons. In 2005-06, annual moorage fees declined and quarterly moorage fees also increased. As is to be expected given the diversity of fisheries in which regular and transient users of the King Cove harbor participate, other factors affecting harbor use tended both to amplify and offset the negative effects of crab rationalization on King Cove harbor use and revenues.

Table V-6
Total King Cove Harbor Revenues, 2004-05 and 2005-06

	Annual moorage	Quarterly moorage	Transient moorage	Travel lift	Pots in/out	Other	Total
2004-05	$77,435	$23,030	$56,005	$33,493	$30,564	$77,932	$298,458
2005-06	$60,309	$29,646	$55,943	$38,906	$11,798	$76,020	$272,622
Change	-$17,126	$6,616	-$62	$5,413	-$18,767	-$1,911	-$25,837
% Change	-22%	29%	0%	16%	-61%	-2%	-9%

Source: City of King Cove.

Support Industry Sales

Another potential impact of crab rationalization on a community is through effects on spending by the crab fishing fleet in the community. With fewer crab boats delivering to King Cove and using the King Cove harbor, the spending by these boats and their crew at King Cove businesses would be expected to decline.

No data are available on how much money crab fishing boats and crew spent in King Cove prior to and after rationalization. The only available potential indicator of changes in spending by crab vessels is City of King Cove sales tax data for King Cove businesses. However, these data are confidential for individual businesses; they do not distinguish between sales to crab fishing boats and crew and other kinds of sales; and year-to-year comparisons are complicated by the fact that some businesses failed to file in some years.

For this study we compared confidential sales tax data for eight King Cove businesses for the second and third quarters of the years FY04 and FY05 (the two years prior to rationalization) and FY06 and FY07 (the first two years after rationalization).[29] As shown in Table V-7, for all eight companies combined, second and third-quarter sales increased by about 6%. Five of the eight companies experienced and increase in sales. However, one business experienced a decrease in sales of less than 10%, and two businesses experienced a decrease in sales of more than 10%.

Table V-7

Changes in Revenues of Eight King Cove Businesses Between the Two Years Prior to Rationalization (FY04 & FY05) and the First Two Years After Rationalization (FY06 & FY07)

		Second quarter	Third quarter	Second & third quarters
% change in revenues for all eight companies		4%	7%	6%
Number of companies for which revenues:	Increased	5	6	5
	Decreased by less than 10%			1
	Decreased by more than 10%	3	2	2

Note: Excludes one company which did not file sales tax reports in FY06 and FY07.
Source: City of King Cove sales tax data.

From these sales data, it is difficult to see any clear negative effect of crab rationalization on the sales of King Cove businesses—with the clear exception of one company which is very dependent on the crab fishery and which experienced a dramatic reduction in sales. Note that this does not mean that sales of the other seven businesses may not have been affected by crab rationalization. However, any such effects were smaller than the effects of changes occurring over the same period of time in other fisheries and other factors affecting the King Cove economy.

[29] These businesses were Peter Pan Seafoods, Alaska Commercial Company, MC's Bar, Rhonda's Rams General, KCC Corp., King Cove China, Mack Trucking, and Filter Sales.

Quota Share Recipients

One way in which a community might receive direct economic benefits from crab rationalization is if community residents receive crab quota share (and corresponding annual crab individual fishing quota). However, these benefits were very limited for King Cove residents.

Only four residents of King Cove received initial allocations of crab quota share, which yielded 75,561 pounds of IFQ for the 2005-06 season (Table V-8). More than 80% of this went to one person. King Cove residents' IFQ was 0.26% (about 1/380th) of the total Bristol Bay Red King Crab IFQ issued for the fishery, about 0.08% (about 1/1200th) of the total Bering Sea Snow Crab IFQ issued, and about 0.13% (about 1/750th) of the total IFQ pounds for all fisheries.

Table V-8
Crab IFQ Holdings of King Cove Residents (pounds)

Resident	Type	Fishery	2005-06	2006-07	2007-08
A	Catcher Vessel Owner (CVO)	Bristol Bay Red King Crab	38,208	32,251	42,312
		Bering Sea Snow Crab	20,559		
		Bering Sea Bairdi Tanner crab	3,617		
		Total	**62,384**	**32,251**	**42,312**
B	Catcher Vessel Crew (CVC)	Bristol Bay Red King Crab	2,857	1,262	1,655
		Bering Sea Bairdi Tanner crab	431		
		Eastern Bering Sea Bairdi Tanner Crab		186	342
		Western Bering Sea Bairdi Tanner Crab		109	216
		Total	**3,288**	**1,557**	**2,213**
C	Catcher Vessel Crew (CVC)	Bristol Bay Red King Crab		1,149	
		Bering Sea Snow Crab	3,148		
		Eastern Bering Sea Bairdi Tanner Crab		309	
		Western Bering Sea Bairdi Tanner Crab		180	
		Total	**3,148**	**1,638**	
D	Catcher Vessel Crew (CVC)	Bristol Bay Red King Crab	2,240	1,891	
		Bering Sea Snow Crab	4,199		
		Bering Sea Bairdi Tanner crab	302		
		Eastern Bering Sea Bairdi Tanner Crab		347	
		Western Bering Sea Bairdi Tanner Crab		203	
		Total	**6,741**	**2,441**	
Total		Bristol Bay Red King Crab	43,305	36,553	43,967
		Bering Sea Snow Crab	27,906	0	0
		Bering Sea Bairdi Tanner crab	4,350	0	0
		Eastern Bering Sea Bairdi Tanner Crab	0	842	342
		Western Bering Sea Bairdi Tanner Crab	0	492	216
		Total	**75,561**	**37,887**	**44,525**

Source: Crab IFQ holder data downloaded from annual crab IFQ holders databases posted on NMFS RAM Division website page for "Permits Issued for BSAI Crab Rationalization" at http://209.112.168.2/sustainablefisheries/crab/rat/ram/permits.htm.

Note that although the rationalization regulations included a provision for "captains and crew," to receive quota share, qualifying crew were required to have made landings (signed fish tickets). Thus in practice "Catcher Vessel Crew" quota share was allocated only to captains. Since most King Cove crab fishermen were deckhands rather than vessel owners or captains, most received no initial allocations of quota share.

Only one resident of King Cove (resident A), has the ability to fish his own quota as a recipient of a sufficient initial amount of "Catcher Vessel Owner" (CVO) quota share. That resident's son (resident B), fishes his quota on his father's boat. The other two residents are leasing out their quota as they were not allocated enough to fish their quota themselves.

Crab Landings

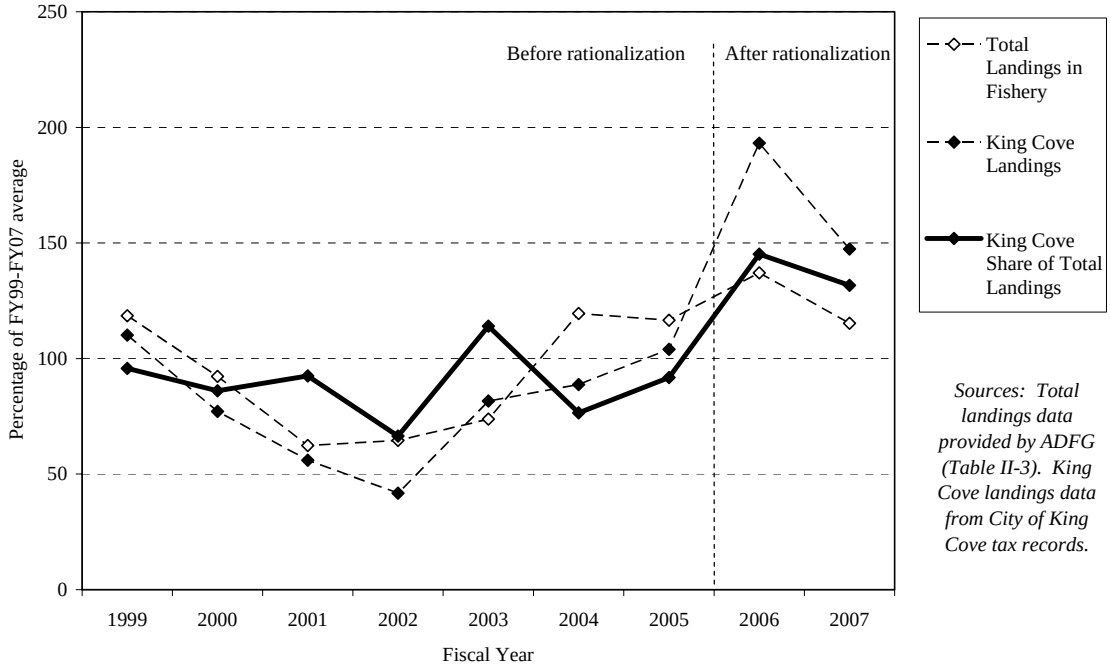
Several potentially important direct economic impacts of crab rationalization could occur if rationalization causes a change in the distribution of change crab landings among communities, resulting in more or less crab being landed in the community than would have occurred in the absence of rationalization. Changes in landings could result in changes in processing employment, changes in tax revenues, and changes in sales of local businesses which provide supplies or services to the crab fishing fleet.

The City of King Cove collects detailed data on monthly landings of fish by species. However these data are confidential because the landings are for a single processor. For this study, in order to maintain confidentiality, we analyze annual King Cove crab landings in terms of percentages of averages for the nine-year period from fiscal year 1999 through fiscal years 2007.

Figure V-3 shows trends for the Bristol Bay Red King Crab fishery in total landings, King Cove landings, and King Cove's share of total landings. On the vertical axis, 100 represents the average for the period FY99-FY07. Total landings were above the nine-year average in both the two years prior to rationalization and the two years after rationalization. Compared with FY2004 and FY2005, total landings were higher in FY2006 (the fall 2005 fishery) and about the same in FY2007 (the fall 2006 fishery). King Cove landings increased relatively more than total landings in both FY2005 and FY2007. As a result, King Cove's share of total landings (shown by the dark line) was higher in the two years after rationalization than in any of seven years prior to rationalization.

Figure V-3

Total Fishery Landings, King Cove Landings and King Cove Share of Total Fishery, Expressed as a Percentage of FY99-FY07 Average: Bristol Bay Red King Crab

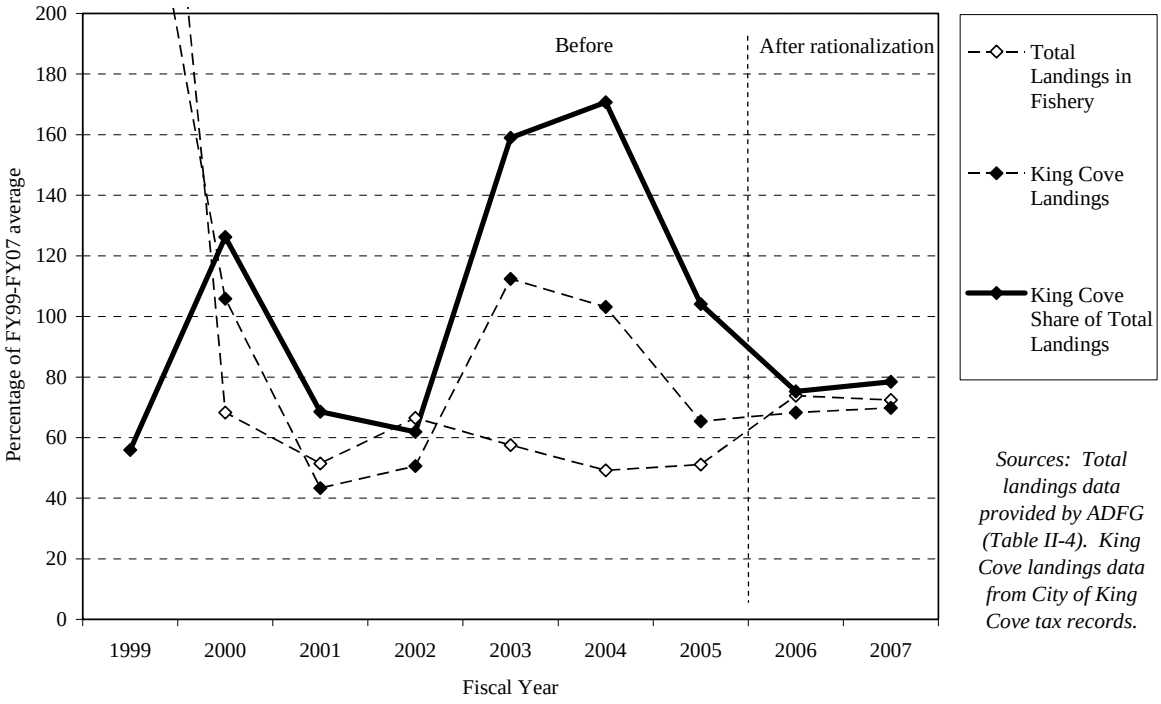


Sources: Total landings data provided by ADFG (Table II-3). King Cove landings data from City of King Cove tax records.

Figure V-4 shows trends for the Bering Sea Snow Crab fishery in total landings, King Cove landings, and King Cove's share of total landings. As was the case with the Bristol Bay Red King Crab fishery, total landings in the fishery increased in the first two years of rationalization, compared with the period FY2000-FY2005. However, unlike the Bristol Bay Red King Crab fishery, King Cove landings of Bering Sea Snow Crab remained about the same as in FY 2007and were significantly lower than in FY2003 and FY2004. As a result, King Cove's share of total landings in the Bering Sea Snow Crab fishery decreased during the first two years of rationalization.

Figure V-4

Total Fishery Landings, King Cove Landings and King Cove Share of Total Fishery, Expressed as a Percentage of FY99-FY07 Average: Bering Sea Opilio Crab



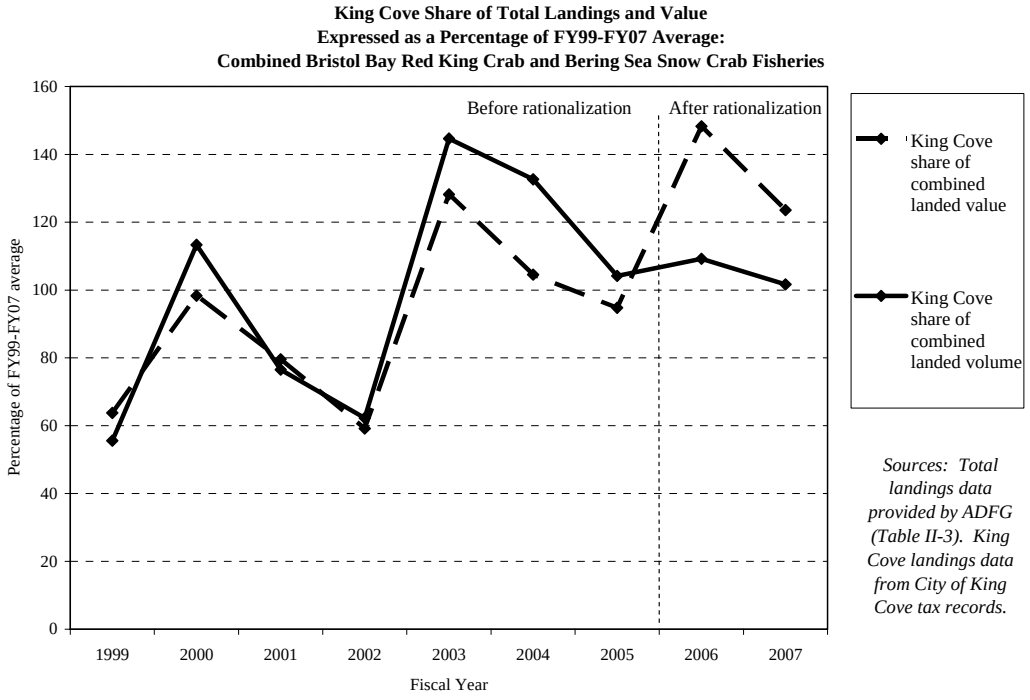
Sources: Total landings data provided by ADFG (Table II-4). King Cove landings data from City of King Cove tax records.

There is no immediately obvious reason why King Cove's share of landings during the first two years of rationalization would have gone up for the Bristol Bay Red King Crab fishery and down for the Bering Sea Snow Crab fishery. To the extent that rationalization may have been a factor, the effects of rationalization may have differed between the two fisheries.

Figure V-5 shows the trend in King Cove's share of total landed volume and landed value in the Bristol Bay Red King Crab and Bering Sea Snow Crab fisheries combined. King Cove's share of total landed volume in both fisheries combined was about the same in FY06 and FY07 as it was in FY05 (which was down slightly from the two previous years). In effect, the changes in the two fisheries approximately balanced each other out.

King Cove's share of total landed value in both fisheries was up compared to the previous seven years—because Bristol Bay Red King Crab commanded a higher ex-vessel price than Bering Sea Snow Crab.

Figure V-5



Given these trends, it would be difficult to conclude that crab rationalization had either a significant positive or negative effect on total King Cove crab landings or landed value in the first two years of rationalization.

The recent merger of Nichiro (parent company of Peter Pan Seafoods, Inc.) and Maruha (parent company of Westward Seafoods, Inc. and Alyeska Seafoods, Inc.) has raised concerns that the combined company could possibly consolidate its crab processing operations at the Westward Seafoods plant in Dutch Harbor.[30] This kind of consolidation would have been more difficult prior to rationalization, due to capacity constraints during a shorter processing window. If such a shift in crab processing away from King Cove were to happen, it could be considered an indirect effect of crab rationalization—in the sense that it would have been less likely if rationalization

[30] Wesley Loy: "Seafood Companies: Governor wants federal regulators to look into deal," *Anchorage Daily News*, June 28, 2007.

had not occurred. (We do not have any information about whether such a shift is likely or planned.)

In recent years crab accounted for about one-third of the ex-vessel value of fishery landings in King Cove, and correspondingly about one-third of the value of King Cove fisheries-related revenues and about one-fifth of total city revenues.

Direct Economic Impacts of Crab Rationalization on Akutan

The most significant direct economic effect of crab rationalization on Akutan has been a loss of jobs. Fieldwork for this study identified four Akutan residents who lost crab fishing jobs due to crab rationalization out of five who were actively crabbing. One resident kept his job aboard a Trident boat. As discussed above (see Tables V-2 and V-3) each lost fishing job might have resulted (on average) in a loss of income of about $14,000 in income (for the Bristol Bay red king crab fishery) and about $8000 (for the Bering Sea snow crab fishery). The resident who kept his job may have had an opportunity to earn more from fishing a longer season.

In fieldwork, one fishery support business reported a loss in revenue due to crab rationalization. The owner of a dive service estimated an overall annual loss of $10,000 in the post-rationalization crab season.

No Akutan residents received crab quota share.

Direct Economic Impacts of Crab Rationalization on False Pass

The most significant direct economic effect of crab rationalization on False Pass appear to have been loss support business for the crab fishery. Isanotski Corporation's Pot Storage Business reported a decrease in sales of $29,820 between FY 04-05 and FY 05-06. The manager of the pot storage business had fewer work hours and lower income.

In fieldwork we did not learn of any False Pass residents who lost or gained crab fishing jobs as a direct result of crab rationalization.[31]

No False Pass residents received crab quota share.

[31] In a subsequent discussion with an individual familiar with King Cove we were told that at least one False Pass resident may have lost a crab fishing job.

VI. COMMUNITY EXPERIENCE WITH AND PERCEPTIONS OF CRAB RATIONALIZATION

In the fieldwork component of the study, key informant interviews were conducted in each community. All key informants had commercial fishing history and the majority had been involved in the crab industry as either crab fishermen or in fishery support services. They ranged in age from 18-80.

Dr. Lowe interviewed key informants about their experiences with and perceptions of crab rationalization. Interview questions were also designed to gain greater understanding of the cumulative impacts of restricted access management in Alaskan fisheries and to contextualize crab rationalization within the range of programs coastal communities have encountered or might encounter in the future.

Numerical Ratings of Restricted Access Programs

Dr. Lowe asked 14 informants from King Cove, 7 informants from Akutan and 1 informant from False Pass to numerically rate effects of the following six restricted access programs[32]:

- Salmon Limited Entry
- Halibut/Sablefish IFQ
- BSAI Pollock Co-Ops
- Crab Rationalization
- CDQ
- Future Proposed Rationalization of Gulf of Alaska (GOA) Groundfish

Informants were asked to rate how each management plan affected them personally and how each plan affected their community, using the following scale:

1 = Extremely Helpful 2 = Helpful 3 = Neutral 4 = Harmful 5 = Extremely Harmful

Table VI-1 and Figure VI-1 (on the following page) summarize the ratings of King Cove and Akutan respondents. Note that because of the small sample sizes and the non-random selection of respondents, these ratings are not necessarily representative of perceptions of rationalization by the entire population of these communities. They do however highlight the experiences and perceptions of a substantial part of the population of commercial fishermen in each community.

[32] Note that only one key informant interview was conducted in False Pass with a community elder. The four active fishermen in False Pass were fishing an extension of a cod opener during the fieldwork visit. The one informant's responses were excluded here as it is only one data point for the community. This informant's responses were similar to the average for King Cove responses.

Table VI-1

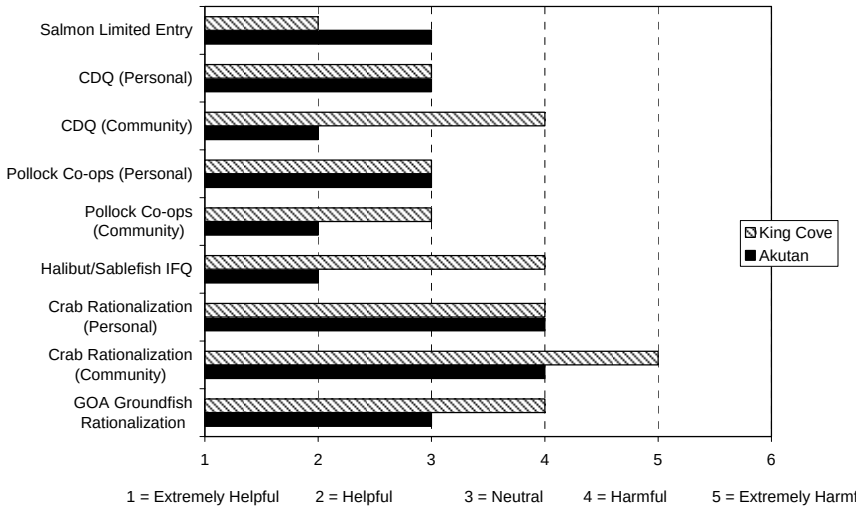
Numerical Ratings of Rationalization Programs: Summary of Responses

Community	Program	Effect	Average response	Number of Responses					Number of respondents
				Extremely helpful (1)	Helpful (2)	Neutral (3)	Harmful (4)	Extremely harmful (5)	
King Cove	Salmon Limited Entry	Personal	2	5	4	3	1	1	14
		Community	2	5	6	3	0	0	14
	Halibut/Sablefish IFQ	Personal	4	2	0	0	4	8	14
		Community	4	0	0	2	6	6	14
	CDQ Program	Personal	3	0	1	8	5	0	14
		Community	4	0	1	6	6	1	14
	BSAI Pollock Co-ops	Personal	3	0	0	12	2	0	14
		Community	3	0	6	8	0	0	14
	BSAI Crab Rationalization	Personal	4	0	1	4	2	7	14
		Community	5	0	0	2	3	9	14
	Proposed GOA Groundfish	Personal	4	0	2	2	3	7	14
		Community	4	0	0	1	6	7	14
Akutan	Salmon Limited Entry	Personal	3	0	1	5	1	0	7
		Community	3	0	1	5	0	1	7
	Halibut/Sablefish IFQ	Personal	2	2	1	3	1	0	7
		Community	2	2	3	0	2	0	7
	CDQ Program	Personal	3	1	1	4	1	0	7
		Community	2	2	4	1	0	0	7
	BSAI Pollock Co-ops	Personal	3	1	1	5	0	0	7
		Community	2	2	3	1	1	0	7
	BSAI Crab Rationalization	Personal	4	0	0	2	1	4	7
		Community	4	1	0	1	1	4	7
	Proposed GOA Groundfish	Personal	3	0	0	6	0	1	7
		Community	3	1	2	2	1	1	7

Source: Fieldwork interviews.

Figure VI-1

Average Numerical Ratings of Restricted Access Programs



The ratings generally suggest the following about informants' experience with and perceptions of restricted access management programs:

- Different rationalization programs have had different effects. For example, effects were perceived as relatively favorable for salmon limited entry, and very unfavorable for crab rationalization.

- The ratings differ between King Cove and Akutan because Akutan has never had viable salmon fisheries but has been able to participate in the Halibut/Sablefish IFQ program through the CDQ program.

- Informants viewed effects on themselves personally and on their communities in the same way for Salmon Limited Entry and the Proposed Gulf of Alaska Groundfisheries Rationalization programs.

- Informants perceive management programs that keep participation local as helpful and those that don't as harmful.

These ratings were supplemented with informant explanations. The following 6 themes emerged within this discussion as informant concerns:

1. Diminishing Local Participation in Fisheries

2. Problems with IFQ Programs

3. Lack of Entry-Level Opportunities

4. Perception of a Lack of Transparency in NPFMC Process

5. Potential Negative Effects of Future Programs Modeled on Crab Rationalization

6. Implications of Processor Quota Share

Below, we review these themes using interview excerpts that address them.

1. Diminishing Local Participation in Fisheries

AEB informants generally acknowledge that many fisheries become overcapitalized through time and that participation should be limited in some way. They are concerned, however, when restricted access management programs limit local access to their region's fisheries and they lose their rights to fish in their home areas.

King Cove informants rated the 1973 Salmon Limited Entry program as both personally helpful and as helpful for the community. One King Cove Fishermen noted if Limited Entry wasn't passed,

Then we'd have a huge amount of outside boats.

Ken Mack (age 46) of King Cove explains:

If there was no Limited Entry, there wouldn't be a salmon fishery here. There'd be so many boats we'd all be getting one fish apiece.

Mack also notes that:

Limited Entry has a double-sided sword. If there was no Limited Entry, there wouldn't be a salmon fishery even though people got knocked out of the fishery not getting a permit at the time... it controlled the fishery.

King Cove informants feel as though there were enough permits awarded at the time Limited Entry passed to maintain a high level of local participation and success in the salmon fisheries.

Similarly, Akutan rated the 1995 Halibut-Sablefish IFQ program as also personally helpful and helpful for the community because community residents have been able to continue participating in the fishery. The halibut and sablefish fisheries were in 1995 also because they were overcapitalized as Darryl Pelkey in Akutan notes:

It was just open for certain times. It was open access, but there were a lot of people showing up for the seasons. I remember seeing a hundred fifty boats fishing out of here. Yeah, that just zaps the quota in just a couple days fishing.

Ignaty Philemonoff (age 36) of Akutan notes that halibut/sablefish IFQ was beneficial for Akutan because:

You still get to go out and fish but there's not as much people that fish anymore because of IFQs.

Akutan currently has access to the halibut fishery because of loans provided to community residents by the CDQ organization, APICDA. King Cove was not included in the CDQ program and so does not have access to these types of low interest loans that offset the high price of IFQs.

King Cove Informants feel that the problem of overcapitalization has been addressed in these fisheries through these programs, but because of the high cost of halibut quota today, King Cove fishermen note that the fishery is now dominated by outside boats. Rob Trumble explains:

Yeah, they took all of the opportunities away. The economy that was created by halibut, was again, sent to Seattle. That is where the boat owners are, that is where the money went, that is where the IFQs went. It didn't stay locally. I see a time in the future when Alaskans won't be able to fish in Alaska water. They are chipping away at us all the time. There is getting to be less and less of us there.

The crab rationalization program also addressed overcapitalization in crab fisheries but AEB informants perceived the program to be on average personally harmful to informants and

extremely harmful to the community of King Cove. A primary informant concern again was the problem of rights to participation leaving the communities within the IFQ structure. Ken Mack (age 46) of King Cove notes:

It was put together by a group of too many special interests which recaptured the fishery for themselves. It wasn't built for—it had nothing to do with the people that participated. They keep saying it was the boat owners and the processors because they had so much invested but not one boat owner would've made a dime if they didn't have skippers and crews. A lot of them were multiple boat owners—they couldn't run three boats at one time. It was impossible. They didn't define, quantify the help of the hired skippers, crew—everyday that they were out there they were just as valuable—they were more valuable than the engine of the boat really. If you didn't have a crew, you never caught a crab. I don't know one boat out there that went out without a crew member. Or a hired skipper! A boat just cannot go without a skipper and crew. It's just high-powered interest groups that set aside a gold mine for themselves.

All three study communities have a history with crab fishing but because of the way the fishery was structured, residents were generally crewmen on large vessels owned by outside fishermen. The crab rationalization IFQ program of initial QS issuance did not include deckhands.

2. Problems with IFQ Programs

AEB informants report experiencing three main problems with IFQ programs:

- Loss of jobs with increasing levels of leased quota
- Lack of recognition of historical participation in IFQ fisheries

Loss Of Crew Jobs With Increasing Levels Of Leased Quota

Longtime AEB crab crewmen report that they have lost their crab jobs after crab rationalization as quota is "stacked" (leased out) by the boats that employed them. A King Cove Fisherman (age 41) explains the perspective of crewmen:

One of the boats I fished on, he doesn't even go crabbing anymore. So there's four deckhands out of a job right there. Plus the guy running the boat…that's a lot of money for us that went to someone else. The owners get their money but we don't get nothing. And the captains get their share but the crews don't get anything out of it so…we lost out on it. Some of these guys, the way they pay their crew, a lot of them guys aren't gonna go back to that same boat.

Some AEB crewmen also feel that crab rationalization has engendered a new payment structure for crewmen that has made the remaining jobs on other boats undesirable and that has resulted in "greenhorn shares" for experienced hands.

Anecdotal evidence from informants highlights the perceived current practices of vessel owners who are fishing "stacked" quota as paying their crewmen only a percentage of their own vessel's quota although the crewmen have to work all of the quota on a particular boat. Fishermen also

noted that some vessel owners are changing crew shares to a flat per diem of $100/day for crewmen and $250/day for captains. For AEB fishermen, these changes in payment structure are perceived to be inadequate incentive and compensation for a very dangerous job.

Ken Mack (age 46) describes it:

Since the rationalization they got this thing where all the boat owners have been taking a royalty and then paying the crew after the royalty which all they do is give the crew member half of what they were given. Every boat that fishes out of King Cove has cut not only crewmen cut, their pay has been cut. Sometimes less. They take 70 percent off the top for royalties and then they take another seventy of that thirty…It's going to weed out all the good crew members. The biggest reason they all said was the race for fish, got to stop the race for fish, it's too dangerous, it's gonna get more dangerous. The good crew members with experience are gonna quit fishin' , they're not gonna go fishin' for cotton wages. They're gonna quit and then they're gonna hire what they're gonna hire. Inexperienced crewmen. And then you get back to all the accidents…I talked to a crew member the other day and he said…he's not gonna make it. Take the royalties, take the 70 percent, that's fine. But don't take 70 of their 30 again. Not much left at the end.

An Akutan Fisherman (age 30) states:

People have worked their whole lives to get a full share and they lose their jobs overnight.

Ignaty Philemonoff, Akutan Crewman

Ignaty Philemonoff (age 36) of Akutan also lost his crew job after rationalization:

ML: You didn't have a king crab job this past year in 2005?

IP: No, I didn't. The boat leased out their permit to another boat and the boat stayed in Seattle.

ML: What boat was that?

IP: Called the Northwind. I was on there for almost 9 years.

IP: I wouldn't be looking for no crab job now. They way they're paying right now is just—that's just greenhorn shares now. I've seen a lot of boats and a lot of captains that came in here and they said, Ig, you're kinda lucky you didn't go, you know, because you think of all the expenses and the fuel, the taxes…everything like that—they barely made out…I mean, I don't see how the captains and the owners came out with…the easy way out and the deckhands came out with nothing. If it wasn't for deckhands they wouldn't have no crab.

Lack of Recognition of Historical Participation in IFQ Fisheries

AEB informants feel that the substantial fishing history of crewmen is overlooked in IFQ allocation schemes. They also feel that in many cases the IFQ initial allocations that were made were too small to be feasibly fished. Fishermen in King Cove for example report that the current high price of halibut quota share today prevents fishermen in King Cove from being able to buy it.

Likewise within the crab rationalization program, participation in crab fisheries was generally as crew which precluded many community residents from being awarded intial QS issuance. Residents report problems with applying to buy QS and also anticipate the cost to be too high.

Connie Newton (age 47) of King Cove explained the affect of the Halibut/Sablefish IFQ program on individual fishermen and families:

CN: IFQs are definitely harmful.

ML: To you?

CN: Yeah to my family, yeah. Because before when we used to halibut fish, we would catch three times as much poundage as what I'm restricted to now.

ML: Okay. Would you say it was harmful or extremely harmful?

CN: I would say it was extremely harmful.

ML: Okay. And how about for the town?

CN: I would say the same because it cut a lot of the local guys out that couldn't afford to buy in.

Informants explained when the Halibut/Sablefish IFQ program was first implemented the price of halibut was low and PPSF's changeover to an IFQ fishery was slow. A very small number of King Cove fishermen invested in IFQ if they were successful in other fisheries; a decision which has proven lucrative for them but these approximately 3 fishermen are out of the norm. Ken Mack (age 46) is one of the successful holders of halibut IFQ in King Cove (84,000 pounds in 2006) but he explains the dilemma for the community:

Well, the first two years of it was probably the poorest thing for the town because the cannery wasn't willing to market it and buy it, they didn't want to pay the price. But now they know how to market and buy it. They've been paying the same price—they actually right now buy more halibut and black cod than they used to during the derbies. So their revenues to the city has probably increased but their revenue to the crew members has decreased.

Some years it was advantageous to fish halibut but perhaps in some years the salmon price outweighed the costs of gearing up for halibut. Some interviewees were also deckhands in the halibut fishery or new to a captainship or boat ownership depending upon their ages. Several informants from King Cove expressed frustration with the qualifying criteria for IFQ. A veteran King Cove Fisherman, (age 80), explains:

I never did get any. I thought they were gonna beat that thing so I just tore it up and threw it away. I missed that one year, I went salmon fishing instead.

King Cove Fisherman (age 36) noted:

We had big halibut seasons, we used to do really good in halibut and I got in on the last qualifying year and was awarded small, little amounts compared to what we caught

A King Cove Fisherman (age 45) explains:

I was allocated 776 pounds. I sold it in 1996…I didn't have enough. It's not enough to gear up a boat.

Four individuals from King Cove received an initial allocation of crab QS and only one has enough to fish his IFQ on his own boat: Archie Gould. His son, Dean Gould (age 45), describes his personal fishing history in the family business:

DG: King crab I did a while. Opies I did that on the Norseman II for five years. And one year on the Northern Spirit but I'd have to figure out the years. Salmon, I did that all my life.

ML: So how old were you when you started salmon fishing?

DG: Probably twelve...

ML: Twelve, okay and you were older for these then?

DG: Yeah.

ML: Did you start doin' cod before crab?

DG: No, we did tanners, well did tanner crab, well I guess bairdi is tanner—started that in '78, '79. Deckhand on that. King crab we had here before in '82,'83 and '84. That was here, that's not counting the Bering Sea. And opies, can't remember the years, that was five years on the Norseman II. That was back in the 80s too.

ML: Were you doing cod at the same time?

DG: Yeah, we were doing cod at the same time…Salmon I started runnin' my Dad's boat in 1990 as the captain.

ML: As a captain. Were you a captain for any of these fisheries?

DG: No.

ML: How about halibut?

DG: Oh we did some halibut for the derby style. What was that five years or whatever? I got IFU.

ML: Oh you did?

DG: I didn't get IFQs, I got IFUs!

ML: IFUs? What does that stand for?

(laughter).

DG: I got screwed!

(laughter).

…

ML: Are you a boat owner?

DG: No, we actually just gonna sign papers—I'm gonna take over the Star here in a couple weeks.

ML: Is that your Dad's?

DG: Yeah, he's gonna let me buy it, yeah.

ML: OK, so and you guys, you have salmon permits?

DG: Yeah, it's in my name, probably 1989 or whatever.

ML: So what gear type?

DG: Seine permit.

ML: So you didn't get any IFQs?

DG: No, well we had three boats and we got a couple thousand pounds or whatever, out of three boats.

ML: And nothing for crab?

DG: Well, when that crab rationalization went through, the Spirit got some crab. But that's my Dad's.

ML: Oh, your Dad did get it?

DG: Yeah, we ended up gettin' a few pounds for king crab and for opies. So we didn't get screwed that time.

ML: Are you guys gonna fish it or are you gonna give it to somebody else?

DG: Yeah, we fished it, well, we fished it this last time so we'll fish it all the time.

ML: So how much quota did he get then?

DG: I think last year we almost got, I think it was thirty-thousand pounds. For king crab. Around there.

…

ML: OK, so the last question, can you think of any other ways crab rationalization has affected you, your family or your community and it can be either positive or negative. That we haven't talked about already?

DG: No… people, just downsizing the crew members on boats coming in. Hurts on down, trickles all the way down. That's about it.

ML: So for your family it wasn't that bad because you got the quota.

DG: No, we didn't get screwed like we did with halibut. We got just enough to make it worthwhile to go out.

Rob Trumble also from King Cove, is co-owner of a boat on which he captained for 18 years, earning the boat's history. He explains why he didn't fish in the post-rationalization seasons:

RT: I ended up buying my partner out of the boat after he died…

ML: So you bought into the boat, you had a partner and then when crab rationalization happened you didn't get any quota?

RT: Yes I did. I got 15% of my history. I owned 15% of the corporation that owned the boat.

ML: So how many pounds is that?

RT: I don't know. I haven't got them there. They are still tied up with him. They are tied up in the lease. They got leased out and I have to come up with $40,000 in capital gains money to separate them. I am still trying to pay for the boat.

ML: So somebody else fished them this year?

RT: Yup.

ML: It might not be that way next year though?

RT: They are getting ready to negotiate the lease again. So when they negotiate the lease, I can't come in there and take my 15% out because they have already included it in the plan. So if I don't separate before the lease is generated they are going to be in there another year. I make a little money on it; they give me 50% of what I got coming but the rest of it goes to pay for the boat.

ML: So your partner is included or did he get his own share?

RT: No, he got all of it. He got 85% of mine. My history is worth $1.8 million.

ML: And the boat owner, where was he based out of?

RT: Friday Harbor, Washington.

ML: So your partner was a fisherman?

RT: He was a salmon fisherman but never crabbed a day in his life. For him to get a copy of my fish ticket, he needed a signed affidavit from me…That tells me that history is mine, not his. I generated it. They wouldn't give him a copy unless I said he could have a copy and they gave all of it to him. That's not right .

Trumble also describes his additional dilemma of not being able to fish his captain's shares (CVC QS or colloquially known as "C-shares"):

They gave us 3% of our history but if you don't stay active in the fishery they will take them away. Now how in the hell am I supposed to stay active in the fishery if I can't go? Like I got 2200 pounds of red crab, to go get that with fuel, the crab was only worth $10,000. To pay for the fuel, the manpower, the bait, insurance, I'll go backwards to do it. I pretty much have to get more quota. But then the way they have that structured, I will have to join a co-op or create one. That means bringing in more people, more quota. You have to be a lawyer to understand what they did to us. I am not. I don't want to lose my C-shares; that tiny bit of quota that I have, if I

can separate my 15% from my partner's heirs that would help. But like I said, I have to come up with $40,000 to make that happen. I am hard pressed to keep going. If I pick up somewhere along the way, if I get sick, and I can't go out on the deck, or I break my leg, I am going to lose it. Once I lose that I lose my right to be in that program. They were really, really hard on us. The boat owners wanted all of the quota for themselves.

Finally, Trumble goes on to note echo a sentiment among many of the informants who felt that the crewmen should have been compensated for their history in the fishery:

That has been my big bitch about all of this IFQ stuff is it didn't do anything for the guys that actually do the work. All these boat owners ended up with this quota and it was built by guys like myself; guys that were on deck all those years – they didn't get anything out it. Those quotas were built on their sweat and blood and they never gave us a damn thing… I have been on the Bering Sea for 30 years; I have more dead friends than live ones. Ones that are left should have got something out of this. I would gladly give my quota back if they would re-do the whole thing and give the crewman something. In a bureaucracy that isn't going to happen.

Of the 23 key informant interviews, 18 included fishermen who had fishing history within the BSAI rationalized fisheries. The 2 informants in their early 20s had fished in these fisheries for 2 years each. The 14 informants aged 30-60 fished in these crab fisheries for an average of 18 years. The remaining two informants are over 60 years old and both had fished in these fisheries for approximately 20 years from the 1950s until king crab began to crash in the late 1970s. All of these informants participated in localized bairdi crab fisheries as well.

3. Lack of Entry-Level Opportunities

In addition to the high price of IFQ shares and the lack of initial allocations informants were also concerned about the problem of a lack of entry-level opportunities in restricted access fisheries and barriers for the younger generations to participate in them.

Bill Shellikoff (age 59) of False Pass describing the effects of Salmon Limited Entry noted:

Oh, to me it was helpful but for the other people, my brother, he fished all his life and never got any because he was never a captain. For a lot of the boats they were deckhands.

Ernie Newman (age 47) of King Cove describes his family's experience with Limited Entry:

ML: Okay, but you guys got permits right? Salmon permits?

EN: We didn't.

ML: Your dad did.

EN: See that's what hurt. Like my age group, you know, if we didn't have the money to buy one, you didn't have one.

ML: And how many brothers do you have?

EN: I've got four brothers. Was tough, yeah. You know we, whoever worked the hardest, whoever got to run the boat the permit was turned over to you for that year and next year they'd do it again and again. You know I never did own a permit, a salmon permit myself, I fished somebody else's, you know my dad's…I see we really got hurt when that happened [Limited Entry] *and I started fishing when I was a young kid and still didn't get a permit.*

ML: Were you aware of that when you were a kid….

EN: No, we weren't aware of it until was too late, you know.

ML: Right.

EN: You know it was too damn late.

Ernie goes on to say:

This crabbin', really gonna destroy people, this king crab rationalization, it's a disaster, and only handful of people get rich off of it. And nobody from this town. One boat I think fishes king crab here now, but everybody did it…we all fished king crab, it's gone, no more of that, it's over. In five, ten years it won't be no such thing as that. Local kids will never have nothing.

Rob Trumble has used his crab captain shares as collateral to buy his 20 year-old son a salmon boat to fish a drift permit he bought in 2003 because as he notes:

That is one thing I would be able to pass on to him.

Trumble's son, a neophyte crab fisherman, was asked when interviewed:

ML: How many of your friends lost crab jobs here?

King Cove Fisherman: Pretty much all of them.

ML: What percentage of your income was due to crab before rationalization?

King Cove Fisherman: Almost half.

ML: About 50%. OK, so will this decrease in your income affect your ability to do other things? Other things you did before when you had the money?

King Cove Fisherman: Oh yeah, big time.

ML: Yeah, like what?

King Cove Fisherman: Like pay bills.

Focus group interviews with community youth demonstrate early enculturation defined by relationship with the sea in both a subsistence and commercial fishing lifestyle. Previous ethnographies of King Cove (Langdon 1982, Braund 1986 and Reedy-Maschner 2004) thoroughly explore the traditional substantive (non-formal) education and enculturation of community youth into a fishing lifestyle and vocation. Reedy Maschner stresses how the fishing occupation is a measure of achieved status in the community and the importance being a successful fisherman in the community. A seventeen year old boy in King Cove interviewed for this study brags about his life as a high-liner and describes the aspirations of young men in the community:

Male Youth: I go fishing in the summer…just salmon fishing so far.

ML: If you could count how many kids that fish in the summer that you know from here how many do you think there are? That are under 18?

Male Youth: Pretty much the whole high school.

ML: Okay, so how many kids is that?

Male Youth: About 20.

ML: All the boys and how many of the girls?

Male Youth: 1 or 2 girls.

ML: Okay. Is it pretty good money? What can you expect?

Male Youth: Yeah. My hopes are pretty high though. I don't like making anything under 30.

ML: $30,000? Really? Wow. That's a lot of money. What do you do with it?

Male Youth: Buy a truck, go on trips, have fun. I spend it as fast as I make it.

…

ML: And that is pretty much the norm? Do others make that much?

Male Youth: No. Just me. (laughs)

ML: What do you think the norm is?

Male Youth: Probably around 8 or 10 if you are lucky.

When the same youth was asked what community youth are likely to do when they graduate from high school, he replied:

Male Youth: Probably go fishing. Boys will.

ML: Do any of them have plans to go onto school or anything?

Female Youth (age 17): X, and Y and Z probably do.

ML: So the girls go and the boys will probably stay.

Male Youth: Yeah, probably.

ML: What will happen to them once the summer is over?

Male Youth: Probably try and get jobs in other fisheries. Crab jobs.

4. Perception of a Lack of Transparency in NPFMC Process

The youngest generations included in this study were generally unaware of fisheries legislation and how restricted access management plans constructed today might limit their participation in fisheries such as crab in the future. Interviews conducted within these communities also demonstrated that there are unequal levels of understanding of the complicated structures of each of these management plans, especially among the younger generation.

Regarding crab rationalization, some King Cove fishermen in their 20s were reluctant to even be interviewed for this study which might have been due to a lack of understanding of its purpose. Some younger informants were unclear about the mechanics of past management plans, i.e. salmon limited entry, and how those plans affected their participation in fisheries today. Many informants noted that while they knew access was being limited within the crab fisheries, they did not understand the impact until the plan went into effect.

In addition, the personal stories emerging from local interface with the crab rationalization program exposes a perception of a lack of transparency in the process and difficulties fishermen face in being aware of all of the complexities of management schemes. Ken Mack (age 46), for instance, one of a few successful IFQ fishermen in King Cove tried to purchase crab quota:

You know, I was ready to buy crab [quota] and just because my application was one day late, they denied me eligibility to buy. There's a flaw in that thing because they said you have to have an eligibility application within a year of the last fishery. And I did because not every boat's last day of fishing is at the same time…actually when the season closes is the last day of the fishery but they didn't do it that way. They said the last day you fished was the last day you delivered. Well, that wasn't the last day either because we still had to go out and get gear. We were still part of the fishery. So ours was like into November before we got our gear. We were the last ones to unload here in 2004 and we had to go back out into the Bering Sea and then we came back and laid for two and a half days and then got out to get our gear so it was like the 4th or 5th of November and when I put my application in, in got in about the 29th of this last October, they

said that was too late because we delivered a day before that. That shouldn't have been the last day, it should've been the last day we were on the boat.

Informants feel dissatisfied with the North Pacific Fishery Management Council public comment process which is costly for Aleutian residents to participate in and which are perceived to be offered when fishermen cannot attend meetings, i.e. when they are fishing. Rob Trumble makes this statement about the crab rationalization program process:

I didn't get to give my opinion. I couldn't afford to go to those meetings. And if I did I would've had to have given up my job to go there.

5. Potential Negative Effects of Future Programs Modeled on Crab Rationalization

Because of the problems AEB informants associate with restricted access fisheries and IFQ systems in general such as: the perception of the majority of the quota is awarded to fishing interests outside of the local area, that the leasing of quota reduces the number of local jobs and there are few provisions made for local entry-level opportunities, King Cove fishermen are apprehensive of new IFQ programs in other fisheries. Negative perception of potential impacts of the proposed Gulf of Alaska Groundfish Rationalization was evident from interviews.

We do not anticipate that the proposed Gulf of Alaska Groundfish rationalization program would have significant effects on Akutan, as Akutan fishermen do not participate in those fisheries.

False Pass fishermen do hold state water miscellaneous finfish permits but were unavailable for comment.

Based on our King Cove key informant interviews, King Cove fishermen perceive GOA groundfisheries rationalization to be potentially harmful, both personally and for the community. Key informant interviews and CFEC permit data indicate that King Cove fishermen have more invested in the local cod fishery than crab fisheries, as a winter counterpart to their summer salmon fishing. King Cove tax data show that between FY 1999 and FY 2007, cod accounted for between 10% and 24% of the total ex-vessel value of King Cove fishery landings.

Codfishing also has cultural significance for AEB residents: King Cove was founded as a codfishing station and was settled by European codfishermen. Historically, codfishing has always been an important fishery to King Cove residents when cod were abundant and the fisheries were available to them

King Cove Fishermen:

ML: What were your best years fishing?

EN: Boy, I don't know. Had so many good years it wasn't funny. I think my best two years I would have to say codfishing. Used to be loaded everyday, everyday for two months even.

ML: Yeah, so cod more than crab?

EN: Yeah, cod was the biggest moneymaker of all of them.

When discussing a potential rationalization of the GOA groundfisheries, King Cove key informants expressed similar concerns to those they have had about the outcomes of crab rationalization. Once concern is that the quota will be largely awarded to outside boats.

Rob Trumble, King Cove:

Again, the bulk of the quota is caught by boats that aren't Alaskan boats. They are Seattle based boats. They are not from around our area. It is the quota in our area that I am talking about. The quota in our area is mostly caught up by big Trident draggers, not the locals. They get a slice of it. When they rationalize, it will go over there; it will not come to us.

Another concern is that the leasing of quota could result in a decrease in the amount of crew jobs available on cod vessels. Ken Mack suggested learning from the previous IFQ plans and allocating a small percentage of quota to crewmen, i.e. 5,000 to 10,000 pounds with the stipulation that it has to fished from the boat crew were working on.. He suggested that crew history could be traced from 1099 forms. He argued that since prior to crab rationalization a four-man crew on a crab boat would get about 28% of the boat's take and a captain would get about 15%, rationalization schemes should recognize these traditional shares in the fishery.

Another concern is that lack of sufficient fishing history, especially among the younger generations will result in exclusion from the program.

King Cove Fisherman (age 41):

KC Fisherman: To me, [rationalization of Gulf of Alaska groundfish would be] harmful because I'm just starting to get into the fishery again after fishing in king crabbing and pollock fishing and stuff. I'm just starting to get into those fisheries so it's not gonna do me much good.

A respondent expressed skepticism that the Community Quota Entity (CQE) would be adequate to address problems with the proposed rationalization plan:

King Cove Fisherman:

They already implemented the CQE program for halibut and sablefish so everything's gonna follow. I know that writing's on the wall….—the Gulf, if it's rationalized…the only thing we want is—we were talking about the North Pacific Fishery Management Council last week—their first transfer will be taxed. If you sell it, first rights of refusal will be us, the CQEs. That'll keep the shares in the community…the only issue with those CQEs, all the guys who want to fish those shares—do we draw it out of a hat or whatever?

6. Implications of Processor Quota Share

Residents of King Cove and Akutan have also expressed their concern over the feature of processor quota share within the crab rationalization plan because of its perceived potential power to diminish competition, influence price fixing and be transferred out of the community. AEB fishermen also express frustration with what they see as the injustice of processors being awarded quota while communities have to buy it. One King Cove Fisherman (age 41):

I don't think there's any benefits. I think there's drawbacks because right now they set the price and you can either go or you can't go whereas if the processors didn't get it or it was the other way around, you'd have more leverage for negotiation.

Or Ken Mack (age 46) of King Cove:

You have to give them x percentage of your fish. And why would you buy something if you knew you were gonna get it anyway?

Questions were raised regarding why processors needed the 90-10 split (participating vessels have to deliver 90% of their catch within a particular region while 10% can be delivered anywhere. Although vessels are allowed to deliver within a particular region, most have to be paired with a particular processor because each processor has a cap.)

Edwin Bendixen (age 77) of King Cove notes:

I don't think they should have it. Why should they? They don't fish.

Ignaty Philemonoff (age 36) of Akutan:

When it first started off, it sounded like the fishermen were going to get some of the shares of the quota. Then they turned around and had the processors get it, and I was like "What the hell?" I mean, the processors, they don't go out there and fish it. All they do it buy it. I don't understand why they get any of the shares when it should be the fishermen or the boat owner. I mean, I could see that but I don't see why the processors get any of the quota…They don't go out and work for it or anything. It seems like it would have been the other way around. The fishermen get some of the shares, maybe the boat owners and they left out that—the processors.

Finally, many King Cove community interviewees were concerned with Trident's growth in the region and the possibility of its acquiring PPSF's crab quota. Although at this time it is unlikely that the quota will move since PPSF currently has plans to upgrade its crab processing operation, the possibility of a transfer is there under the law. Interviewees indicated that moving the crab quota out of the community would exacerbate the negative effects crab rationalization has already had on its fishery support sector as well as diminish the significant amount of raw fish tax collected from the crab fishery for the City. Although community fishermen do not believe in the necessity of PQS, if the processors have it, they do believe that it has to stay within the community. A King Cove Fisherman (age 46) notes:

We want it to stay in the community…on the one hand, we'd like to see the fishermen be able to market their fish for the best buck wherever they can. On the other hand, we want to see the revenues keep coming in to the cities and the Borough.

All of interviewees indicated that life in King Cove depended upon the processor being there. When asked what would happen if PPSF closed down operations in King Cove, responses were generally similar to the following:

It (King Cove) would dry up and blow away.

Hopefully somebody would come back in. It would be a world of hurt if Peter Pan closed down.

Oh my God! We would all have to change our lifestyle because we'd have to deliver somewhere else and I expect if that happened people would actually move.

Conclusions

In summary, Aleutians East Borough key informants want local participation in fisheries and favor management programs that have enabled them to do so. On average, informants from all three communities rate crab rationalization as harmful. For King Cove, the way IFQ plans are generally structured is perceived to have been harmful. AEB informants are concerned about having access to entry level participation in restricted access fisheries and in securing a place within these fisheries for community youth. They experience a lack of transparency in the NPFMC process in development and implementation of these programs. They also do not support the idea of processor quota shares which they view as a barrier to free enterprise. Finally, they harbor concerns that future management plans modeled after crab rationalization will further limit their participation in their region's fisheries.

VII. COMMUNITY YOUTH AND THE FUTURE

Dr. Lowe also conducted focus group interviews with high school students in each community and talked with teachers and parents of community youth. The purpose of these interviews was to gather information on the current lives of community youth and their aspirations for and perceptions of the future, and to situate these perceptions within socioeconomic changes taking place in their communities.

False Pass school had approximately 10 students at the grade school level. There was only one high school aged student in False Pass who was being home-schooled. Dr. Lowe interviewed this student alone. King Cove school had 90 students in K-12. In King Cove, 3 out of the 6 junior class students participated in a focus group.[33] Akutan school had 10 students K-12. In Akutan, 2 out of the 3 high-school aged students participated in a focus group. Focus group questions were designed for the students to describe their lifestyle and how they viewed future opportunities in work, education or training.

AEB Lifestyle for Community Youth

For the following discussion, students are numbered 1-6. Students 1 ,2 and 3 were children of outside professionals that came to work in AEB communities, while students 2,3 and 4 were raised in the communities.

Student 1: Male, False Pass (age 15) (Father: Village Public Safety Officer)[34]
Student 2: Female, King Cove, (age 16) (Father: teacher)
Student 3: Female, King Cove, (age 17) (Father: teacher)
Student 4: Male, raised in King Cove (age 17)
Student 5: Female, raised in Akutan (age 15)
Student 6: Female, raised in Akutan (age 14)

Students were asked to discuss both the best and worst characteristics of their communities. Tables VII-1 and VII-2 (on the following page) summarize their responses.

[33] These were the only students who returned the permission slips to participate after their parents had signed them. The senior class was on a field trip to Hawaii.
[34] This student's mother was Alaska Native from elsewhere in Alaska and he had grown up in Alaska. The other two students came from the Lower 48.

Table VII-1. Lifestyle Responses from Students 1, 2, 3

Best AEB Community Characteristics	**Worst AEB Community Characteristics**
Access to opportunities because of a small population: scholarships, starting a business	Boredom; not enough for kids to do
School trips: Culture Camp in other villages, Senior Class trip to Hawaii	Drug Use
Small school; individualized attention from teachers	Not enough high-school aged peers
	Weather

Table VII-2. Lifestyle Responses, Students 4, 5, 6

Best AEB Community Characteristics	**Worst AEB Community Characteristics**
"It's home"	Can't go shopping
"Outdoor Activities"	Small town: Everyone knows your business
Outdoor Activities: Beachcombing, Hiking, Camping, Skiffing, "Being Near the Ocean"	"Not too many bad things"
Subsistence Activities: Hunting, Fishing, Egg-Picking, Collecting Sea Urchins	Weather

The most significant responses revealed that the small size of the communities offered both advantages and disadvantages. Youth originating from outside the community enjoyed opportunities in the AEB that they might not elsewhere while youth originating in the AEB valued their small family-oriented communities despite the lack of privacy resultant from small town living. Also significant was the interest of AEB originating youth in outdoor-oriented activities and the cultural importance placed upon activities that involved a relationship with the sea. Student 6 from Akutan divided her time between one parent in Anchorage and one in Akutan but she prefered being in Akutan:

Student 6: I prefer here over there.

ML: You do? Yeah, why is that?

Student 6: It is because I am so close to my environment. ' Cause the ocean is like my home.

Alaska Native cultural activities were also reported as important for False Pass and Akutan students. They reported enjoying the inter-island culture camps and learning traditional crafts. The Akutan students also expressed an interest in Aleut language revitalization.

Future Aspirations

Students were given a list of 20 occupations which they were asked to rank from 1-20, where 1 = the occupation they consider the best and 20= the occupation they consider the worst.[35] Table VII-3 shows students' #1, #2, #3 and #20 rankings.

Table VII-3. AEB Youth Occupation Ranking

Student ID	Sex	Age	Community	#1 Occupation	#2 Occupation	#3 Occupation	#20 Occupation
1	M	14	False Pass	Computer Programmer	Store/Business Owner	Chef/Cook	Mayor
2	F	16	King Cove	Doctor/Nurse	Hairdresser	Office Worker	Welder
3	F	17	King Cove	Artist	Hairdresser	Doctor/Nurse	Post Office Clerk
4	M	17	King Cove	Pilot	Fisherman	Welder	Hairdresser
5	F	15	Akutan	Post-Office Clerk	Chef/Cook	Store/Business Owner	Teacher
6	F	14	Akutan	Pilot	Mechanic	Fisherman	Teacher

Note the responses of Students 4, 5 and 6 were more reflective of the job opportunities that exist in their communities. Students 1, 2 and 3 did not expect to remain in the Aleutians East Borough beyond high school. Students 4, 5, and 6 expected to leave home for a period of time but they also expected to return. They reported that many of their older friends and siblings had left but had come back. King Cove students remarked that many of the girls will leave after high school but that many of the boys will stay to fish. Teachers in King Cove reported that boys are *very grownup compared to their counterparts in the Lower 48. They have a good work ethic and are hard-workers.*

A King Cove Fisherman (age 46) remarked of the younger generation:

You know lot of them are looking to fish, others aren't…they have seen that as a pretty good way to make quick money. So that's what they're looking for.

Student 1 in False Pass saw fishing in this way:

Sometimes they need an extra hand on the boat so we go out and fish. Just to make money, chump change.

An Akutan Fisherman (age 30) noted that in Akutan:

None of the younger guys want to fish. Their grandfathers told them it was a hard way to make a living. They are beyond spoiled. Their parents don't want them to suffer. They want them to go to school.

[35] The occupations were Mechanic, Teacher, Welder, Doctor/Nurse, Mayor, Biologist, Store/business owner, Chef/cook, Fisherman, Post office clerk, Longshoreman, Artist, Harbormaster, Charter boat operator, Office worker, Pilot, Fish processor, Computer programmer, Construction worker, and Hairdresser.

While many of the younger generations in King Cove were still fishing, some were starting to rethink fishing as an occupation and were encouraged to seek higher education and training. Some recent high school graduates were combining fishing and higher education like Connie Newton's son who was studying Business Management and Computer Programming at UAA. He also had an internship with the Chenega Corporation but came home to fish in the summer. Connie explained:

A lot of the boys I think, wanna fish. That's what they grew up around. My son wants to. My oldest son is fishing yet he's going to school and he'll be done, yeah, next month, and graduate from UAA…but every summer, he's gonna come home and fish and then he also halibuts with us too. Some of the girls are the same way. There's more tendencies now, I think, for the kids to look on to higher education then there was twenty years ago. But you're still finding that they still come home…He's interning right now, but that's where he was. And he's been fishing since he was what ten? Yeah, so something they grow up with. I imagine most of the kids will, whether they go out for school or not, they're going to be back here in the summer. And those, between the ages of, I would say twenty two and thirty two, a lot those kids have graduated with my daughter's class, are still here and that's what they do, fish. Yeah. And raising families.

AEB Education

This idea that the younger generations must invest in some schooling to prepare for a different future was a reoccurring theme in many interviews but there were also some evident difficulties in making this transition. AEB residents felt that their community schools were underfunded which created some challenges in adequately preparing students for higher education. The relationship of the state of the schools and community health to the effects of restricted access management plans such as crab rationalization was expressed in several interviews such as in a King Cove Fisherman's (age 45) when he explained the "trickle-down" effect of crab rationalization and restricted access management in fisheries:

It just started last year, this is gonna be a five year deal where it's gonna trickle down, we're gonna find out that, you know, it's lost jobs in the community. Well, okay, lost jobs in the community, people are going to leave, the schools are gonna have less kids, they're gonna give less money, they're gonna have to fire teachers. There's four more people that gotta go right there if they lose four teachers or two teachers for that matter. So they're not gonna be here. And I mean when a school closes in the community the community is— perfect example, Adak. Adak had a school, the school's not there anymore and they are wondering how the hell they are going to get women there so they can repopulate the town.

Tiny schools threatened by shortage of students

■ **STATE FUNDS:** Minimum of 10 needed to qualify for support from the state.

By ALEX deMARBAN
Anchorage Daily News

A school district in the eastern Aleutian Islands faces losing state funds for two schools because enrollment has dipped below 10.

When the school bell rang last week, Akutan, built on an island near the Alaska Peninsula's tip, had eight students, said Carl Warner, business manager for the Aleutians East Borough School District.

False Pass on Unimak Island has four.

Borough officials have cobbled together a plan to bail out the all-grades schools this year. But if enrollment doesn't average 10 students in October — when the state counts heads — the schools might close next year, Warner said.

According to an article in the September 11, 2006 *Anchorage Daily News*, False Pass and Akutan schools were in danger of closing. Citing interviews with False Pass residents, the article

claimed ". . . Families are leaving False Pass…One reason: Rules designed to make the crabbing industry more efficient put many locals out of work."

A King Cove resident noted that King Cove school enrollment had been declining in the last few years. He came to King Cove as a teacher in 1984 and taught there for 20 years:

With the school district it's been, we've seen a general decline over the years, when I first got here 150-160 kids, now they're lucky to keep over a hundred in the K-12…so that's where you generally see it. People are moving away, they don't like the school or whatever reason they can't find employment.

Connie Newton:

And when the Borough gets hurt, the school gets hurt and there aren't any jobs, the parents will move and that means less money we get from the federal government. 'Cause we get so much per student.

They can't afford to bring in teachers that have the experience. They're looking for younger teachers that are coming in because it's cheaper for them. We end up getting tenured teachers here and it depends on what their degree of schooling is plus how many years they've taught puts them at a higher…we've got, there's teachers within our district that make almost as much as the principal does. Because of their background in schooling and how many years they've taught. So, what's happening is, they're going to teachers just coming right out of college to start out at the lowest level of the pay scale. And when they do that, there are some that are good that come in, but some that are bad. Our kids lose it in the end, yeah, and that's all, it's a money issue.

Some new King Cove teachers reported that they felt student writing skills were poor and that math was the students' hardest subject. They reported that students liked computers but complained about English and math. The teachers felt that the students' reading skills were also low and that they had small vocabularies.

Interviews with teachers and students revealed the following problems in AEB schools:

1. Lack of higher level math and science courses
2. Low reading level of students
3. High teacher turnover

<u>Lack of Higher Level Math and Science Courses</u>

Students and teachers reported a lack of higher level math and science courses for high school aged students. The Junior class in King Cove noted that trigonometry was the highest level of math at the school. Student 4 mentioned that although math was his favorite subject, he was *done with math*. He was not required to continue on to trigonometry to graduate. Likewise in science, the offerings were biology and marine science. King Cove school did not offer a chemistry class or physics class. High school students from both False Pass and Akutan

communities noted that much of the learning they were doing was self-directed from a book. For the 2005-2006 school year, Aleutian East Borough schools as a whole scored only a 57.61% proficiency in mathematics.[36]

Low Reading Level of Students

Teachers in King Cove felt that the high school aged students were reading at a low level (one teacher claimed a third grade level) and that their vocabulary was nominal. An English teacher in King Cove felt the students did not do well on the previous year's reading proficiency exam (71.48 % for the district average in 2005-2006.)[37] This teacher complained that the State of Alaska published a list of books for suggested reading every year and each student was required to read ten books from that list, but the school did not have access to sets of these books for the children to read. Consequently, the children didn't *read many or any* of the books from the list.

High Teacher Turnover

Students reported a problem with high teacher turnover. For the Fall of 2006, the King Cove school had four advertised openings in Special Education, High School Science, High School Vocational Education and High School English.[38] In addition to these open positions, the Principal was dismissed that year. High school students in King Cove expressed concern about the teacher turnover:

ML: What would you say would be the worst things about school?

Student 1: It's early.

2: A lot of new teachers.

Student 1: Yeah, that's really hard.

ML: So what is the story here with a lot of the teachers leaving this year?

Student 3: It sucks.

Student 2: Yeah.

ML: Why is that?

Student 3: Because they are awesome teachers.

Student 2: All of the good teachers are leaving.

[36] Alaska Department of Education and Early Development; http://www.eed.state.ak.us/DOE_Rolodex/AYP/2006/districts/Aleutians%20East%20Borough%20Schools.pdf
[37] Ibid.

ML: Why are they leaving?

Student 1: Because they didn't get their contracts back.

Student 2: Or they chose to leave...

Student 3: I don't know.

ML: And so you guys are upset about that? You said all of the good teachers are going.

Student 1: Mostly all of them.

Student 2: Yup, all of them pretty much.

Student 3: Yeah.

The students in Akutan also identified teacher turnover as a problem:

ML: He is pretty new right? Do you have a lot of new teachers coming through?

Student 1: Every two years.

ML: Every two years? That must be hard, huh. You don't get to know them.

Student 1: There was a couple of good teachers here a few years ago.

Student 2. They stayed for like four years. We had good teachers then.

Finally, the one high school student in False Pass was home-schooled because of teacher-community problems as he explained:

ML: All right, so, now what about school? You're doing school at home?

Student: Homeschool, yeah…This is my first year.

ML: What was the decision to do it? Not enough teachers?

Student: Last year there were teachers here that they were having trouble with. They pulled my cousin out because he was the one who was having trouble and they decided to pull me out with them to get the experience of teaching myself and read books and stuff like that, to learn.

ML: What happened with the teachers?

Student: I have no clue. They weren't bothering me.

In addition to the growing problems for AEB community schools in providing their students with preparation for pursuing training or employment outside of the communities, Connie Newton explained that although there were more and more young people leaving the community to try schooling or training, she noticed them coming back to King Cove eventually:

CN: We have seen a few that actually move away and gone on to school, there's more that are goin' on to school. But…they come back…over the years, I would say I don't know between fifteen and twenty kids maybe from the last eight graduating classes that are actually out and in college or else out living in Anchorage and working.

ML: How about vocational training?

CN: There's a few that have tried it but it's something that just didn't click. Yeah, they ended up here. I know there's couple of kids here who are back home, who went to, I believe it was down in Seward? That tried that, that are back. I don't think they completed the course all the way. I don't know what it was. When you leave here and go out to either Seward or Anchorage and go to school and you don't have a support group like they do in King Cove, a lot of the kids are really intimidated and so a lot of times they don't make it and they end up coming back home? Unless they can find that support group there where they're going to school at…you know, and a lot of these kids haven't been out of the state.

Conclusions

In sum, information gathered in focus groups supplemented with parent and teacher observations revealed the following:

- The perspective on lifestyle in the communities differed between those youth that were raised in the AEB and those that lived there because of their parents' employment opportunities. Youth originating in the AEB valued outdoor and subsistence activities and especially those that involve a relationship with the sea. They placed an importance on family and the AEB as their home. AEB youth originating from outside the region looked to maximize opportunities presented to them from living in communities with small populations.

- AEB originating youth valued occupations with which they were familiar in their own communities such as air piloting, fishing, construction/trades, city or entrepreneurial business. Outside originating youth placed more value on occupations that are dominant in greater American society: i.e. computers, health care. All youth interviewed expressed a desire to leave the AEB after high school but AEB originating youth felt that they would return one day.

- With diminishing opportunities in the fishing industry, people were either forced to move away from the AEB or look to higher education or training for youth in order to provide them with an alternative future. However, students' preparedness to move on to higher education was complicated by the threat of closure of schools in small villages such as False Pass and Akutan and the low levels of funding awarded to schools with diminishing

enrollment. Other problems such as a lack of higher math and science courses, low reading levels and high teacher turnover in schools were also potential barriers to success for students. Parents reported that community youth also had some problems adjusting to life outside of their small communities in losing the support and social networks they've always known. Because of this, many community youth did return to the AEB, some without fully completing their education or training.

VIII. POTENTIAL LONG-TERM SOCIOECONOMIC IMPACTS OF RESTRICTED ACCESS MANAGEMENT

Living Opportunistically

In evaluating the past, present, and future participation of Alaska's coastal communities in fisheries, the role abundance cycles play in determining the fate of Aleutian fishermen within restricted access management plans should be highlighted. These cycles or shifts in available stocks have been central to the creation of a fishing culture in the Aleutians. Because of the vagaries of their difficult physical environment and variability in available resources, Aleutian residents have traditionally had to survive in their home communities "opportunistically": they engage in those economic activities which make sense for them at a certain time in conjunction with which resources are available to them at that time.

Fish populations in the Aleutian region have been known historically to rise and fall in wild fluctuations that could be environmentally or human induced. How complex factors interact to drive these fluctuations is still unresolved by science and in public opinion. For example, the region's groundfisheries have not always been available in sufficient quantities to make their exploitation by small scale fishermen worthwhile, such as during the 1970s when crustacean populations dominated the ecosystem.[39]

A recurring complaint in the BSAI region with regard to fisheries management plans is that these fluctuations are ignored in defining fishing history, i.e. the qualifying years might not have been relevant for fishermen in certain communities at certain times because they made other choices in their "combination fishing" strategies.

One conclusion of this study is that with each restricted access management plan implemented, Aleutian fishermen are losing their flexibility in living opportunistically and are under pressure then to specialize in particular fisheries which might not always be economically viable. For example, the historic ability to participate in other fisheries, such as crab and cod, has helped King Cove fishermen to survive through past years of low salmon prices.

Data on permit holders in King Cove reveal that through the 1990s and into the 2000s, the number of King Cove residents holding multiple permits or engaging in combination fishing was declining. We posit that the most important socioeconomic impact of restricted access management programs like Crab Rationalization is not just the loss of jobs but the **narrowing of options** that occurs with the passage of each new plan in the way Darryl Pelkey of Akutan says the most detrimental aspect of the crab rationalization program is:

Just not having the option out there.

Residents of the Alaska Peninsula and the Aleutian Islands have to engage in a myriad of economic pursuits to survive within their communities. They are, in the words of Oran Young,

[39] Lowe 2006.

"generalists" rather than "specialists".[40] They employ "combination fishing" strategies or as Rob Trumble of King Cove described it when asked if he worked seasonally or year-round:

I work year round at trying to stay busy seasonally!

Restricted access management inevitably imposes specialization into the lives of coastal residents. In contextualizing Crab Rationalization within the range of restricted access management programs Alaska's coastal residents have encountered, study interviews first highlight three important lessons learned from the first formal restricted access management program in Alaska's fisheries, Salmon Limited Entry of 1973:

1. Limited Entry addressed problems of overcapitalization in salmon fisheries

2. Limited Entry did not recognize the fishing history of deckhands.

3. Limited Entry had an impact on future generations of fishermen.

Restricted Access

These three outcomes of Limited Entry are indicative of the effect of restricted access management plans in general in Alaska's coastal communities: they are enacted to reduce overcapitalization, they do not include deckhand history, and they have an impact on future generations of fishermen. Informant responses also indicate if the program keeps participation within the community, it is perceived as beneficial.

Around the state of Alaska, Limited Entry assured a degree of local participation within the fishery and salmon fishing became the principal staple fishery of Alaska's coastal fishing communities. Even informants like Darryl Pelkey (age 52) of Akutan appreciates the way Limited Entry kept the fishery participation within the region even though Akutan doesn't have a commercial salmon fishery:

There's still jobs down there,[41] I know I could go to work there if I wanted and…it was seasonal, the crab fishery was in the winter and then the summer was the salmon. It was helpful if you wanted to continue to work.

Fishermen in Akutan have both kin ties and other social networks with residents of the Alaska Peninsula communities and have often crewed on salmon boats from Chignik, Sand Point, and King Cove in the summer.

For many coastal communities in Alaska, Limited Entry provided the means to develop a local fleet and invest in boats that would prove useful in pursuing a combination fishing plan which for many included halibut fishing. However, unlike Limited Entry, the lack of halibut/sablefish quota share in the community has redirected the fishery out of local fishermen's control for King Cove/False Pass even though there was a high level of participation in the fishery prior to IFQ

[40] Young 1998.
[41] Here Pelkey is referring to the salmon fisheries off of the South Alaska Peninsula.

management. Most AEB fishermen were active in the halibut fishery prior to the passage of the 1995 Individual Fishing Quota (IFQ) legislation.

Informants' experiences with both Salmon Limited Entry and Halibut/Sablefish IFQ also highlight how the lack of recognition for the history of crewmen has been perhaps the most harmful aspect of these programs for AEB residents. As noted above, most residents of the BSAI communities participating in the crab fisheries today did so as deckhands. As in Limited Entry, lack of provisions for crewmen in the crab rationalization plan kept them from sharing in the benefits of these programs. The practical effect of how crab quota share was initially allocated, combined with the consolidation in the crab fleet, will be to exclude future generations of local fishermen from participating in these fisheries.

Participation in the rationalized crab fisheries for False Pass does not seem to be an essential element to residents' income or lives. However, both King Cove and Akutan experienced loss of jobs and neither community had residents who received a significant amount of QS. King Cove had four recipients of initial issuance and Akutan had none despite generations of fishing history in these BSAI crab fisheries. Residents of False Pass and Akutan, however, have the ability to continue participating in the crab fisheries through the CDQ program although they feel the jobs offered to them through the program today are generally lower paying than traditional crab fishing jobs.

Captains were awarded QS based on 3% of their history. Three crab captains in King Cove received CVC QS. Most AEB residents who worked in the rationalized fisheries did so as deckhands and were not awarded QS. Without any initial allocation of quota share, it will be extremely difficult for these residents to ever operate their own vessels in a rationalized crab fishery.

The story of Dean Gould from King Cove demonstrates the problem of vertical mobility within Alaskan fisheries today. He started fishing in 1973 as a 12-year old deckhand on his father's salmon boat. He did not reach captain status in the family operation until 1990 at the age of 29. His older brother Robert received C-shares for captaining his father's crab boat and the two brothers fish their family's quota together. Dean started crab fishing at the age of 17 and halibut fishing about ten years later around the age of 27. Although his family owns three boats, they only qualified for a few thousand pounds of halibut IFQ. Gould did not own a boat until this year of 2006 at age 45 when he bought his father's salmon boat. His father qualified for just enough crab quota to justify gearing up for it but as he notes: *that's my Dad's.*

It should be noted here that Dean Gould is an upstanding member of the King Cove community. He is the President of the King Cove (village) Corporation and a member of the King Cove City Council. He owns a home, is married and has two children, both in their 20s, and he appears to be well-respected among his peers. His family has high status in the community and its members are considered successful fishermen. Despite his life-long training as a fisherman in addition to his economic, social, and political standing in the community, his story demonstrates how with each succeeding generation in King Cove, it is increasingly difficult for the community's fishermen to be full participants in the fisheries their fathers and grandfathers fished, to own their own boats, or control permits.

Although the majority of AEB fishermen did not receive initial allocations of crab QS, many of them indicated that they would have indeed liked to. Edwin Bendixen (age 77) of King Cove for instance:

ML: Did you get any quota for crab?

DB: No, nobody got any quota that I know of, I don't think so.

ML: Would you have liked to?

DB: Sure! Would I have liked to, yeah!

And Ignaty Philemonoff (age 36) of Akutan:

ML: Let's say you had access to a loan program that would help you buy crab quota. Would you do that?

IP: Yeah, I'm sure I would.

ML: Yeah?

IP: The way it is right now, I mean, it seems like it would be given.

…

ML: Let's say you were eligible to qualify for quota share. What would you do?

IP: I would probably work on the same boat, fishing shares out of there, or…I'm pretty sure I would fish on the same boat, work shares off the same boat. I'm sure everybody would. Or they could lease them out to another boat just like the crabbers are doing right now.

Protecting the economic mobility of Alaska's coastal residents in fisheries is not outlined as a goal of the crab rationalization program. The community protection measures as outlined under the program do not include recognition of how community participation in the BSAI crab fisheries has been for the most part as deckhands. In this way, the community protection measures under the program fall short of protecting community investment in the fishery or in making provisions for future opportunities within the fishery for local residents.

Community Protection Measures

In defining crab rationalization, NOAA Fisheries states:[42]

> "Community interests are protected by Community Development Quota (CDQ) allocations and regional landing and processing requirements, as well as by several community protection measures. . . These are primarily limits on the amount of PQS and IPQ that can be used outside of communities with historic reliance on the crab fisheries, which means that more than 3% of a crab fishery was processed there. . ."

The communities of False Pass and Akutan have economic opportunities in the rationalized crab fisheries provided by their participation in the CDQ program. Under crab rationalization, the allocation to CDQ groups increased to 10% of the TAC for most rationalized crab fisheries. King Cove, however, is not a CDQ community and does not receive these benefits.

The three main "community protection measures" were:

1. Cooling Off Period: PQS/IPQ held by a particular processor could not be transferred from its host community before July 1, 2007 (although 10% could be leased outside the community).

2. Right of First Refusal: Prior to issuance of PQS by NMFS, communities could have contracted with their processors to guarantee host communities first rights to the sale of its processor's PQS and its transfer out of the community.

3. Community QS Purchase: Under the crab rationalization plan, "Eligible Crab Communities" (Adak, Akutan, Unalaska, False Pass, King Cove, Kodiak, Port Moller, Saint George and Saint Paul) are permitted to purchase QS and lease the IFQ to resident fishermen. Different measures apply to CDQ and non-CDQ communities. Whereas APICDA is the governing body initiating such a purchase for False Pass and Akutan, the City of King Cove and the Aleutians East Borough are the governing bodies for King Cove.

From the perspective of AEB informants, these community protection measures were unrealistic. Neither Akutan or King Cove nor the Aleutians East Borough could mobilize the resources in order to exercise a right of first refusal to prevent the sale of their communities' processors' PQS.[43] Nor was the "cooling off" a long enough period of time to allow Akutan or King Cove to mobilize the funds needed to purchase the PQS and invest in processing. King Cove and Sand Point have taken the steps to form a Community Quota Entity (CQE) but have not actually purchased any IFQ through this program to date. In addition to the high cost of entry, there are logistical problems in determining how the quota would be fished at the community level.

[42] http://www.fakr.noaa.gov/sustainablefisheries/crab/rat/progfaq.htm

[43] King Cove City Manager and Aleutians East Borough Director, personal communication.

Perhaps most significant, however, is the implication in the NMFS definition of crab rationalization quoted above that that "historic reliance on the crab fisheries" can be measured by the amount of crab that was historically processed in a community. Defining "historic reliance" in terms of processing ignores the reliance of residents of a community such as King Cove on job opportunities in the fishery, or the dependence of the King Cove harbor and local businesses on crab vessels delivering to the community.

From the perspective of local AEB residents, the best "community protection" would have been to provide for initial allocation of quota shares to those residents of the community who had worked in the fishery. The "Community Protection Measures" of the crab rationalization program are inadequate to protect King Cove residents from the negative impacts of fleet consolidation and lost jobs or to ensure future participation in crab fisheries.

The Future

According to informant interviews, Salmon Limited Entry is the only restricted access program implemented so far that awarded enough permits locally in the AEB to keep participation in the fishery in the community and the region. When asked about fishing options for high school graduates, Connie Newton, mother, business owner and fisherman said:

For here, you better go out to school and get a job because unless your father owns a permit and you can fish with him during the summer, there is a very limited amount of job openings here.

The effects of restricted access management and the loss of jobs on the younger generations of the AEB increase incrementally over time: as the amount of jobs in a community or options for employment diminish, youth are encouraged to seek outside education or training. However, lack of funding and issues within AEB community schools threaten youth preparedness for higher education. Parents report that youth eventually return to their home communities because of difficulties adapting to the outside and again they will be faced with underemployment issues and ensuing problems in establishing their own families and homes. Reedy-Maschner reports that many young people now continue to live in their parents' homes well into their adulthood.[44] Three fishermen in their 30s in Akutan reported lost crab wages will affect their ability to make house payments. The coming of age for AEB community youth today marks a period of significant social change for these communities and a cultural divide between these youth and their elders. AEB fishermen have enculturated their children into a fishing occupation and lifestyle; their training will not equip them with the skills the next generation will need to survive perhaps outside of their home communities.

As more restricted access management plans in Alaska's fisheries are implemented, the economic opportunities for coastal residents diminish. AEB fishermen rationally engage in those fisheries that make the most sense for them at a given time and in the ways it makes the most sense for them. From the perspective of local fishermen, younger generations will not have the opportunity to enter the crab fisheries or earn a history in an industry with minimal job openings. Nor will they have the desire to pursue the remaining positions within the current payment structure. Many of the crab crewmen in the AEB who regularly worked in the crab fisheries did

[44] Reedy-Maschner 2004.

so for years and their occupational skills, their ability to earn a living, their identity and a spiritual connection to the sea depend upon fishing. Should there be an ecological regime shift in which crustaceans are again dominant in the BSAI area, both those AEB fishermen with a history and without one will be unable to exercise the option their to participate in the crab fisheries of the future.

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