

## **Alaska Region**

There are six catch share programs in the Alaska region: the Western Alaska Community Development Quota (1992), Alaska Halibut and Sablefish Individual Fishing Quota (IFQ) Program (1995), Bering Sea and Aleutian Islands American Fisheries Act Pollock Cooperatives (1999), Bering Sea and Aleutian Islands Crab IFQ Program (2005), Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80; 2008), and Central Gulf of Alaska Rockfish Cooperatives (2012). The Alaska Halibut and Sablefish IFQ Program was jointly implemented, but performance of the individual components of the fisheries are quite distinct; therefore, assessment of the Alaska Halibut and Sablefish IFQ Programs are presented separately.

This report does not assess the Western Alaska Community Development Quota or the Central Gulf of Alaska Rockfish Cooperatives Programs and, therefore only assesses four of the Alaska Region's catch share programs. The North Pacific Council established the Western Alaska Community Development Quota (CDQ) Program, per Section 305(i)(1)(C) of the Reauthorized Magnuson-Stevens Act. The CDQ Programs allocate a percentage of all Bering Sea and Aleutian Islands groundfish, prohibited species, halibut and most crab to 65 eligible villages in western Alaska that are organized into six CDQ groups. The goals of the CDQ Program are to 1) support economic development in western Alaska; 2) alleviate poverty and provide economic and social benefits to residents; and 3) achieve sustainable and diversified local economies. Although the CDQ Program allocates transferable shares to community entities and has many of the same properties as the other catch share programs included in this report, economic performance metrics are not reported for the CDQ fisheries, due to their unique nature. Also, the Central Gulf of Alaska Rockfish Cooperatives Program was recently implemented in 2012, therefore only Baseline Period data are presented.

There are also three management institutions in Alaska that resemble catch share programs, but are not included in this report: Alaska Weathervane Scallops, the Freezer Longline Coalition and Bering Sea Chinook Salmon Bycatch Management. NOAA Fisheries issues limited access permits in the Alaska Weathervane Scallop fishery, but it is primarily managed by the State of Alaska and while the vessels have formed a voluntary cooperative, the cooperative is not given exclusive harvesting privileges. The Alaska Freezer Longline Coalition is a voluntary cooperative of catcher/processors that catch Pacific cod with longline gear in the Bering Sea and Aleutian Islands. The Longline Catcher Processor Subsector Single Fishery Cooperative Act was signed by President Obama in December 2010 and allows freezer longline vessels participating in the Bering Sea and Aleutian Islands directed Pacific cod fishery to form a single cooperative and requires that NOAA Fisheries implement enabling regulations within two years of receiving a request from holders of at least 80 percent of the eligible licenses. This Cooperatives Program is not included in the report because the vessels participating in this fishery have formed a voluntary cooperative, but the cooperative is not given exclusive harvesting privileges and has not exercised the formal process that would require NOAA Fisheries to write regulations. The Bering Sea Chinook Salmon Bycatch Management system is not included because it was established to minimize bycatch in the pollock fishery and involves the same participants as in the AFA Pollock Cooperatives Program.

Table 7 displays a summary of the Economic Performance Indicators for the Alaska Catch Share Programs. More detailed results are presented below for each of these programs.

**Table 7. Alaska Region Fishery Performance Measures for Catch Share Programs**

	Halibut 2011	Sablefish 2011	AFA Pollock Cooperatives 2010 <sup>a</sup>	Crab IFQ 2011 <sup>b</sup>	Amendment 80 2010 <sup>c</sup>	Gulf of Alaska Rockfish Baseline <sup>d</sup>
<b>Catch and Landings</b>	Pounds	Pounds	Metric Tons	Pounds	Metric Tons	Metric Tons
Quota allocated to Program	30,382,000	26,794,708	706,932	69,034,500	395,470	16,536
Aggregate Landings	29,634,253	24,041,223	704,478	68,047,170	241,094	14,198
% Utilization	97.5%	90.0%	99.6%	98.6%	61.0%	85.9%
ACL exceeded	No	No	No	No	No	No
<b>Effort</b>						
Entities holding share	2,779	838	132	489	27	52
Active vessels (number)	1,052	362	102	78	20	46
Days at Sea (days)	e	e	e	e	e	e
Trips (number)	4,303	1,728	e	552	e	e
Season length <sup>f</sup>	0.69	0.93	0.80	0.53	0.92	0.83
<b>Revenue<sup>g</sup></b>						
Catch Share Program Revenue (\$)	183,830,320	116,736,886	244,362,349	248,837,610	233,971,305	7,605,825
Non-Catch Share Program Revenue (\$)	h	h	h	11,613,773	h	g
Average price (\$/metric tons/\$/pound)	6.20	4.86	347	3.66	939	536
Catch Share Revenue per active vessel (\$/vessel)	174,744	322,478	2,217,818	3,190,226	11,698,565	166,551
Non-Catch Share Revenue per vessel (\$/vessel)	h	h	h	148,895	h	g
Catch Share revenue per trip (\$/trip)	42,721	67,556	e	450,793	e	e
Non-Catch Share revenue per trip (\$/trip)			h	21,039	h	g
<b>Other</b>						
Excessive Share Caps in place	Yes	Yes	Yes	Yes	Yes	Yes
Cost Recovery Fees Collected (\$) <sup>i</sup>	3,045,124	1,852,155	None	6,679,898	None	N/A

<sup>a</sup> American Fisheries Act Pollock Cooperatives

<sup>b</sup> Crab IFQ data are for the IFQ portion of the Bering Sea and Aleutian Islands Crab Rationalization Program and are for the 2010/2011 fishing year.

<sup>c</sup> Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80)

<sup>d</sup> Central Gulf of Alaska Rockfish Program data are for the Baseline Period (2009-2011).

<sup>e</sup> The Alaska Region does not manage by trips or days at sea, therefore these metrics are not reported, with the exception of halibut, sablefish and crab.

<sup>f</sup> The Alaska Region reports a season length index based upon the proportion of days when fishing occurs compared to the number of days when fishing is allowed.

<sup>g</sup> All revenue and cost recovery data have been adjusted by the GDP deflator for 2010.

<sup>h</sup> Since the Region does not manage trips<sup>e</sup> (and therefore cannot be defined), revenue from non-catch share species on catch share trips cannot be calculated.

<sup>i</sup> Cost recovery fees are based upon the prior year's ex-vessel revenue and program administration costs. Accordingly, there is year-to-year variation in the amount of cost recovery fees collected.

## **Alaska Halibut IFQ Program**

### **a. Management History**

The Alaska Halibut and Sablefish IFQ Program is managed under two different management authorities: The Northern Pacific Halibut Act (Halibut Act; 1937), which led to the eventual creation of the International Pacific Halibut Commission (established in 1953); and the Magnuson-Stevens Act (1976), which established the Regional Fishery Management Council system. The International Pacific Halibut Commission (IPHC) is responsible for the biological management of the halibut resource, including biological studies, stock assessments, basic regulatory authority and establishing the allowable biological catch limits. The North Pacific Fishery Management Council (NPFMC) in turn is responsible for establishing Annual Catch Limits (ACLs) and allocating the U.S. catch limits among various user groups.

Halibut fisheries were not overfished prior to the implementation of the IFQ Program; but, the fishery had been overcapitalized since the 1970s. When overcapacity was recognized as a major problem in the halibut fishery, it was unclear which agency or regulatory body had jurisdiction over limiting access. The fishing industry approached the newly formed North Pacific Council in the late 1970s to develop a limited entry program because such a measure was not available through the International Pacific Halibut Commission under the terms of the convention establishing the IPHC. The Council's first groundfish fishery management plan was enacted in 1978 and included provisions for establishing limited entry; however, jurisdictional issues delayed implementation of limited entry within the halibut fishery. This jurisdictional issue was not solved until passage of The Northern Pacific Halibut Act of 1982, which designated that limited entry and allocation decisions were under the jurisdiction of the North Pacific Council. The Council did not re-address limited entry in the halibut fishery until 1990, when these discussions were combined with the discussions of limited entry in the sablefish fishery. The regulatory amendments outlining IFQs as the chosen management tool for halibut and sablefish were published in 1992 and later implemented in 1995.

The Alaska Halibut and Sablefish IFQ Program operates within the Bering Sea and Aleutian Islands and the Gulf of Alaska with multiple area and vessel categories. The IFQ Program has 14 allocations of halibut and sablefish quota based upon species or area combinations. Although halibut and sablefish fisheries are managed under the same IFQ Program, there are some key differences between halibut and sablefish management; therefore, these assessments are presented separately. Halibut are managed by the International Pacific Halibut Commission under the authority of the Halibut Act, while Sablefish are managed by NOAA Fisheries and the North Pacific Council under the authority of the Magnuson-Stevens Act.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The cost recovery fee can be a maximum of 3% of the ex-vessel value; the fee is set annually and can vary with costs and ex-vessel value. Often, the amount billed by NOAA Fisheries differs from the amount collected from Halibut IFQ Program permit holders. IFQ Program permit holders may challenge these fees and some eventually pay based on their demonstrated value received rather than on the standard NOAA Fisheries computed value on which billings were based. Cost recovery in the Alaska Halibut IFQ Program started with a 2001

collection based on the 2000 fishing year. The amount collected by species was derived using pro-rata species share of amount billed applied to the amount collected. In 2004, the total amount collected for halibut and sablefish cost recovery was \$3,551,629; 2004 data are not available by species (Figure 96). In 2011, NOAA Fisheries collected \$3.0 million (1.6% of ex-vessel value) for cost recovery in the Alaska Halibut IFQ Program.

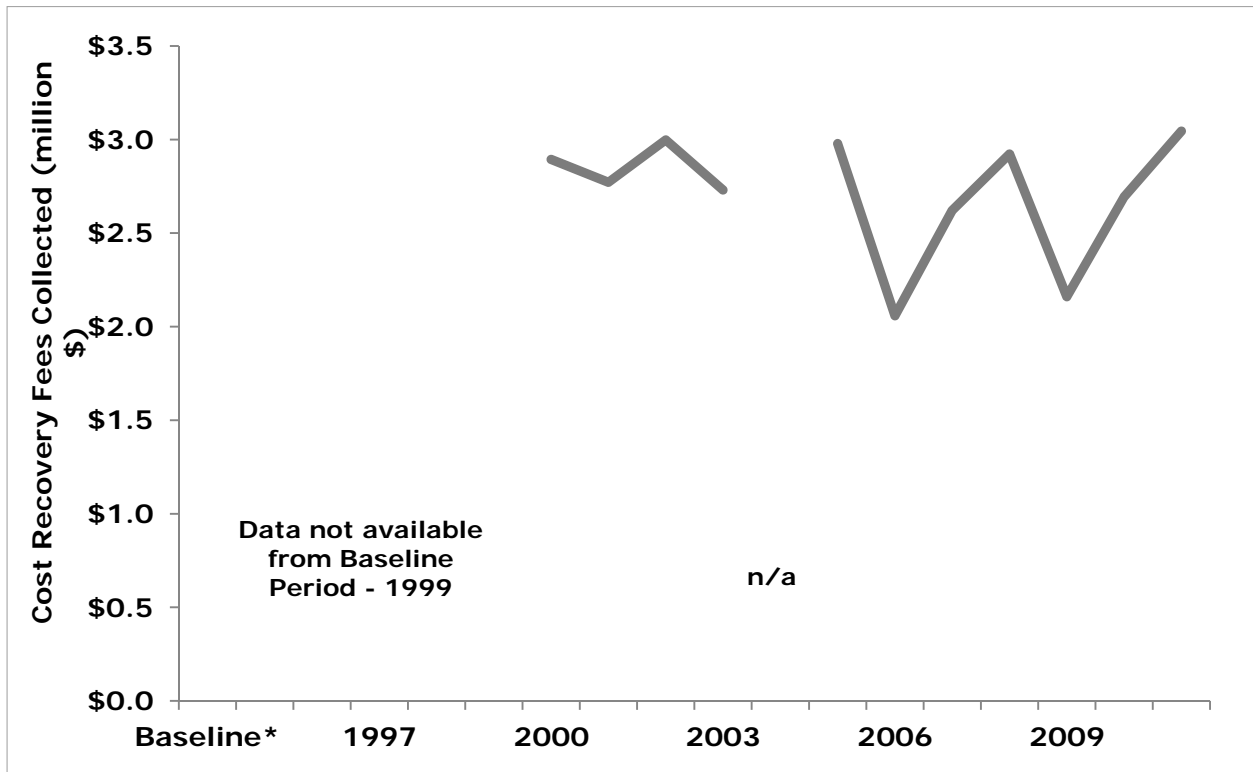


Figure 96. Halibut cost recovery fees (inflation-adjusted 2010 dollars) collected in the Alaska Halibut IFQ Program.<sup>11</sup>

The purpose of excessive quota share caps is to prevent individual shareholders (or entities) from controlling production (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. There are excessive share caps in place in the Alaska Halibut IFQ Program. There are multiple types of caps: quota share unit caps apply for specific geographic areas, based upon a percentage of 1996 quota share pools; caps on numbers of blocks depend on whether unblocked quota share also is held. No entity can hold more than 0.5% or 1.5% of either halibut or sablefish shares, respectively, based upon geographic area combinations, unless they have been grandfathered to exceed these limits. Vessel use caps for specific geographic areas also limit the amount of IFQ that can be harvested by individual vessels.

<sup>11</sup> The Cost Recovery Fee Collection Program began in 2000 and 2004 data are not available by species.

## **b. Program Objectives**

The Alaska Halibut and Sablefish IFQ Program was developed by the North Pacific Fishery Management Council and implemented by NOAA Fisheries in 1995. The primary objectives of the IFQ Program are to 1) eliminate gear conflicts; 2) address safety concerns; and 3) improve product quality. A percentage of the halibut and sablefish annual quota is allocated to the Community Development Quota Program.

## **c. Key Events/Features**

The North Pacific Fishery Management Council designed the Alaska Halibut IFQ Program to allow eligibility based upon U.S. citizenship (or being a U.S. entity for non-individuals) and historical participation. Those eligible for initial allocations had to be owners or leaseholders of vessels with landings during 1988-1990. Initial halibut quota shares were based upon the best five of seven years of catch history from 1984 – 1990. Those who wished to receive quota share by transfer after the initial allocation had to demonstrate a minimum amount of active time as harvesting crew in any U.S. commercial fishery or CDQ entities. Other U.S. entities are allowed to purchase the “catcher/processor” (Category “A”) type of quota share, but non-individual entities new to the program may not acquire catcher vessel quota share. Halibut shares are distributed geographically.

Both quota shares (as a percentage of the catch limit) and annual IFQ pounds are designated by vessel length category and operation type: catcher vessel quota shares and freezer boat shares. Quota shares can be sold to other eligible permit holders. Transfers are limited by excessive share provisions. Leasing, or annual transfers of quota pounds without underlying quota share is unrestricted for freezer shares, but very restricted for catcher vessel quota share and IFQ. The program also limits the use of shares outside of designated vessel type and length categories, although over time the ‘fish down’ and ‘fish up’ provisions have somewhat relaxed the vessel length restrictions.

The North Pacific Council also included owner-on-board requirements for use of catcher vessel shares and limits on the use of hired skippers. The North Pacific Council and NOAA Fisheries implemented a loan program to primarily assist entry-level fishermen and fishermen who fish from small vessels. This revolving loan program is funded from a portion of the cost recovery fees collected.

## **d. Recent Trends**

The Baseline Period refers to the average of the three years prior to the implementation of the IFQ Program (1992 – 1994).

### **i. Catch and landings**

Halibut quota and landings are 40% lower in 2011 than in the Baseline Period (Figure 97). Upon implementation of this catch share program, there was a 21% reduction in halibut quota and a resulting 33% decrease in halibut landings. Halibut quota trended upward through 2000, when there was a 9% quota reduction (53 million pounds) compared to the previous year (58 million pounds). Quota ranged from 53 million pounds to 59 million pounds from 2000-2004 and then

was reduced a total of 50% from 2005-2011, with the decline from 2010 to 2011 accounting for a third of the reduction (10 million pounds) in quota during this time period. Halibut landings followed a similar trend: landings increased by 60% to 52 million pounds in 2000 compared to 32 million pounds of halibut landed in 1995. However, due principally to the lack of strong new year classes in the fishery, this trend was reversed between 2005 and 2011: halibut quota was reduced by 47% in 2011 (30 million pounds) compared to 2005. Landings decreased accordingly by 46% from 55 million pounds in 2005 to 30 million pounds in 2011.

There is no ACL defined for halibut because it is managed under the Halibut Act and the International Pacific Halibut Commission. The closest surrogate is the statewide catch limit for halibut. During 1992 – 1994 (Baseline Period), some area allocations were exceeded for halibut; therefore, the utilization rate was 102% in this time period. Since implementation of the Halibut IFQ Program, halibut catch limits have not been exceeded and utilization of the available halibut quota has been greater than 90% over the duration of the Alaska Halibut and Sablefish IFQ Program, with the exception of 1995 when utilization was 86% (Figure 98).

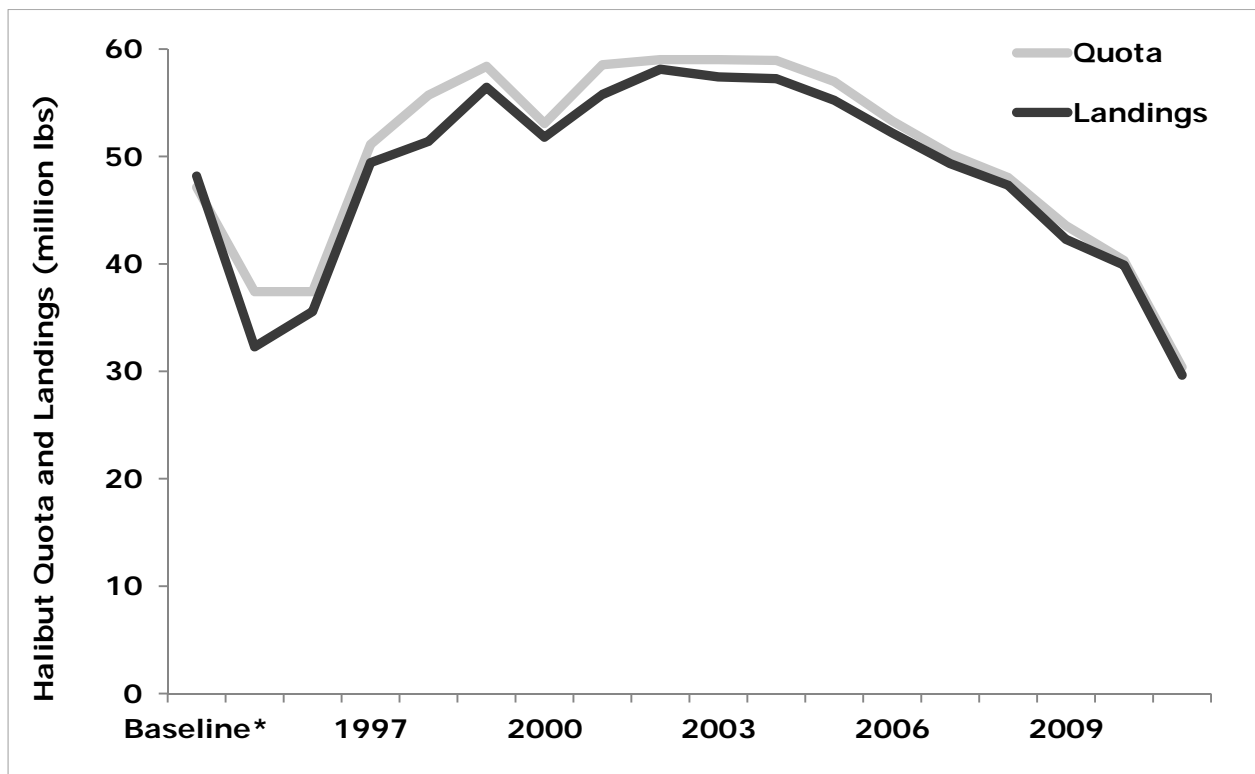


Figure 97. Quota and landings in the Alaska Halibut IFQ Program

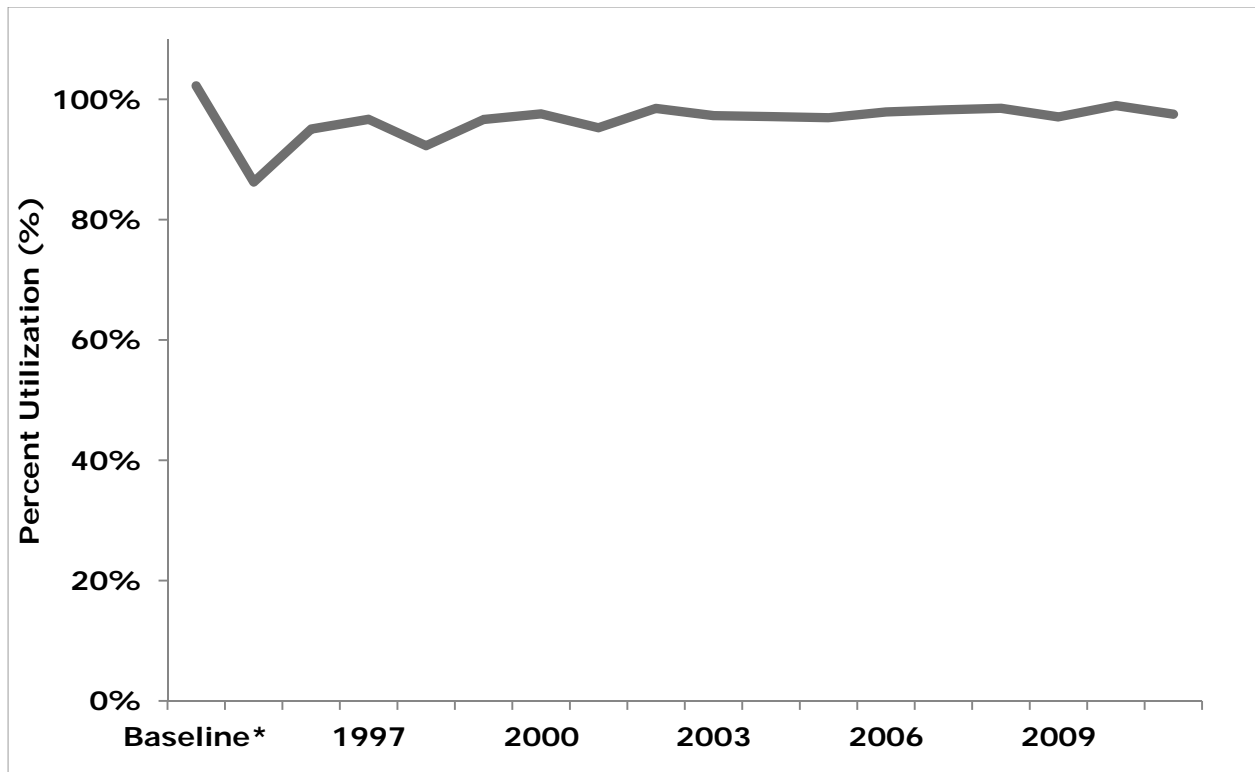


Figure 98. Utilization of available quota in the Alaska Halibut IFQ Program

ii. Effort

There were 4,829 persons (individuals or non-individuals) initially issued quota share before the Halibut IFQ Program began. Over the duration of the IFQ Program, the number of entities holding Halibut quota shares decreased by 42% from 4,829 (in 1995) to 2,779 (in 2011; Figure 99). Active vessels include the number of vessels (including catcher/processors) with any commercial landings of IFQ Program halibut. The Baseline Period value represents the number of unique vessels with landings on State fishing permits. There were 70% fewer vessels landing halibut in 2011 compared to the Baseline Period (Figure 100). In the first year of the Alaska Halibut IFQ Program, there was a 40% reduction in the number of active vessels (2,060 vessels) landing halibut compared to the Baseline Period (3,432 vessels). The number of active vessels then began a fairly steady decline (on average, 1-6% per year) from 1996 to 2011, with the exception of 1998 when there was a 17% reduction in the number of active vessels compared to 1997.

There were 40% fewer trips landing halibut taken in 2011 (4,300) compared to the Baseline Period (7,200; Figure 101). Upon implementation of the Alaska Halibut IFQ Program, the number of trips landing halibut decreased by 11% in 1995 compared to the Baseline Period. There were 3% fewer trips landing halibut in 2000 (6,999 trips) compared to 1995 (6,423 trips). There was a slight decline (7%) in the number of trips landing halibut between 2000 and 2005 (6,700 trips). However, there were one-third fewer trips landing halibut in 2011 (4,300 trips) compared to 2005 (6,700 trips; Figure 101).

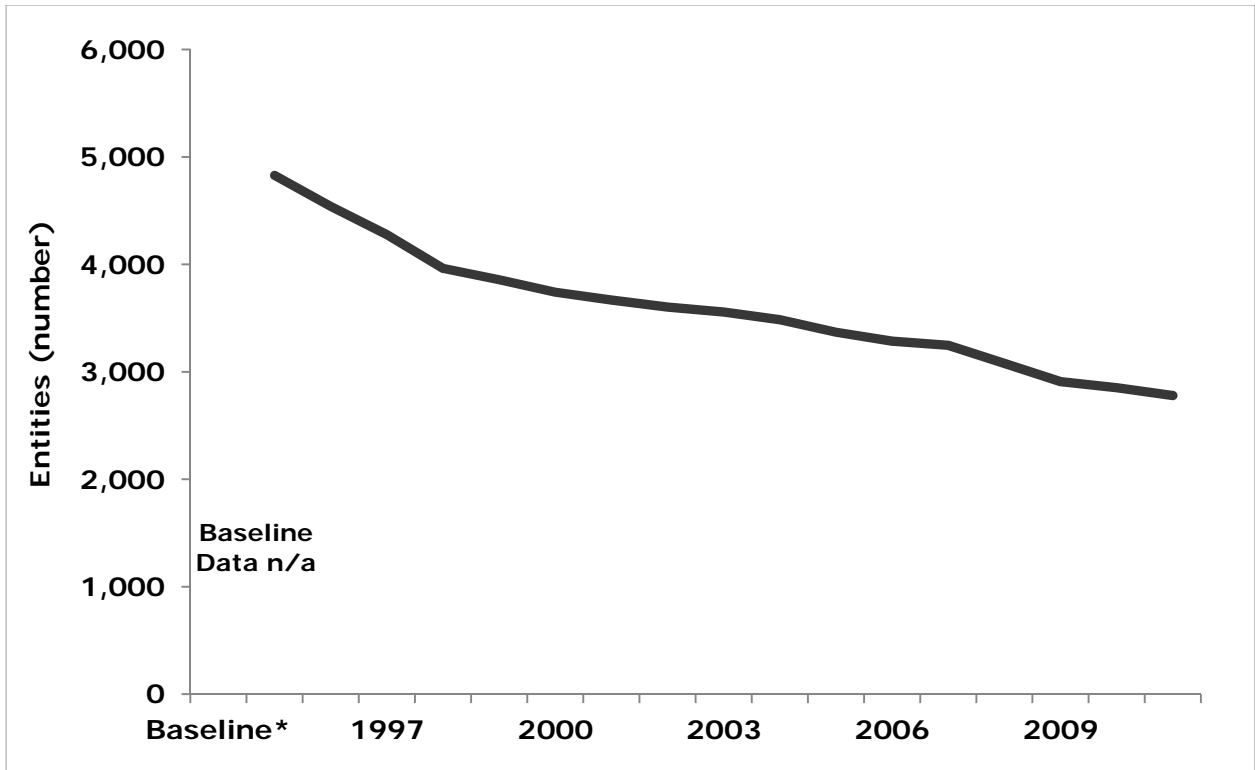


Figure 99. Number of entities holding share in the Alaska Halibut IFQ Program

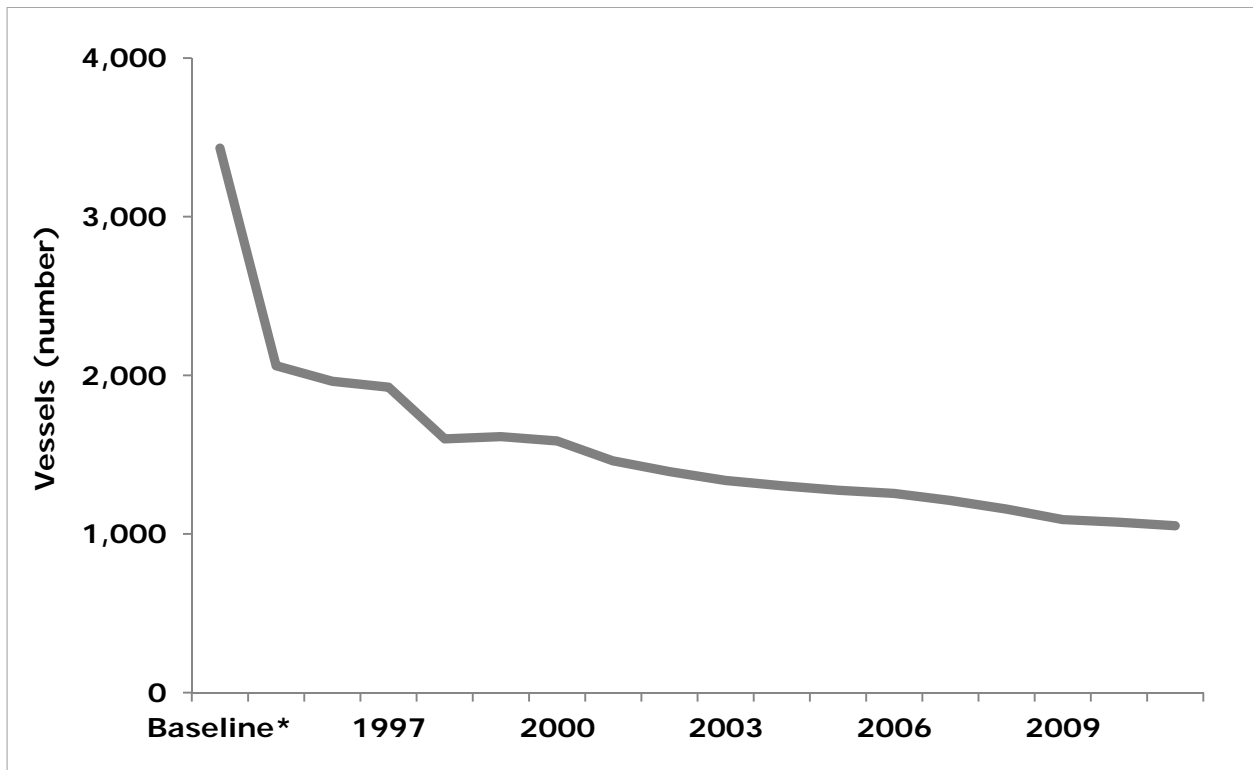


Figure 100. Active vessels fishing quota in the Alaska Halibut IFQ Program



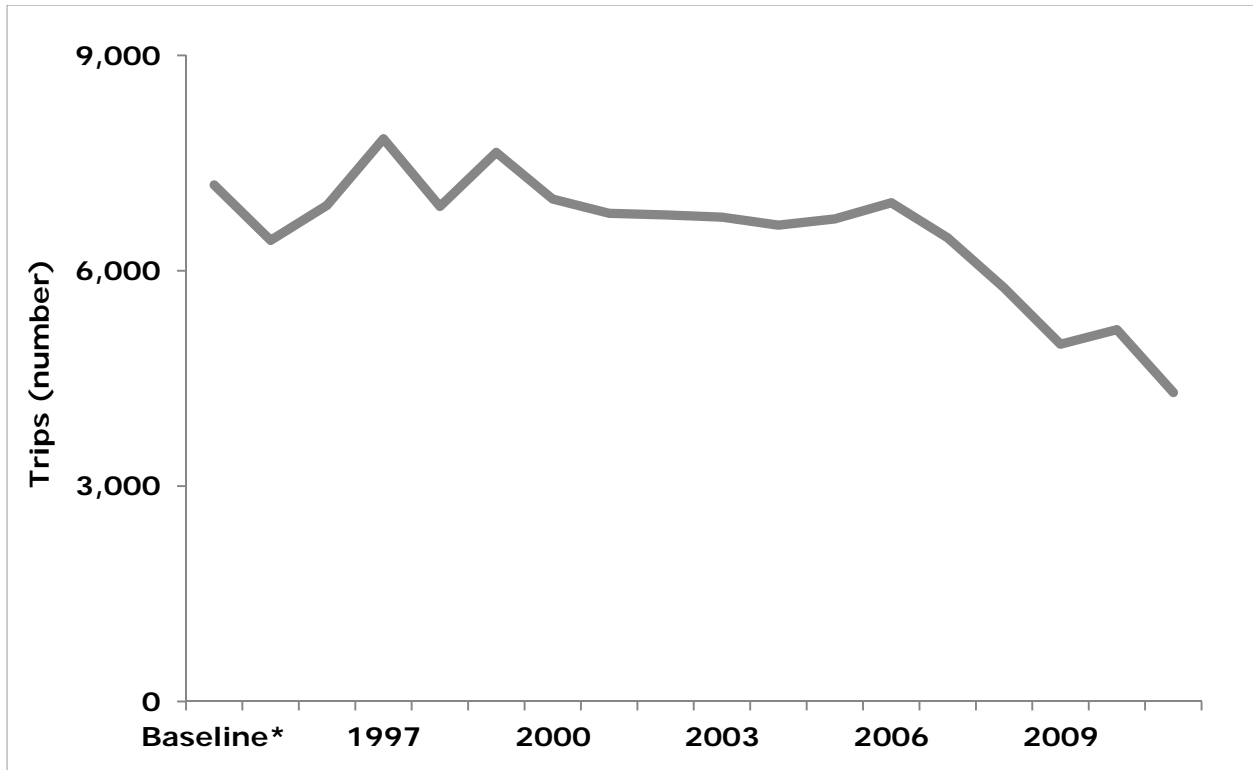


Figure 101. Number of trips harvesting halibut in the Alaska Halibut IFQ Program

The season length index was calculated as the number of active days divided by the number of days in the regulatory season. This index is created by summarizing season utilization over all halibut fishing areas. Using this index provides an indication of the temporal utilization of the halibut resource and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple areas to achieve an overall program season length. During the Baseline Period, areas were open to halibut fishing for four days per year the season length index was 0.01 for this period. Upon implementation of the Halibut IFQ Program, the regulatory season length was increased to 246 days and the season length index improved to 0.73. Between 1995 – 2011, the season length index fluctuated between 0.68 -0.75 (Figure 102). Due to the manner in which the Program is managed (and as a result how data are collected), the number of days at sea fishing halibut is not available.

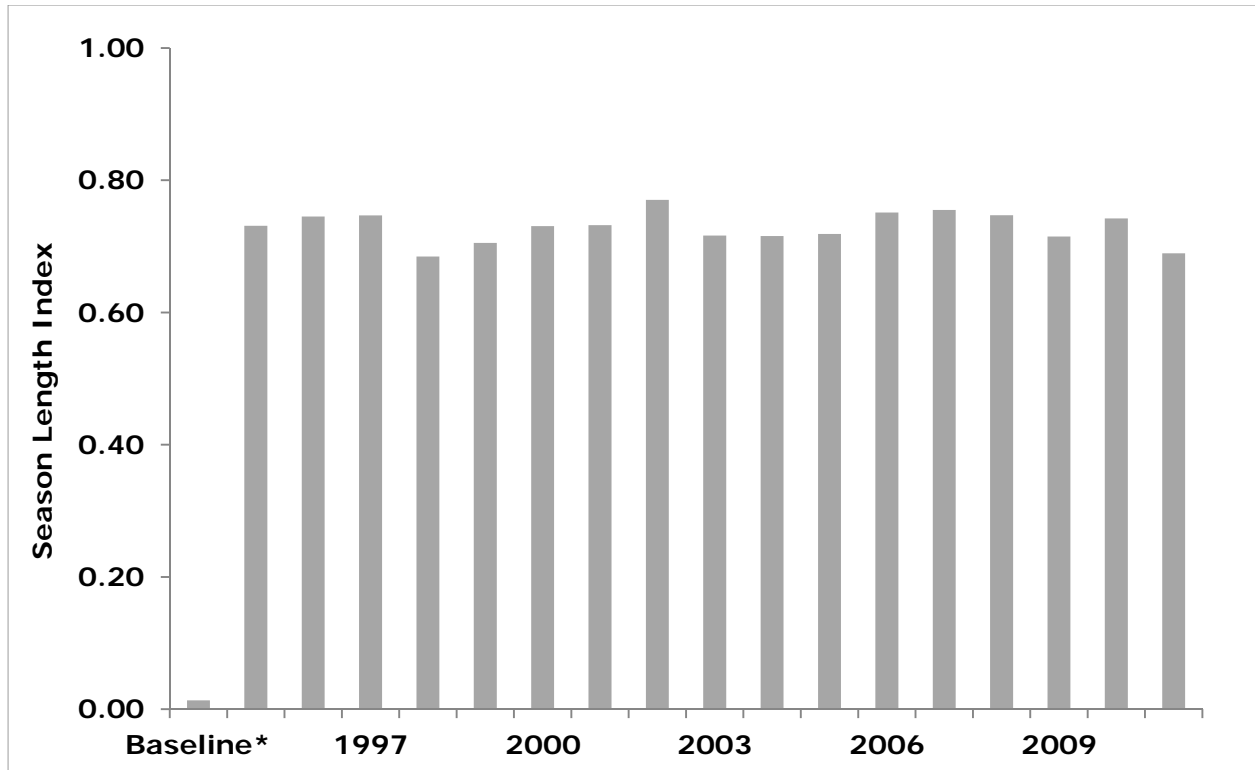


Figure 102. Season length index in the Alaska Halibut IFQ Program

- iii. Revenue - All revenue and cost recovery data have been adjusted by the GDP deflator indexed for 2010.

The ex-vessel revenue of IFQ Program commercial landings was estimated by applying the State of Alaska weighted average prices by species and management area to IFQ Program commercial landings. Halibut revenue in 2011 was 110% greater than the Baseline Period (Figure 103). Halibut revenue increased by 4% in the first year of the Alaska Halibut and Sablefish IFQ Program from \$88 million during the Baseline Period to \$92 million in 1995. Revenue generally trended upward between 1995 and 2007 to \$227 million at an average annual rate of 12%, albeit there were sizable declines in 1998 (-37%) and 2001 (-17%). Halibut revenue declined the two following years to \$130 million in 2009, but increased in 2011 to \$183 million. Despite a 40% decline in halibut quota and landings, revenue increased by 109% over the course of the IFQ Program (Baseline Period – 2011).

Similar to revenue, the average price per pound of halibut increased by 239% over the course of the IFQ Program (Figure 104). Halibut average prices increased by 55% from \$1.83 per pound during the Baseline Period to \$2.84 per pound in 1995 (Figure 104). Average prices for halibut continued to increase by 19% between 1995 and 2000 (\$3.17 per pound). Also, the average price per pound of halibut trended upward between 2000 and 2011, notwithstanding a sizable decrease in 2009 (-30%) from the previous year.

Halibut revenue per active vessel in 2011 was a 581% greater than the Baseline Period (Figure 105). Halibut revenue per vessel increased by 73% in the first year of the Halibut and Sablefish IFQ Program from \$26,000 during the Baseline Period to \$60,400 in 1995. Revenue per vessel

grew by 133% between 1995 and 2000 (\$104,000). In 2001, revenue per vessel declined 8% from the previous year, but then trended upward through 2007 to \$185,000. With the exception of 2009 (\$119,000), revenue per vessel exceeded \$170,000 for five of the past six years of the program (2006 – 2011).

Halibut revenue per trip more than quadrupled over the course of the Alaska Halibut and Sablefish IFQ Program (Figure 106). In the first year of the IFQ Program, halibut revenue per trip increased by 16% from \$12,000 during the Baseline Period to \$14,000 in 1995. With the exception of some sizable declines in 1998 (-29%), 2001 (-13%) and 2009 (-28%), halibut revenue per trip generally increased under the IFQ Program.

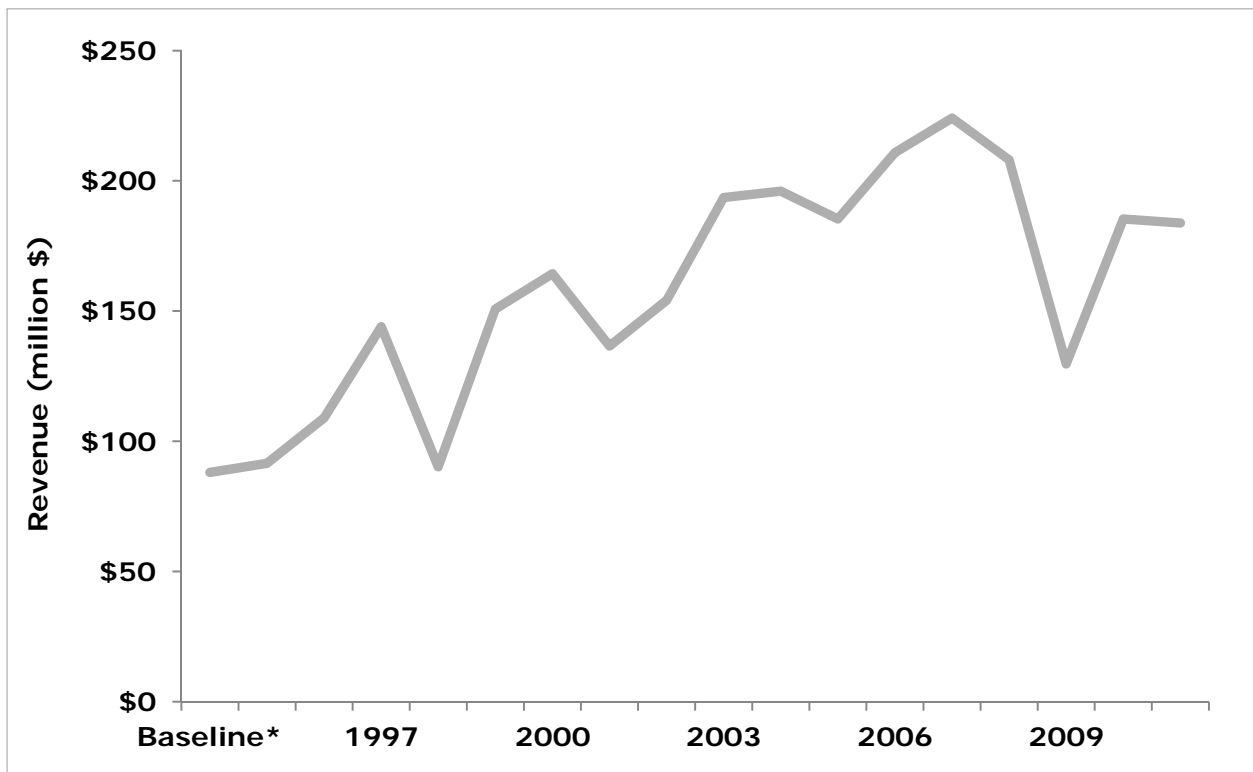


Figure 103. Total halibut revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the Alaska Halibut IFQ Program

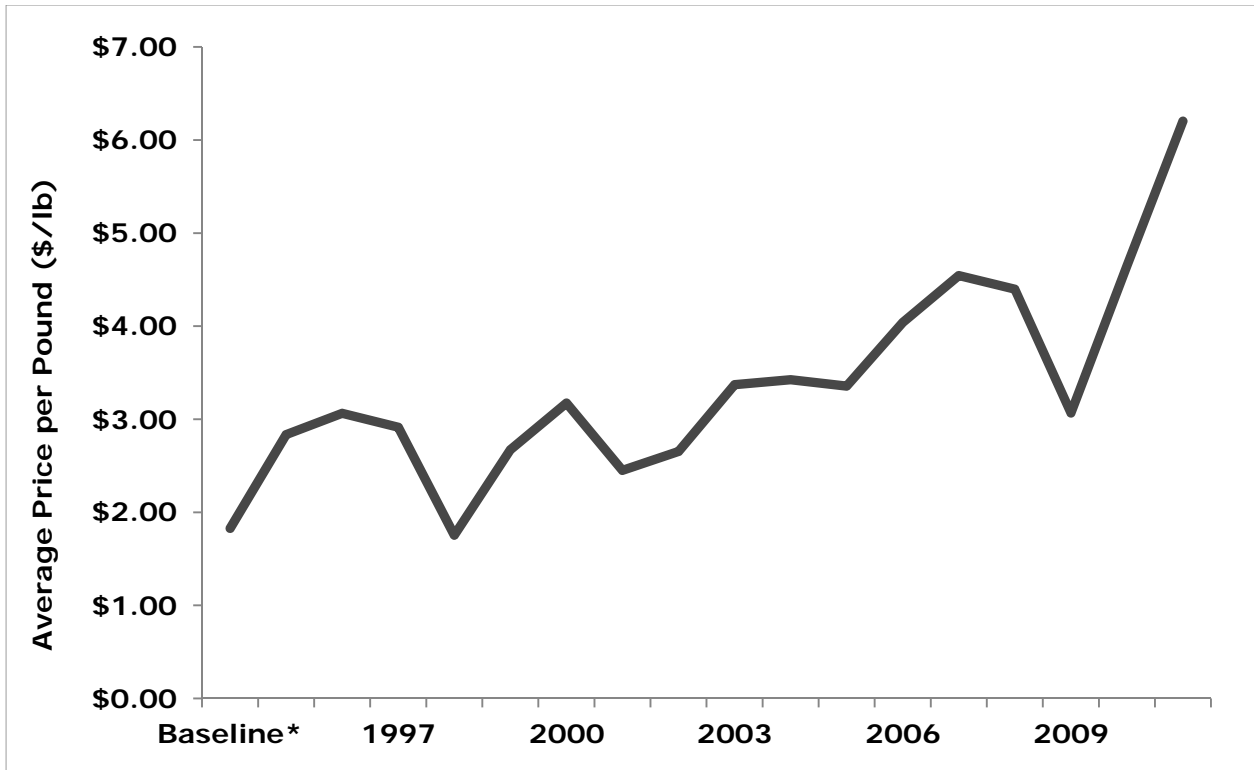


Figure 104. Average halibut price per pound (inflation-adjusted 2010 dollars) in the Alaska Halibut IFQ Program

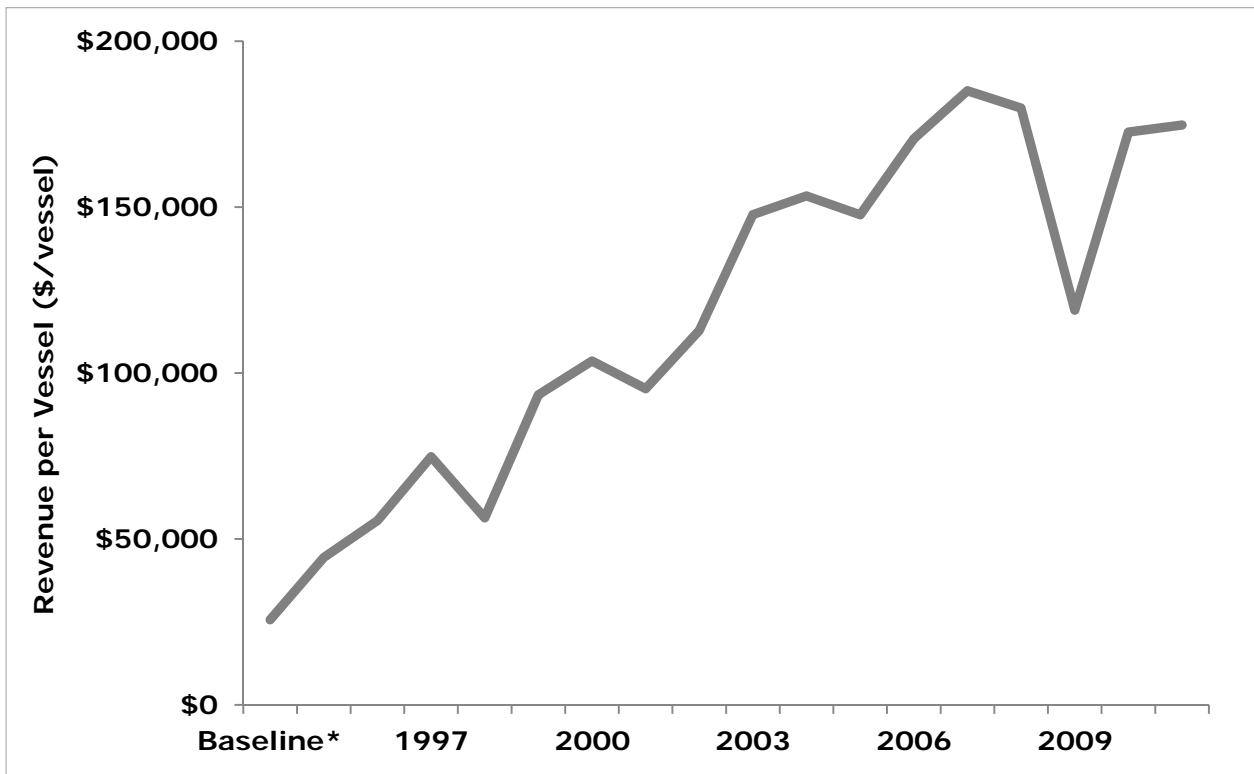


Figure 105. Revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the Alaska Halibut IFQ Program

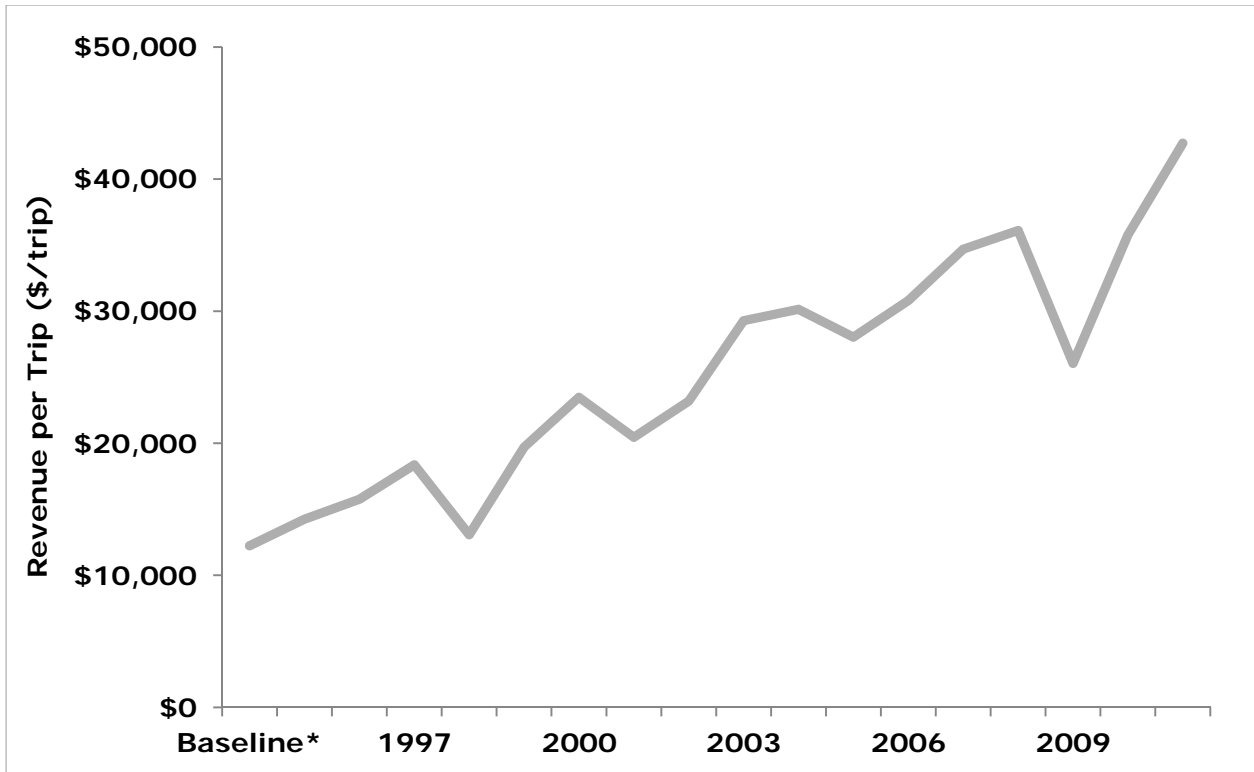


Figure 106. Revenue (inflation-adjusted 2010 dollars) per trip that vessels fish quota in the Alaska Halibut IFQ Program

## **Alaska Sablefish IFQ Program**

### **a. Management history**

Sablefish was originally managed under its own fishery management plan (FMP) and was later combined with the groundfish FMP in the Gulf of Alaska (1978) and Bering Sea and Aleutian Islands (1982). Coincident with the exit of foreign harvesters in 1987, the domestic portion of the sablefish fishery grew rapidly during the 1980s. In 1985, the North Pacific Council allocated the vast majority of the sablefish quota to vessels using hook-and-line and pot gear in the Gulf of Alaska, with a small portion allocated to vessels using trawl gear. Pot gear was subsequently phased out in the Gulf of Alaska due to gear conflicts. The North Pacific Council allocated one-half of the sablefish quota in the Bering Sea to the fixed gear fleet and the remainder to trawlers. It was not until 1987 that the Council began to consider proposals for limited entry in the sablefish fishery.

The regulatory amendments outlining IFQ Programs as a management tool for halibut and sablefish were published in 1992 and later implemented in 1995. The Alaska Halibut and Sablefish IFQ Program operates within the Bering Sea and Aleutian Islands and the Gulf of Alaska with multiple area and vessel categories. The IFQ Program has 14 allocations of halibut and sablefish quota based upon species or area combinations. Although these two fisheries are managed under the same IFQ Program, there are some key differences between halibut and sablefish management; therefore, the assessments are presented separately. Sablefish are managed by NOAA Fisheries and the North Pacific Council under the authority of the Magnuson-Stevens Act. Halibut and sablefish are combined in the same IFQ Program to minimize bycatch and discard mortality.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The cost recovery fee can be a maximum of 3% of the ex-vessel value; the fee is set annually and can vary with costs and ex-vessel value. Often, the amount billed by NOAA Fisheries differs from the amount collected from Alaska Halibut and Sablefish IFQ Program permit holders. IFQ Program permit holders may challenge these fees and some eventually pay based on their demonstrated value received rather than on the standard NOAA Fisheries computed value on which billings were based. Cost recovery in the Alaska Halibut and Sablefish IFQ Program started with a 2001 collection based on the 2000 fishing year. The amount collected by species was derived using pro-rata species share of amount billed applied to the amount collected. In 2004, the total amount collected for halibut and sablefish cost recovery was \$3,551,629; 2004 data are not available by species (Figure 107). In 2011, NOAA Fisheries collected \$1.8 million (1.6% of ex-vessel value) for cost recovery in the Alaska Sablefish IFQ Program.

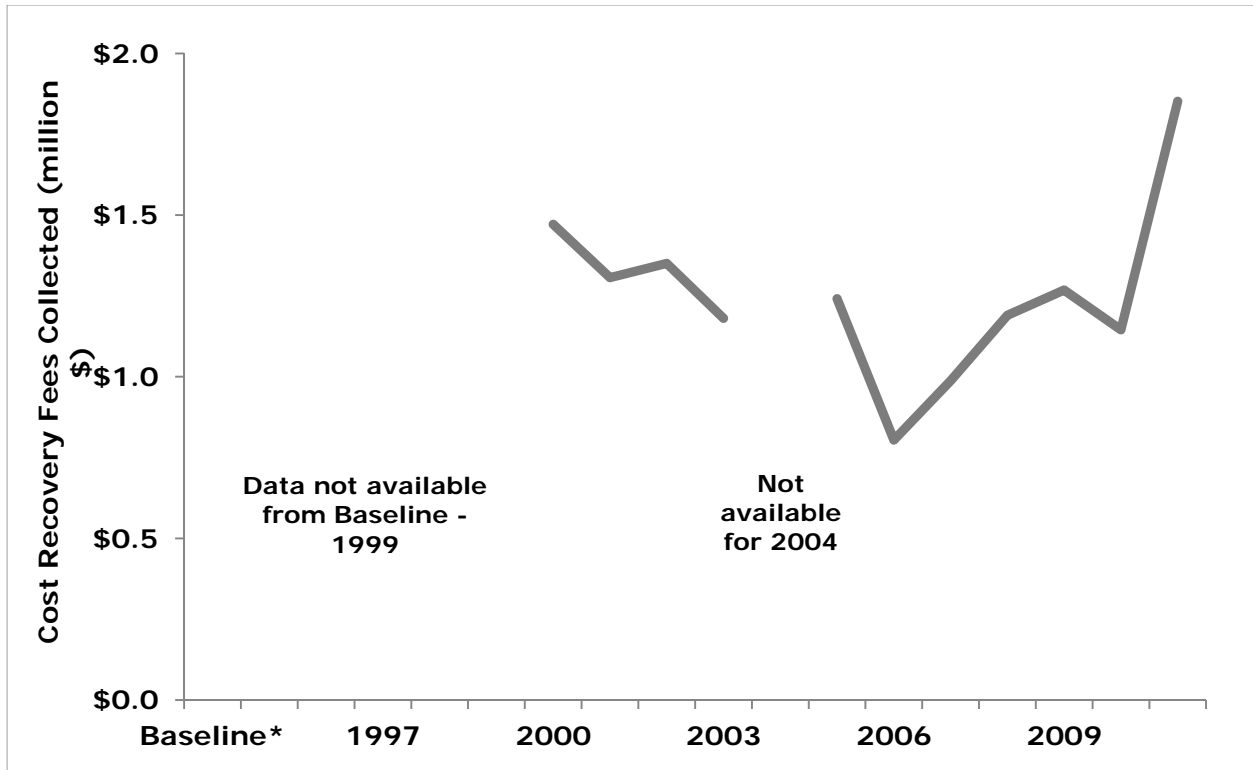


Figure 107. Sablefish cost recovery fees (inflation-adjusted 2010 dollars) collected in the Alaska Sablefish IFQ Program.<sup>12</sup>

The purpose of excessive quota share caps is to prevent individual shareholders (or entities) from controlling production (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. There are excessive share caps in place in the Alaska Sablefish IFQ Program. There are multiple types of caps: quota share unit caps apply for specific geographic areas, based upon a percentage of 1996 quota share pools; caps on numbers of blocks depend on whether unblocked quota share also is held. No entity can hold more than 0.5% or 1.5% of either halibut or sablefish shares, respectively, based upon geographic area combinations, unless they have been grandfathered to exceed these limits. Vessel use caps for specific geographic areas also limit the amount of IFQ that can be harvested by individual vessels.

#### **b. Program Objectives**

The Alaska Halibut and Sablefish IFQ Program was developed by the North Pacific Fishery Management Council and implemented by NOAA Fisheries in 1995. The primary objectives of the IFQ Program are to 1) eliminate gear conflicts; 2) address safety concerns; and 3) improve product quality. A percentage of the halibut and sablefish annual quota is allocated to the Community Development Quota Program.

<sup>12</sup> The Cost Recovery Fee Collection Program began in 2000 and 2004 data are not available by species.

### **c. Key Events/Features**

The North Pacific Fishery Management Council designed the Alaska Sablefish IFQ Program to allow eligibility based upon U.S. citizenship (or being a U.S. entity for non-individuals) and historical participation. Those eligible for initial allocations had to be owners or leaseholders of vessels with landings during 1988-1990. Initial sablefish quota shares were based upon the best five of six years of catch history from 1985 – 1990. Those who wished to receive quota share by transfer after the initial allocation had to demonstrate a minimum amount of active time as harvesting crew in any U.S. commercial fishery or CDQ entities. Other U.S. entities are allowed to purchase the “catcher/processor” (Category “A”) type of quota share, but non-individual entities new to the program may not acquire catcher vessel quota share. Sablefish shares are distributed geographically.

Both quota shares (as a percentage of the catch limit) and annual IFQ pounds are designated by vessel length category and operation type: catcher vessel quota shares and freezer boat shares. Quota shares can be sold to other eligible permit holders. Transfers are limited by excessive share provisions. Leasing, or annual transfers of quota pounds without underlying quota share, is unrestricted for freezer shares, but very restricted for catcher vessel quota share and IFQ. The program also limits the use of shares outside of designated vessel type and length categories, although over time the ‘fish down’ and ‘fish up’ provisions have somewhat relaxed the vessel length restrictions.

The North Pacific Council also included owner-on-board requirements for use of catcher vessel shares and limits on the use of hired skippers. The North Pacific Council and NOAA Fisheries implemented a loan program to primarily assist entry-level fishermen and fishermen who fish from small vessels. This revolving loan program is funded from a portion of the cost recovery fees collected.

### **d. Recent Trends**

The Baseline Period refers to the average of the three years prior to the implementation of the IFQ Program (1992 – 1994).

#### **i. Catch and landings**

Sablefish quota and landings are approximately 50% lower in 2011 than during the Baseline Period (Figure 108). Upon implementation of the IFQ Program, sablefish quota decreased by 5% from 48 million pounds during the Baseline Period to 46 million pounds in 1995. Landings also decreased from 47 million pounds in the Baseline Period to 41 million pounds in 1995: a 13% reduction. Sablefish quota and landings declined further (by 34% and 33%, respectively) in 2000 (30 million pounds and 28 million pounds, respectively) compared to 1995. Sablefish quota and landings mostly trended upward between 2000 and 2004; average annual quota increases were 7%. In 2005, sablefish quota and landings began a downward trend (average annual decreases were 7%) until 2011 when quota increased by 8% (27 million pounds) compared to 2010 (25 million pounds; Figure 108). Utilization of the available sablefish quota has fluctuated between 88% and 98% over the duration of the Alaska Halibut and Sablefish IFQ Program (Figure 109).



The Annual Catch Limit (ACL) is equivalent to the Acceptable Biological Catch (ABC) for sablefish management purposes. Prior to implementation of the Halibut and Sablefish IFQ Program, sablefish ABCs were specified according to areas, while Total Allowable Catch was allocated by area and gear. During the Baseline Period, the sablefish ABC was exceeded for two out of three years. Over the duration of the Sablefish IFQ Program, the ABC has not been exceeded.

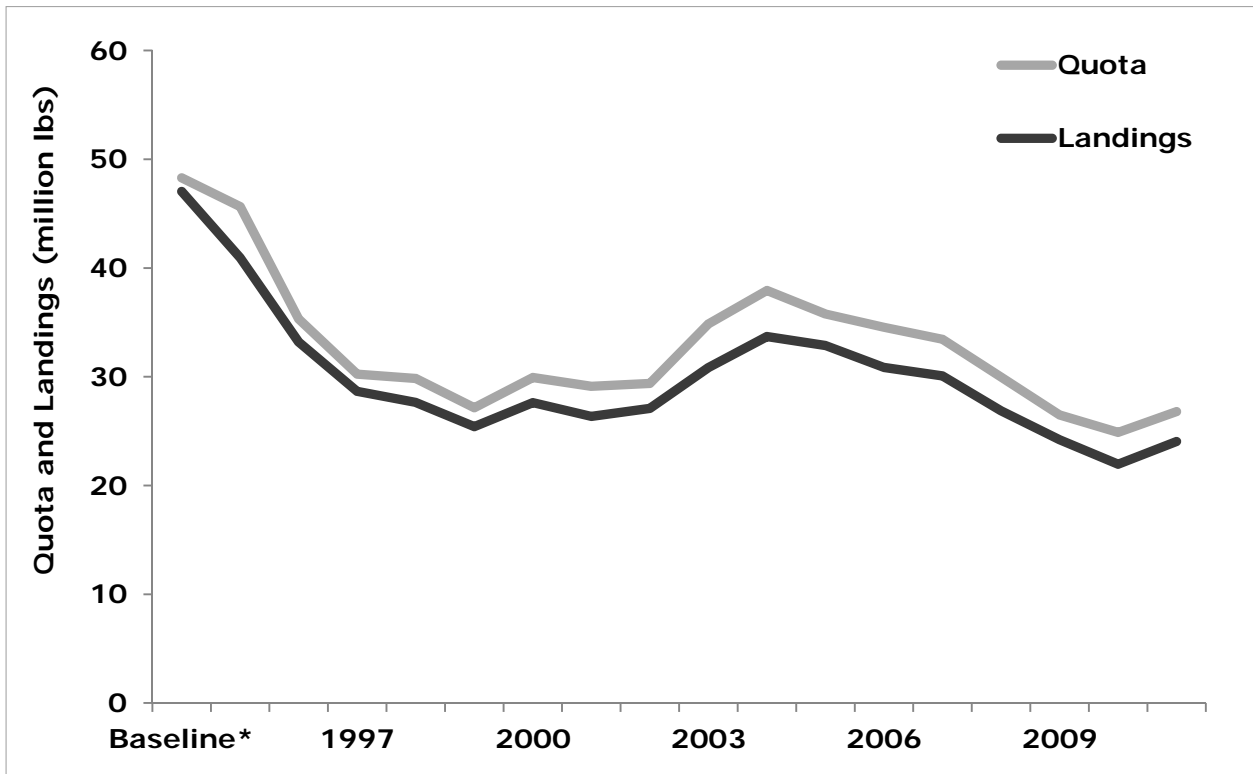


Figure 108. Quota and landings in the Alaska Sablefish IFQ Program

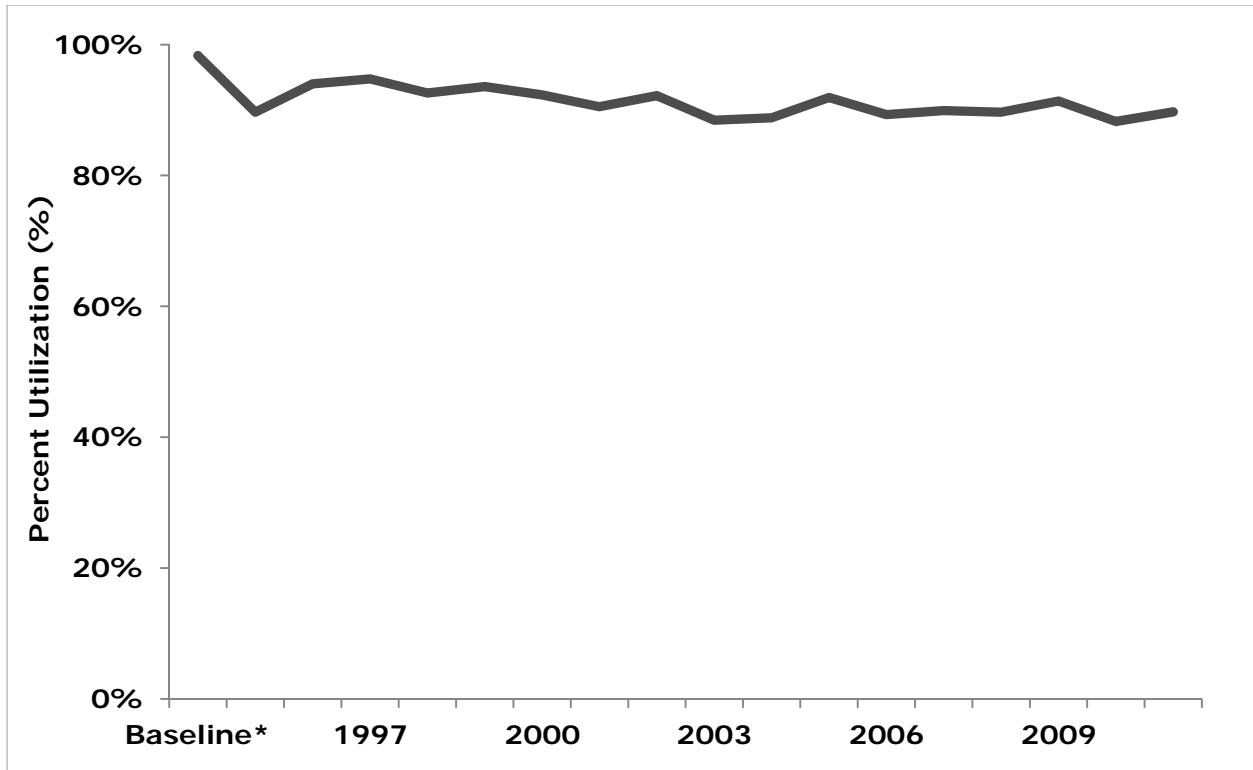


Figure 109. Utilization of available quota in the Alaska Sablefish IFQ Program

ii. Effort

There were 1,054 entities holding Sablefish quota share in 1995 and the number of entities holding Sablefish share decreased by 20% between the Baseline Period (1,054 entities) and 2011 (838 entities; Figure 110).

An active vessel refers to the number of sablefish vessels (including catcher/processors) with any commercial landings of IFQ Program sablefish. The Baseline Period value represents the number of unique vessels with commercial sablefish landings. Two-thirds of the vessels landing sablefish during the Baseline Period are no longer active in the Alaska Sablefish IFQ Program in 2011 (Figure 111). In the first year of the Alaska Sablefish IFQ Program, the number of active vessels landing sablefish decreased by 45% from 1,109 vessels during the Baseline Period to 615 vessels in 1995. Between 1996 and 1998, the average annual decrease in the number of active vessels fishing sablefish was 8%. Since 1998, the decline in active vessels landing sablefish stabilized at a 2% annual rate.

There were 24% fewer trips landing sablefish in 2011 (1,728 trips) compared to 1995 (2,276 trips; Figure 112). The number of trips fell 7% and 9%, respectively, from the previous year in 1996 and 1997 and then remained relatively flat (-6% to 4% annually) through 2006. There were 11% fewer trips landing sablefish in 2011 (1,728 trips) compared to 2006 (1,937 trips).

The season length index was calculated as the number of active days divided by the number of days in the regulatory season. This index is created by summarizing season utilization over all sablefish fishing areas. Using this index provides an indication of the temporal utilization of the

sablefish resource and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple areas to achieve an overall program season length. During the Baseline Period, some areas were open to fishing for sablefish for as little as 51 days and the season length index is 0.07. Upon implementation of the IFQ Program, fishing was allowed for 246 days and the season length index was 0.96. Over the course of the Sablefish IFQ Program, the season length index has fluctuated between 0.93 – 0.97 (Figure 113). Due to the manner in which the Program is managed (and as a result how data are collected), the number of days at sea fishing halibut is not available.

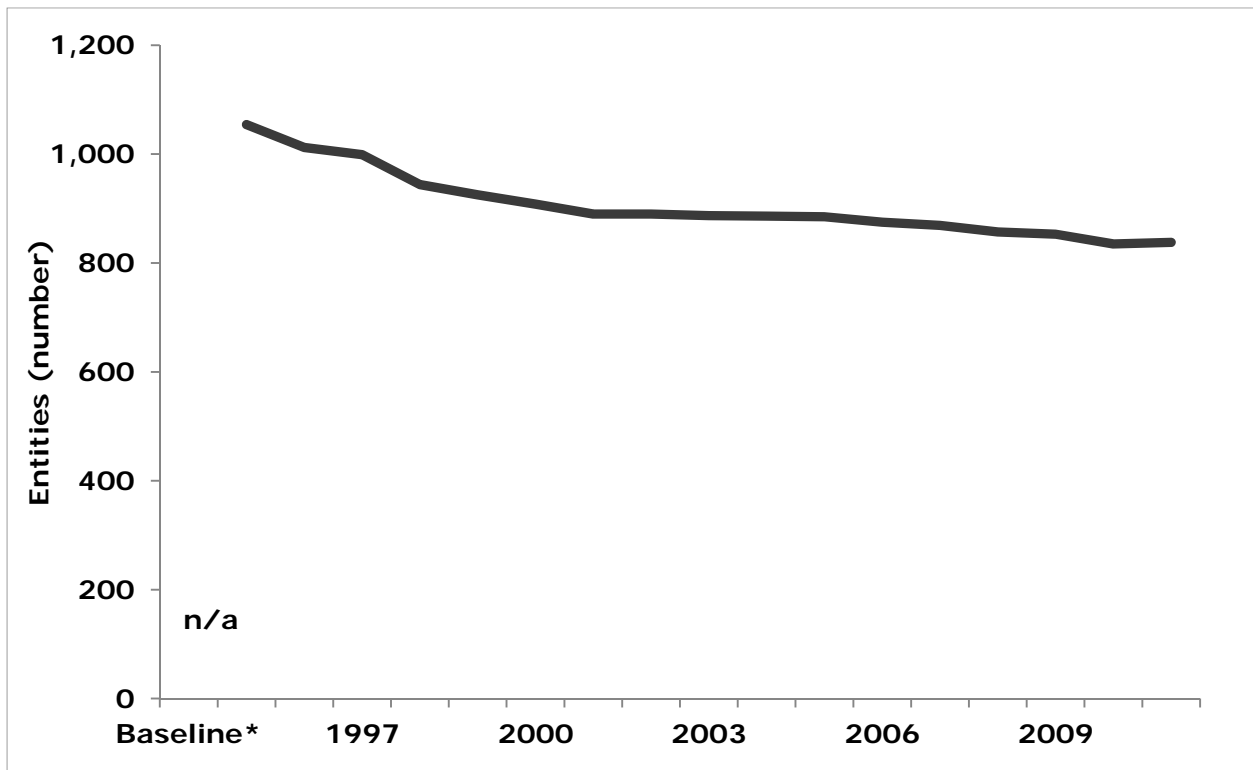


Figure 110. Number of entities holding share in the Alaska Sablefish IFQ Program

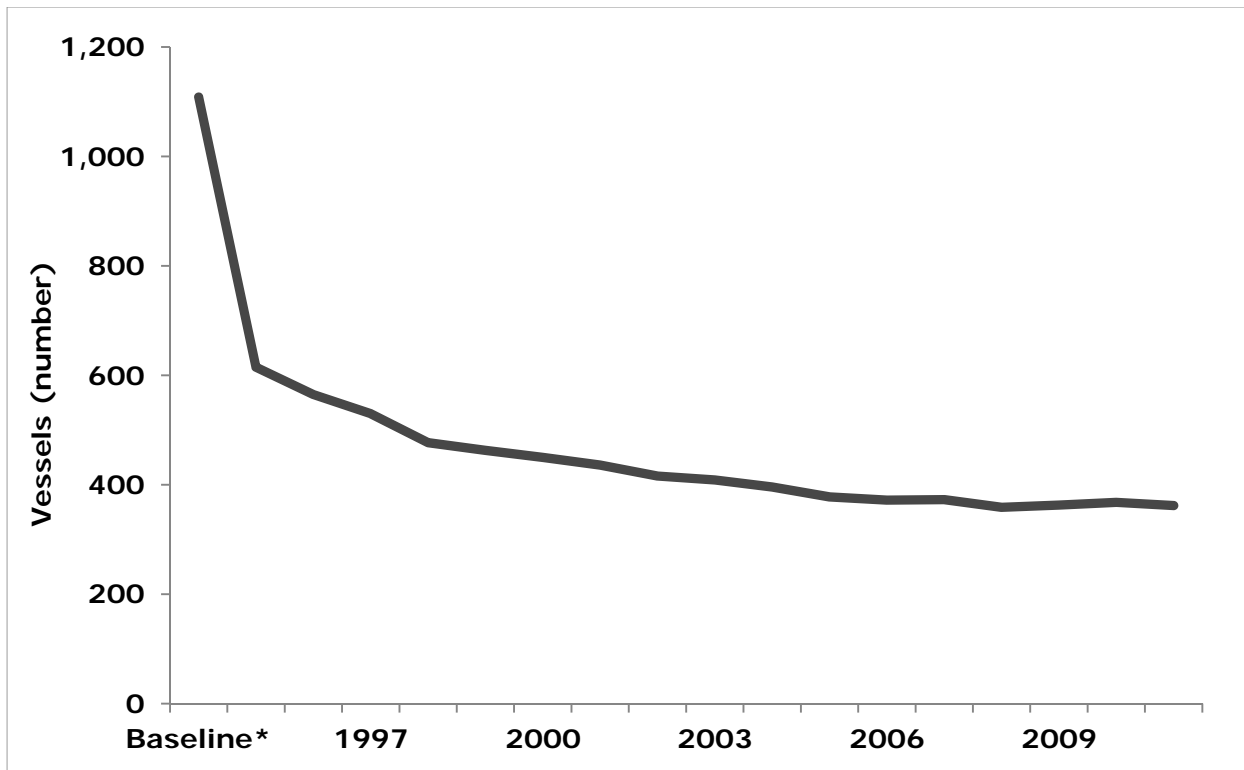


Figure 111. Active vessels fishing quota in the Alaska Sablefish IFQ Program

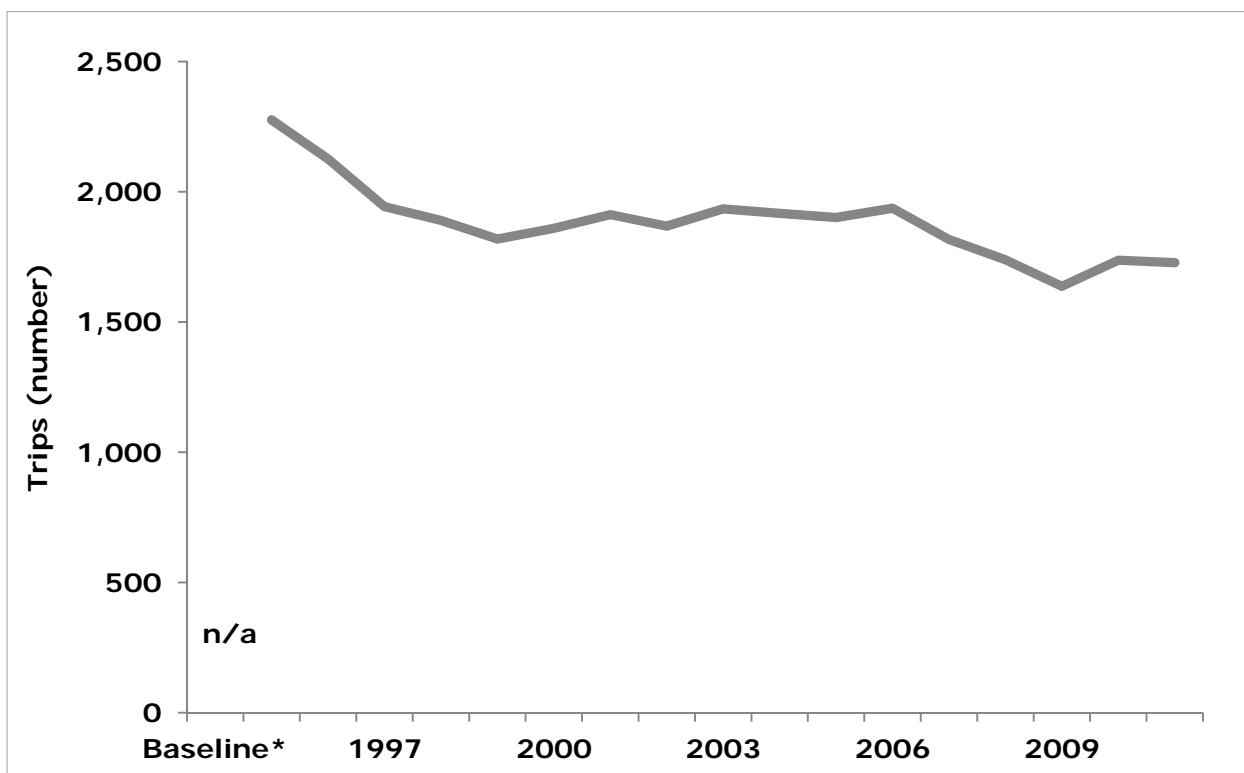


Figure 112. Number of trips harvesting sablefish in the Alaska Sablefish IFQ Program

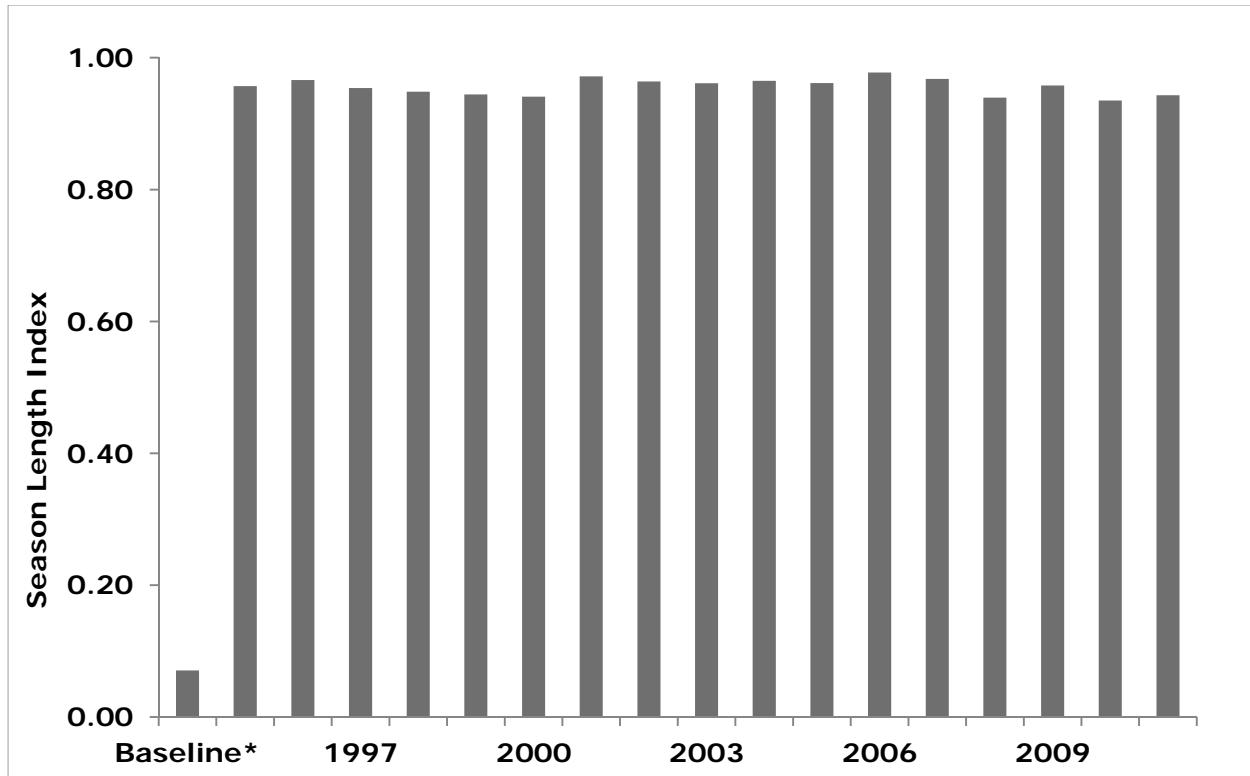


Figure 113. Season length index in the Alaska Sablefish IFQ Program

- iii. Revenue - All revenue and cost recovery data have been adjusted by the GDP deflator indexed for 2010.

Sablefish revenue initially increased by 26% in 1995 (\$116 million) compared to the Baseline Period (\$92 million; Figure 114). Over the next three years, Sablefish revenue declined to \$58 million in 1998 compared to \$116 million in 1995. There was a substantial increase (48%) in revenue for the period between 1998 (\$58 million) and 2003 (\$86 million). By 2010 (\$82 million), sablefish revenue decreased by 4% when compared to 2003 (\$86 million); however, in 2011, sablefish revenue increased by 43% to \$117 million. The average price per pound of sablefish was 148% greater in 2011 (\$4.86 per pound) than in the Baseline Period (\$1.96 per pound; Figure 115). Average prices varied annually by -2% to 20% over the course of the Sablefish IFQ Program, with exception of some large changes in 1995 (45%), 1998 (-34%), 1999 (20%), 2000 (20%) and 2011 (30%; Figure 115).

Sablefish revenue per vessel increased by 70% over the course of the IFQ Program (Figure 116). Revenue per vessel initially increased by 128% in 1995 (\$189,000) compared to the Baseline Period (\$83,000). Sablefish revenue per vessel trended downward after 1995, with the exception of large annual increases in 1999 (14%), 2000 (34%) and 2003 (27%), which were years with sizable revenue increases and either a declining or stable number of active vessels.

Over the duration of the Sablefish IFQ Program, there was a 32% increase in sablefish revenue per trip in 2011 compared to 1995 (trip estimates were not available for the Baseline Period; Figure 117). Sablefish revenue per trip decreased by 13% from \$51,000 in 1995 to \$45,000 in

1996. Sablefish revenue per trip decreased by 12% between 1995 and 2000 (\$45,000). There was a decrease (7%) in sablefish revenue per trip in 2005 (\$42,000) compared to 2000. In 2011, there was a large annual increase (43%) in revenue per trip (\$68,000) compared to 2010 (\$47,000). This was most likely due to a 8% increase in sablefish quota and a 10% increase in landings, with 1% fewer trips taken (Figure 117).

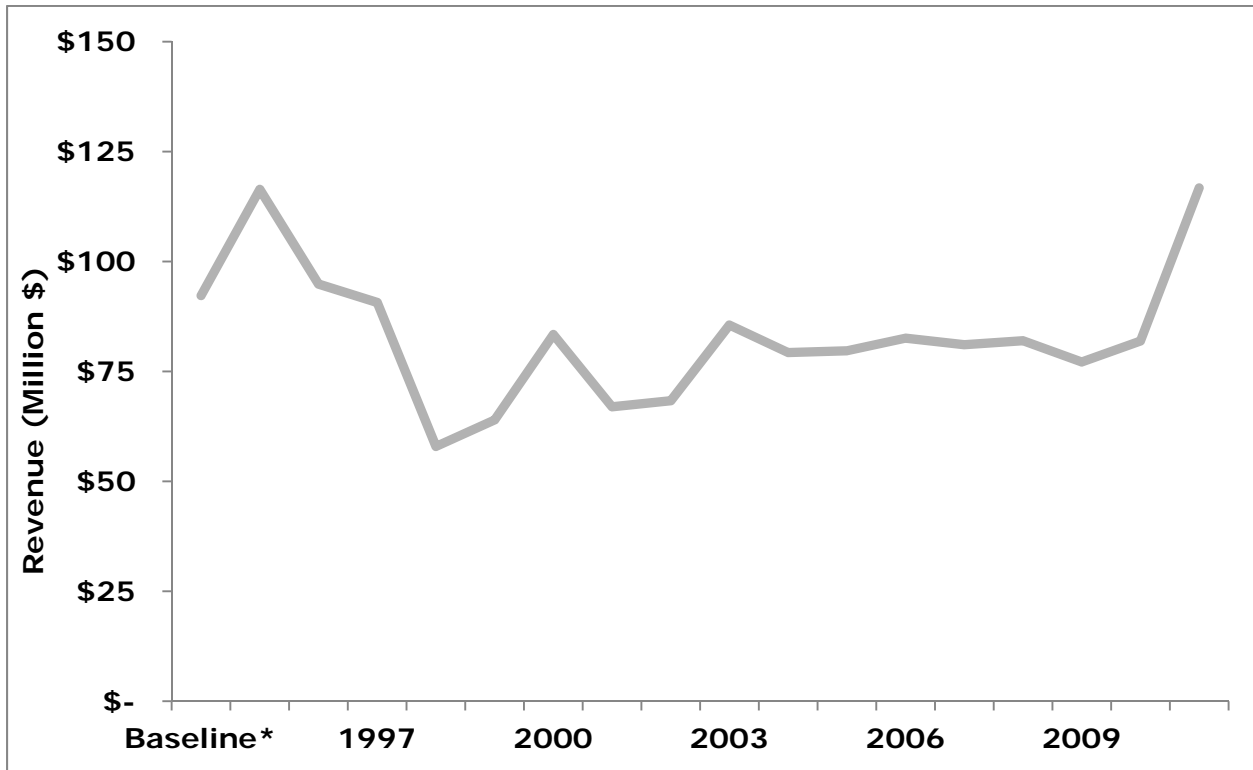


Figure 114. Total sablefish revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the Alaska Sablefish IFQ Program

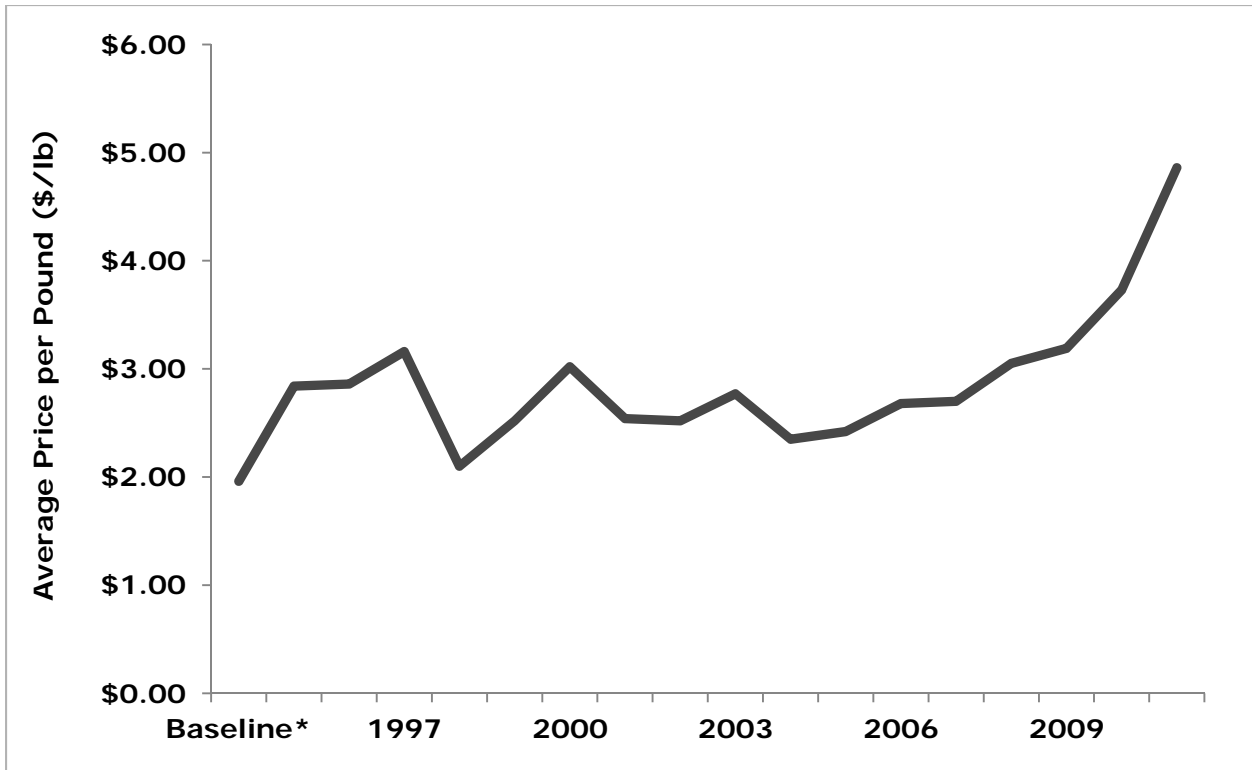


Figure 115. Average sablefish price per pound (inflation-adjusted 2010 dollars) in the Alaska Sablefish IFQ Program

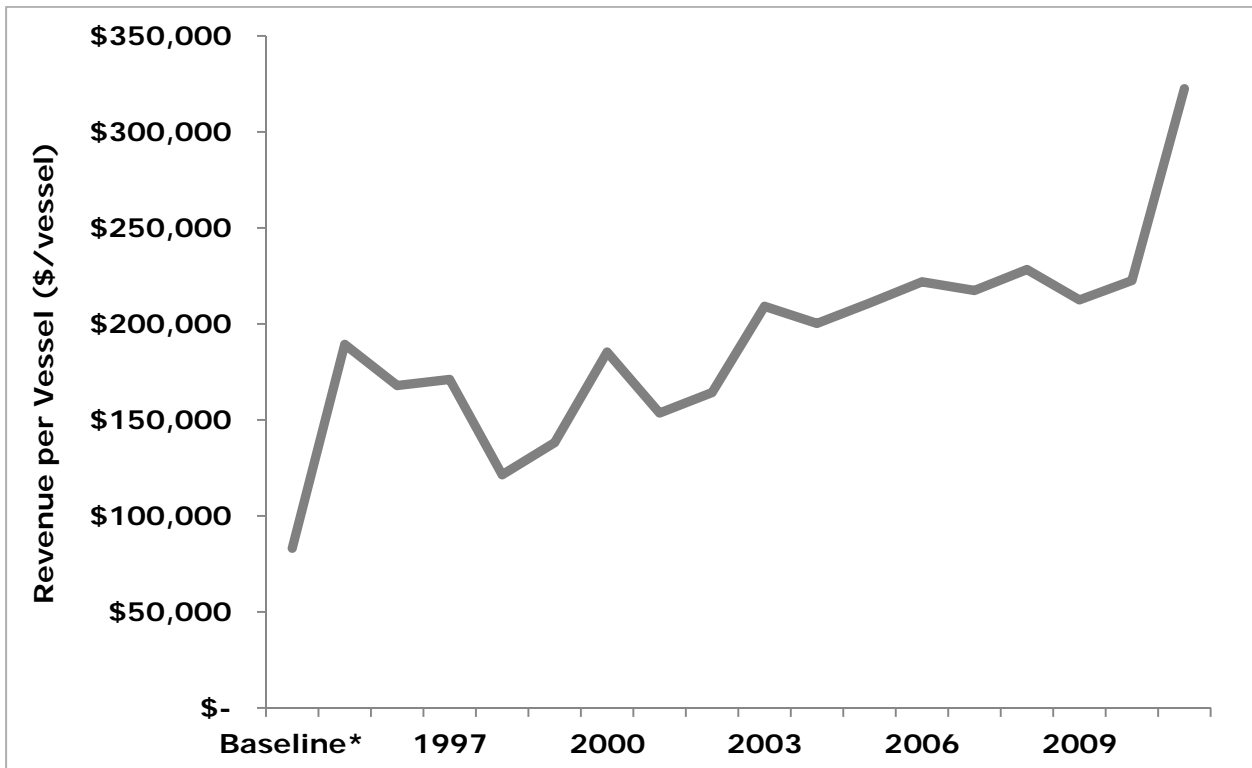


Figure 116. Revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the Alaska Sablefish IFQ Program

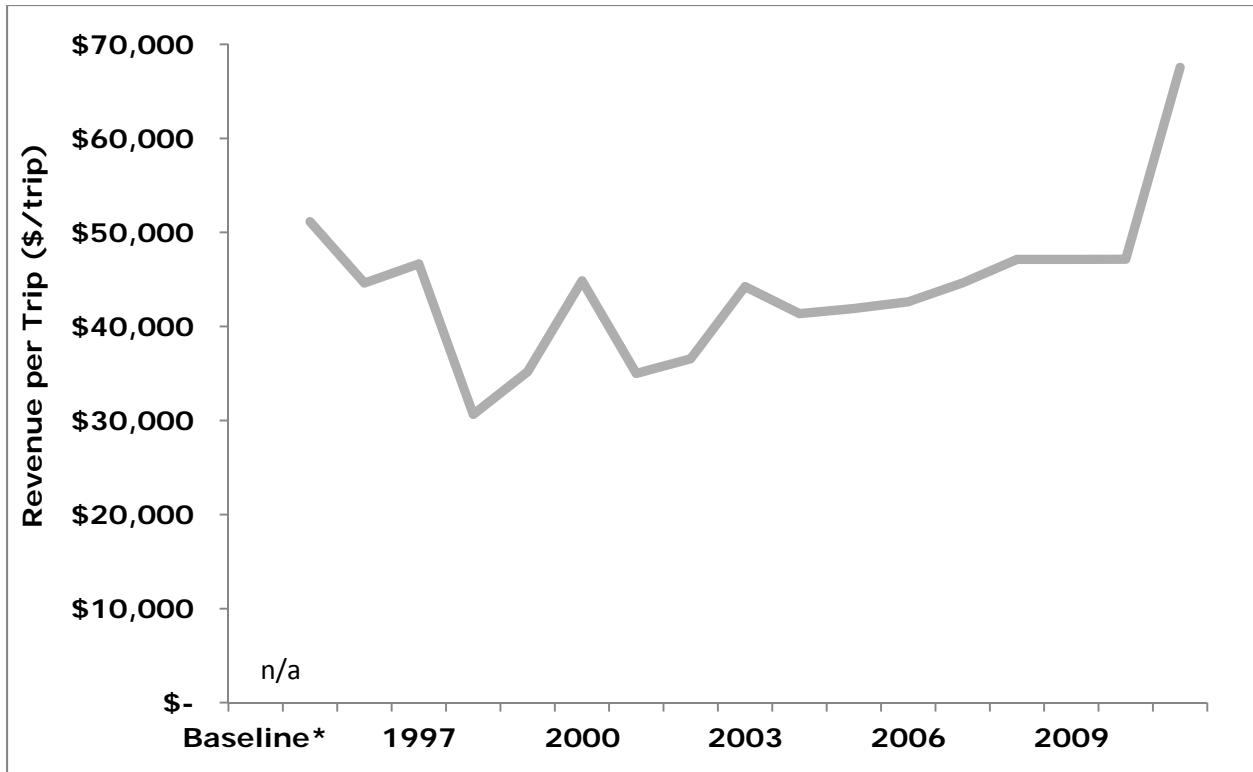


Figure 117. Revenue (inflation-adjusted 2010 dollars) per trip that vessels fish quota in the Alaska Sablefish IFQ Program



## **American Fisheries Act (AFA) Pollock Cooperatives**

### **a. Management History**

The Bering Sea and Aleutian Islands Fishery Management Plan (FMP) was first implemented in 1982 and manages all species of groundfish (including pollock, Pacific cod, flatfish, sablefish, rockfish). The original FMP has been amended over ninety times, where the management focus has shifted from limiting foreign fleets to managing domestic fleets. Amendments have set guidelines and procedures for establishing and apportioning the Total Allowable Catch, implemented gear and size restrictions, amended data reporting requirements and established regulations for at-sea observers.

The American Fisheries Act Pollock (AFA) Cooperatives Program was established by the U.S. Congress under the American Fisheries Act in 1998. Prior to the implementation of the American Fisheries Act Pollock Cooperatives Program in 1999, the fishery was often closed after only two months in order to ensure that the fleet (consisting of catcher/processors, motherships and catcher vessels) did not exceed harvest limits. While the pollock fishery was not overfished or experiencing overfishing prior to implementation of the catch share program, the short season often led to many negative consequences of the "race for fish" and there were frequent allocation disputes between the inshore and offshore fleets.

This catch share program, commonly referred to as AFA Pollock Cooperatives, manages Bering Sea and Aleutian Islands pollock. The AFA established participation requirements and authorized the formation of cooperatives. Other major components of the AFA were minimum U.S. ownership requirements, a permit/vessel buyout, a list of vessels eligible to participate in the Program, processor eligibility requirements, the establishment of three harvest sectors (and their respective allocations) and, allocations to the Western Alaska Community Development Quota Program. When the AFA Pollock Cooperatives Program was implemented, the buyback of the nine decommissioned vessels cost the government \$90 million. The inshore sector agreed to pay back \$70 million by paying \$0.06 per pound of harvested pollock. The cost of the other \$20 million was borne by taxpayers.

### **b. Program Objectives**

The objectives of the AFA Pollock Cooperatives Program were to settle allocation disputes between the inshore and offshore sectors and rationalize the fishery. The AFA Pollock Cooperatives Program manages two allocations of Bering Sea walleye pollock within the Bering Sea and Aleutian Islands. As described in more detail below, the Act defined three sectors – inshore, offshore and motherships – and listed those entities eligible for participation in each sector. There were 111 catcher vessels and eight processing plants eligible for participation in the inshore sector. The Act listed 20 catcher/processors and seven catcher vessels (allowed to deliver to the catcher/processors) eligible for participation in the offshore sector. The Act also specified three eligible motherships and 19 catcher vessels that could deliver to these motherships. A mothership does not fish, but rather processes pollock harvested by a fleet of catcher vessels that transfer their catch at sea to the mothership.

### **c. Key Events/Features**

The AFA Pollock Cooperatives Program was designed to grant eligibility to those meeting the statutory requirements within the American Fisheries Act: meeting minimum pollock landings criteria, U.S. vessel ownership requirements and minimum delivery thresholds for shoreside processors. Eligibility for initial allocations was based upon historic participation with different criteria for inshore, offshore and mothership sectors. The inshore sector (catcher vessels) had to meet landings thresholds for 1996, 1997 and 1998. The offshore sector (catcher/processors) was required to be directly listed in the American Fisheries Act or meet a minimum landings threshold. Motherships were required to be listed in the American Fisheries Act. Shoreside

processors must have met minimum delivery thresholds in 1996 and 1997 to be eligible to receive inshore sector deliveries.

Inshore catcher vessel cooperatives have formed and receive exclusive harvest privilege permits from NOAA Fisheries. Inshore cooperatives can only form between catcher vessels and eligible shoreside processors where the vessel delivered a majority of their catch in the previous year. Vessels in shoreside cooperatives are required to deliver 90 percent of their pollock catch to a member processor. Vessels choosing not to join a cooperative could operate in the highly constrained limited access fishery. The mothership and catcher/processor sectors have formed voluntary cooperatives to manage their allocations and do not receive an exclusive harvest privilege from NOAA Fisheries.

After 10 percent of the Total Allowable Catch is allocated to CDQ groups and an amount (about three percent) established for incidental catch of pollock outside the Program, the remaining quota is divided among the sectors. The inshore sector receives 50% of the remaining total allocation for catcher vessels who deliver their harvests to shore-based processors. The offshore sector receives 40% of the remaining total allocation and includes catcher/processor vessels and those catcher vessels that deliver to catcher/processors. The mothership sector receives 10% of the remaining allocation and includes floating processors. Quota shares and quota pounds (inshore, offshore and mothership sectors) can be sold or leased to other participants in the same sector. Quota shares transfer with the sale of a vessel.

The purpose of excessive quota share caps is to prevent individual shareholders (or entities) from controlling production (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. Excessive share caps have been established and no entity can harvest more than 17.5% or process more than 30% of the pollock directed fishery allocation.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. These fees do not cover the entire costs related to Limited Access Privilege Programs, but cannot exceed 3% of the ex-vessel value of fish harvested under the Limited Access Privilege Program. Currently cost recovery fees are not collected for the AFA Pollock Cooperatives Program, but the applicability of cost recovery fees is currently under review and development.

#### **d. Recent Trends**

The Baseline Period refers to the average of the three years prior to the implementation of the AFA Pollock Cooperatives Program (1996 – 1998). The performance metrics are calculated for all of the harvest sectors (inshore, offshore and mothership) combined.

##### **i. Catch and landings**

Coincident with the implementation of the AFA Pollock Cooperatives Program in 1999, the commercial quota was reduced by a 20% (from 1.1 million metric tons in the Baseline Period to 850,000 metric tons in 1999; Figure 118). However, the commercial quota increased by 16%, 24% and 6% in the next three years, respectively. The commercial quota remained stable between 2004 and 2007, fluctuating around 1.2 million metric tons. The quota was decreased each successive year from 2007 to 2009, overall falling by nearly one-half between 2006 - 2010 (from 1.3 million metric tons to 706,000 metric tons). Landings in the AFA Pollock Cooperatives

Program followed a similar trend: an initial 17% decrease in landings in 1999 compared to the Baseline Period, followed by 50% higher landings from 1998 – 2002, a period of stable landings from 2002 – 2006, and a 46% decrease in landings from 2006 – 2010 .

Utilization of the available quota was initially 96% in the Baseline Period. Since the implementation of the AFA Pollock Cooperatives Program, utilization of the available quota has been nearly 100% (Figure 119). Salmon bycatch has been a big concern in this fishery and the presence of a catch share program has allowed fishers to take the time to move around and avoid salmon. Without a catch share program, the salmon bycatch problem could be exacerbated. During one year of the Baseline Period, eastern Bering Sea pollock total catch exceeded the annual acceptable biological catch, but catch limits within the AFA Pollock Cooperatives Program have not been exceeded since implementation of the Program.

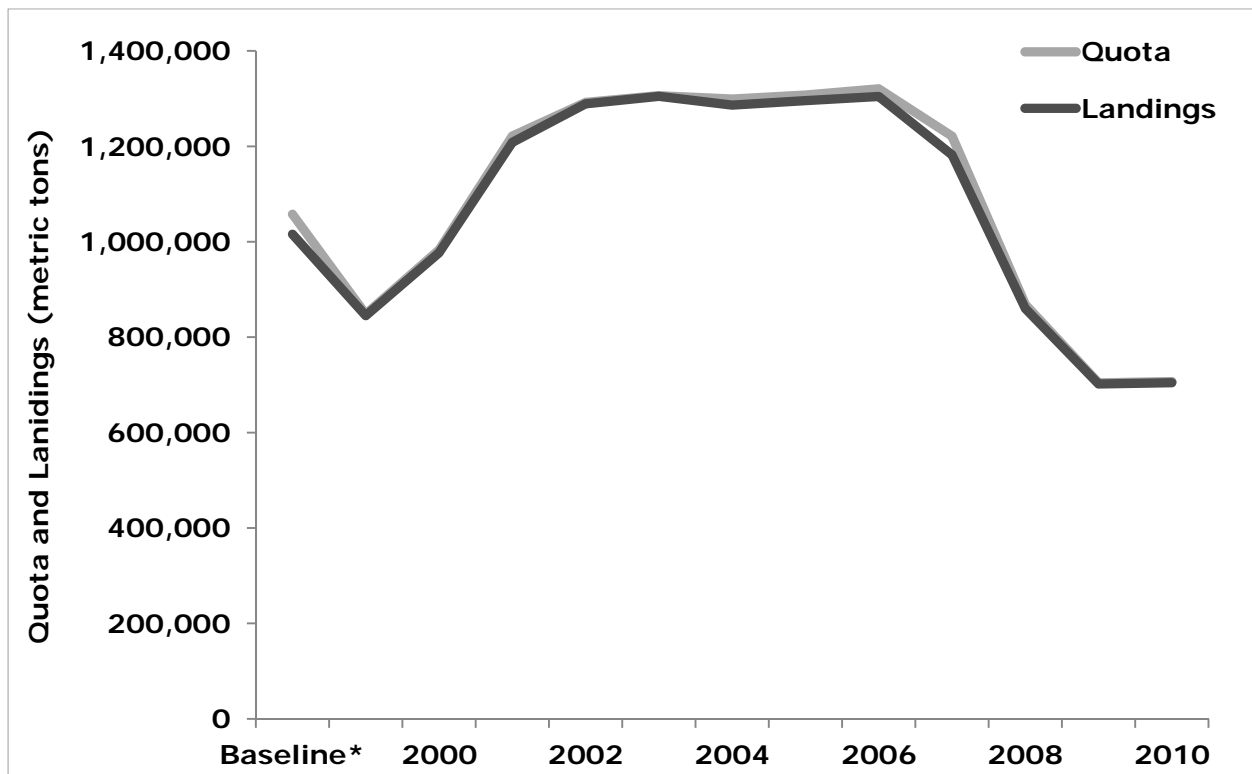


Figure 118. Quota and landings in the AFA Pollock Cooperatives Program

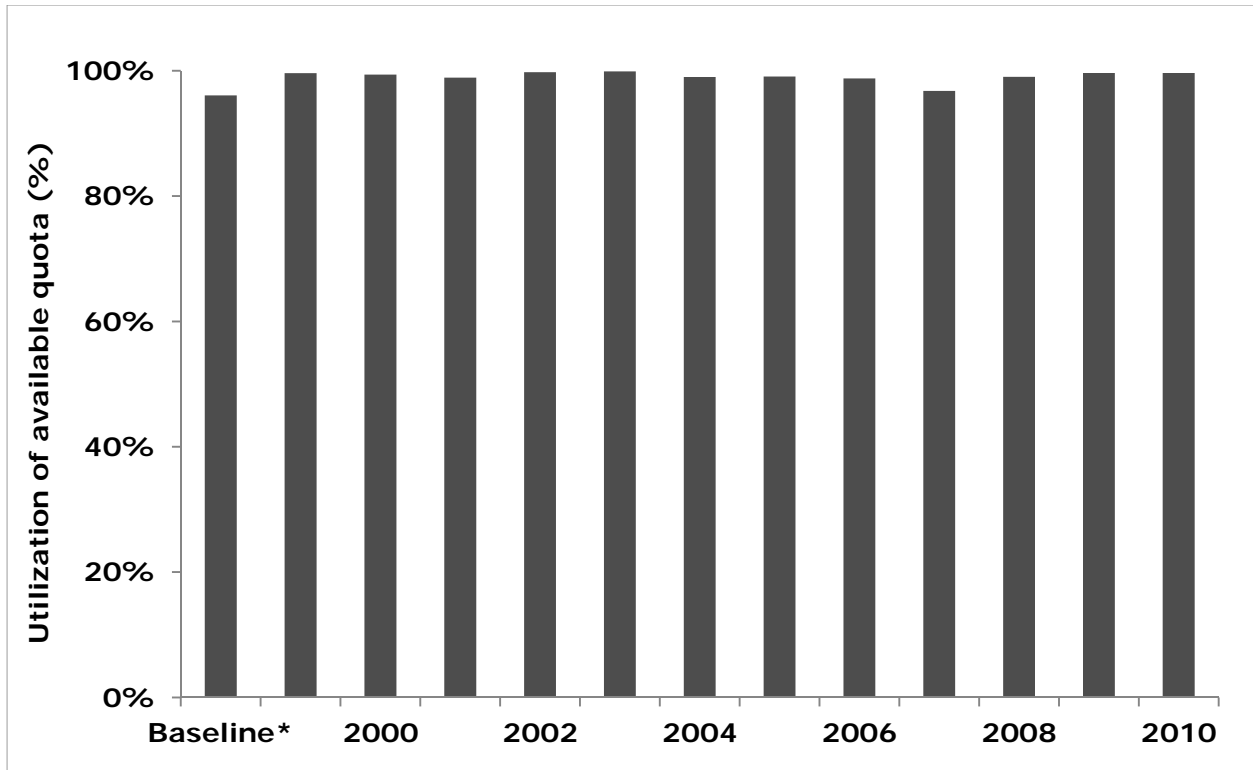


Figure 119. Utilization of available quota in the AFA Pollock Cooperatives Program

ii. Effort

The number of entities holding shares is available only for the time period in which permits were issued (2000 onwards). The AFA defines an entity as a group of affiliated individuals, corporations, or other business concerns that harvest or process pollock in the Bering Sea directed pollock fishery. The number of entities holding pollock share grew by 2% from 130 vessels in 2000 to 132 vessels 2005. The number of entities holding pollock share remained constant at 132 entities between 2006 – 2010 (Figure 120).

Prior to implementation of the AFA Pollock Cooperatives Program, there were 145 active vessels (Figure 121). In the first year of the Program, the number of active vessels declined by 12% to 128 vessels; however, nine of these vessels exited the fishery during the vessel buyback program (that occurred prior to implementation of the AFA Pollock Cooperatives Program). In 2001 (the third year of the Program), the number of active vessels further decreased (by 15%) to 109 active vessels. Since 2001, the number of active vessels participating in the AFA Pollock Cooperatives Program has declined by 20% to 102 vessels in 2010.

The season length index was calculated as the number of active days divided by the number of days in the regulatory season. This index is created by summarizing season utilization over the three sectors within the AFA Pollock Cooperatives Program: inshore (catcher vessels), offshore (catcher/processors) and motherships. Using this index provides an indication of the temporal utilization of the pollock resource and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple fleets to achieve an overall program season length. During the Baseline Period, the regulations allowed 103 days of fishing; however, the season length index was 0.36.

Upon implementation of the AFA Pollock Cooperatives Program, fishing was allowed for 174 days and the season length index was 0.61. In 2000, utilization of the regulatory fishing season improved to 0.83. The season length fluctuated between 0.74 – 0.83 for 2000 – 2008. In 2009, the season length index dropped to 0.67 and rebounded the next year to 0.80 (Figure 122). Due to the manner in which the Program is managed (and as a result how data are collected), the number of days at sea is not available.

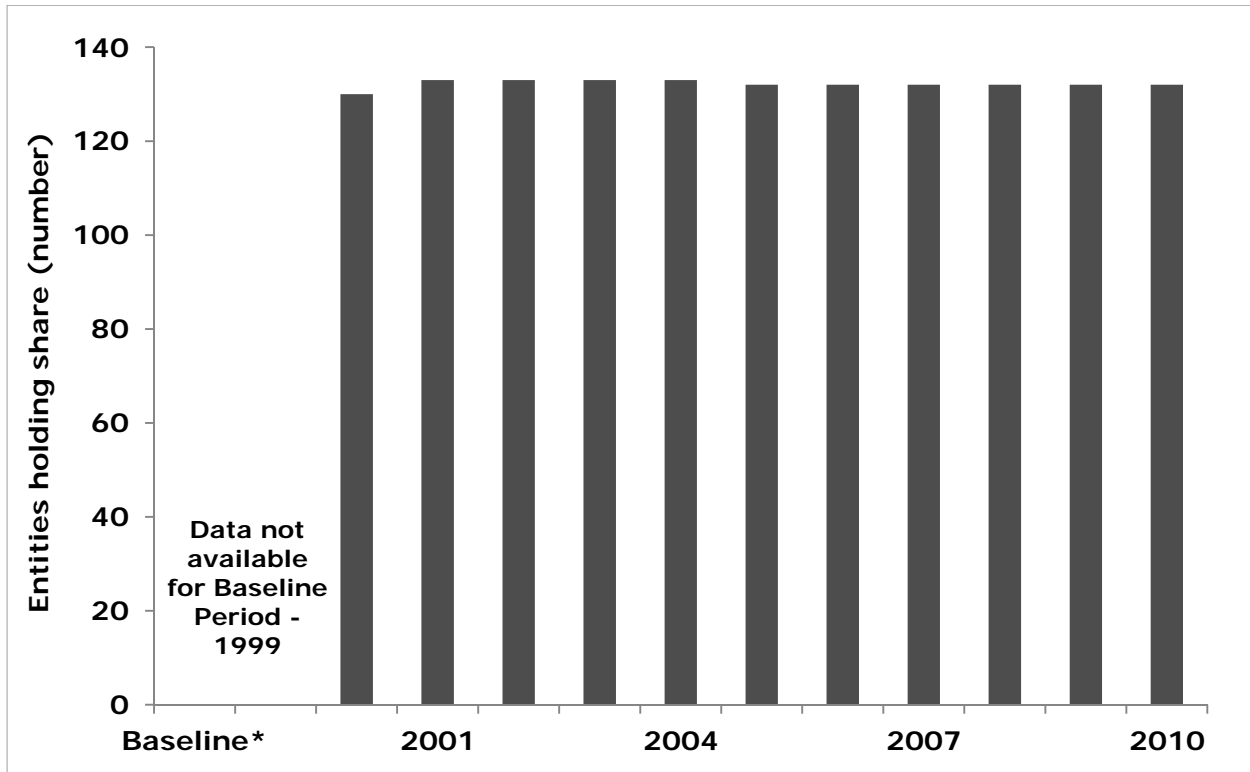


Figure 120. Number of entities holding share in the AFA Pollock Cooperatives Program

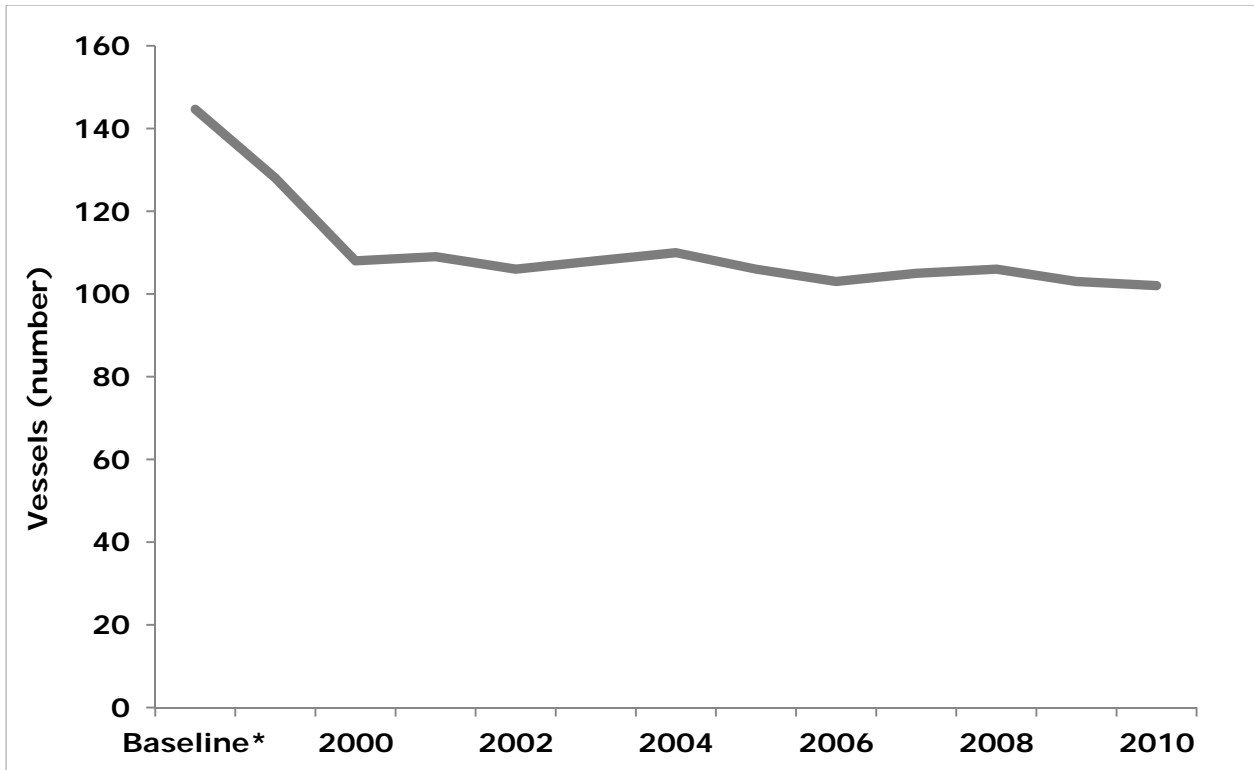


Figure 121. Active vessels fishing quota in the AFA Pollock Cooperatives Program

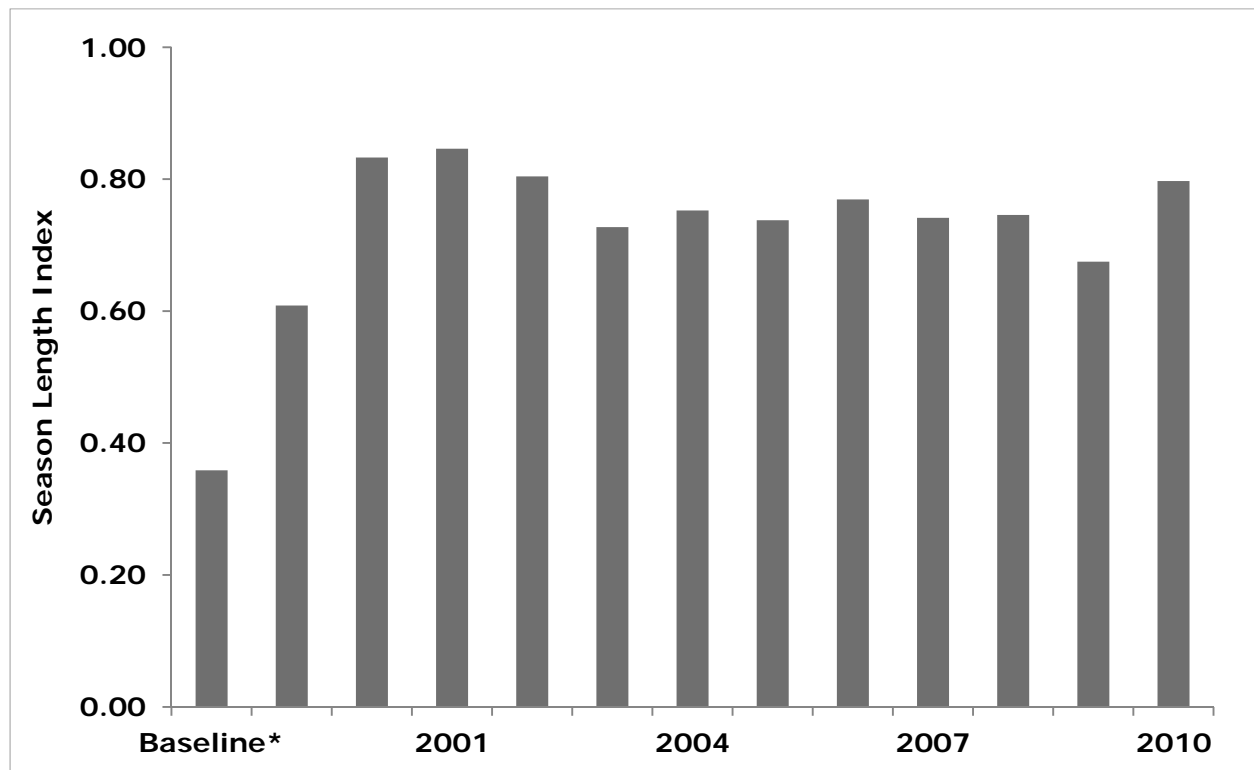


Figure 122. Season length index in the AFA Pollock Cooperatives Program

- iii. Revenue - All revenue and cost recovery data have been adjusted by the GDP deflator indexed for 2010.

Revenue and price data reflect ex-vessel value and prices. To estimate ex-vessel revenue for the offshore sector, the ex-vessel prices from shoreside processors were applied to at-sea sector retained catch. Revenue from directed pollock sales decreased by 4%, from \$238 million during the Baseline Period to \$229 million in 1999 (Figure 123). Revenue then increased by 53% from 1999 - 2002 to \$373 million. From 2003 – 2008, revenue ranged from \$325 million to \$385 million, with no apparent trend. Revenue declined in both 2009 and 2010, when compared to the previous year. Revenue from directed pollock sales decreased by 36%, from \$383 million in 2008 to \$244 million in 2010.

The price for pollock was, on average, 20% higher during the first eight years of the catch share program (\$280 per metric ton) compared to the Baseline Period (\$234; Figure 124). As quota fell between 2008 and 2010, the average price per metric ton of pollock increased sharply during this period (\$397 or 69% greater than the Baseline Period).

Revenue per active vessel increased in each of the first four years of the AFA Pollock Cooperatives Program (from \$1.8 million to \$3.5 million, a 114% increase; Figure 125). Revenue per active vessel decreased by 7% in 2003 relative to the previous year and averaged \$3.4 million in 2003 – 2008. However, revenue per active vessel declined in both 2009 and 2010, falling 43% in two years; this was due to the fact that Total Allowable Catch was very low. In 2010, revenue per active vessel was \$2.2 million.

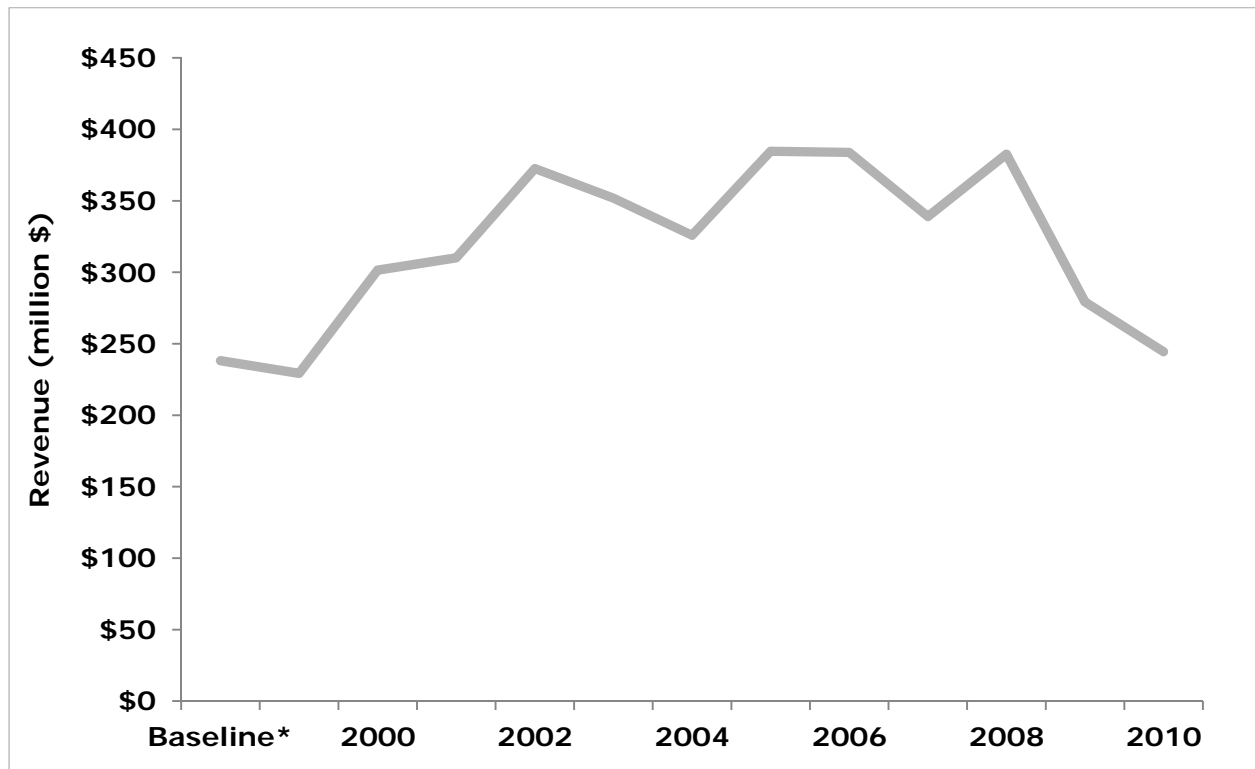


Figure 123. Total revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the AFA Pollock Cooperatives Program

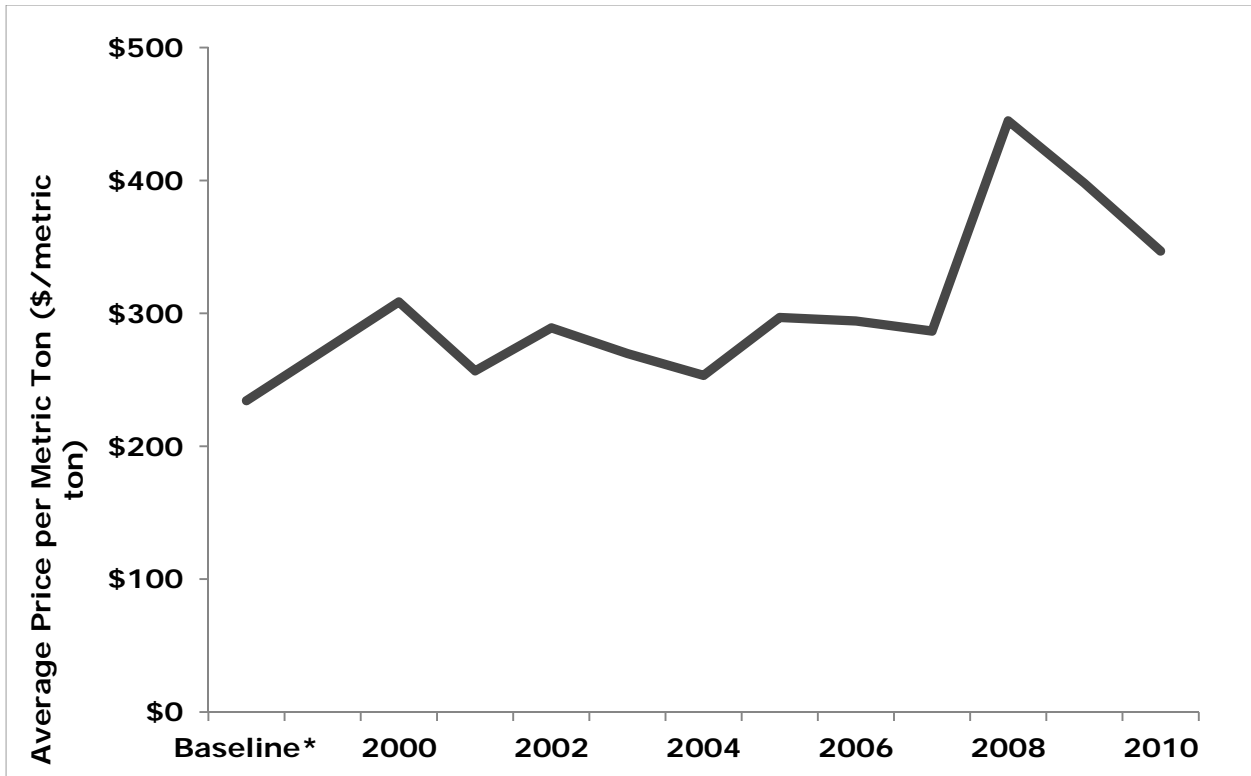


Figure 124. Average pollock price per metric ton (inflation-adjusted 2010 dollars) in the AFA Pollock Cooperatives Program

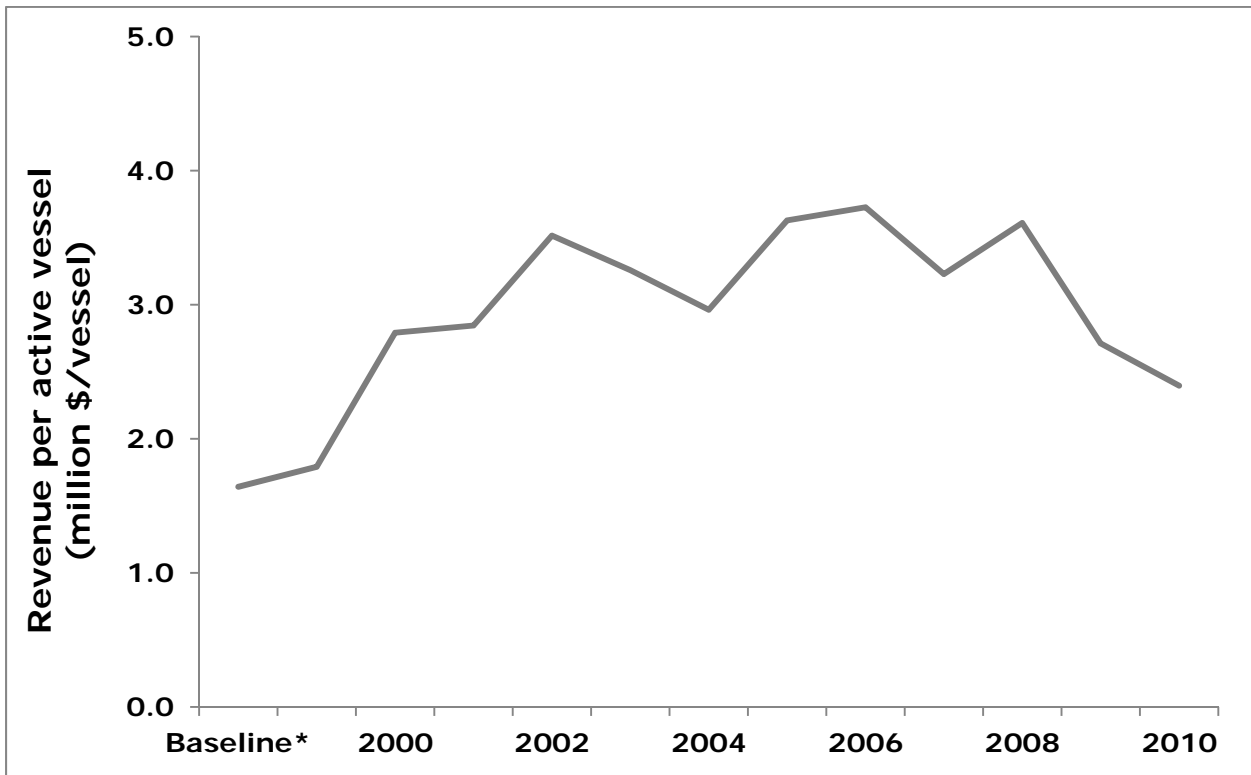


Figure 125. Revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the AFA Pollock Cooperatives Program



## **Bering Sea and Aleutian Islands Crab Rationalization Program**

### **a. Management History**

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

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

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

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

### **b. Program Objectives**

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

measures. The performance indicator information provided herein refers only to the IFQ component of the BSAI Crab Rationalization Program.

### **c. Key Events/Features**

King and Tanner crab are harvested in nine distinct fisheries that are defined by a combination of species and spatial areas. Uniquely, the Council was granted special Congressional authority to allocate processor quota in addition to harvesting quota. IFQ privileges are delineated as quota shares (that provide the holder a percentage of the IFQ allocation), which represents the annual harvestable pounds (derived from the shares) to harvesters, which must be matched with individual processor quota when making a delivery to a processor.

The initial allocation issued harvest shares to license limitation program (LLP) crab license holders and crew who were state permit holders (typically vessel captains) based on creditable historical landings. Processor shares were issued to processors with specific history in the crab fisheries. Harvest quota share and processor quota share are transferable, subject to limitations. Shares issued to LLP crab permit holders comprise 97% of all harvesting quota share; the remaining 3% were issued as captain/crew quota share. Both harvest and processor quota share are split into catcher vessel shares and catcher/processor shares. Annual individual processing quota is issued in the amounts matched to the amounts of catcher vessel LLP harvest quota for the nine fisheries.

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

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The Magnuson-Stevens Act also allows for additional collections to cover a loan program that provides assistance for quota share purchase by new entrants and small vessel owners. These fees can be a maximum of 3% of the ex-vessel value of the program species. During the Baseline Period, the cost recovery program was not applicable to the Crab Fishery. The cost recovery fee for the Crab Program varies each year because by regulation, the fee percentage is computed at the start of the fishing season, using prior year costs (Figure 126). This makes it possible to have years in which no fees are collected, as was the case in 2009/10. In 2010/11, \$6.7 million was collected for the cost recovery program, approximately 2.7% of IFQ Crab revenue.

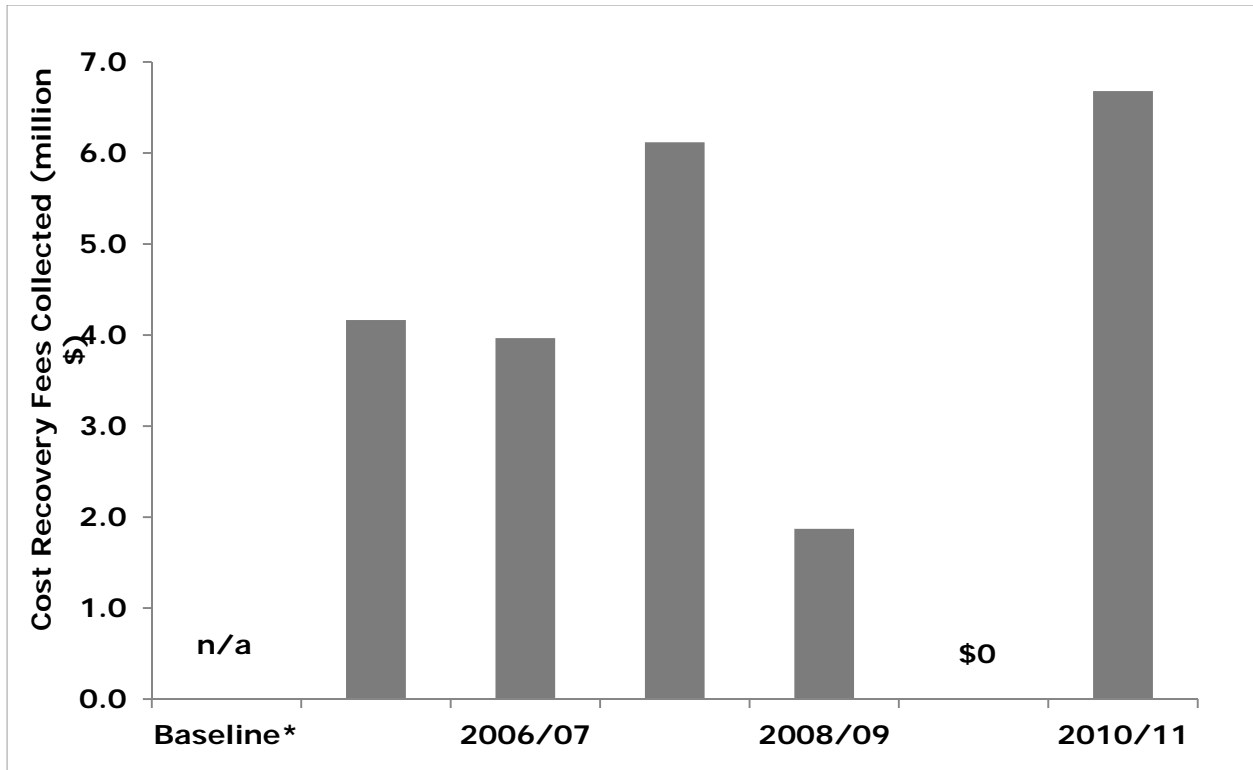


Figure 126. Cost recovery fees (inflation-adjusted 2010 dollars) collected for the IFQ Crab portion of the BSAI Crab Rationalization Program

The purpose of excessive quota share caps is to prevent quota holders from controlling production (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. The BSAI Crab Rationalization Program has share caps in place for all harvester and processor quota share holders. The excessive share cap varies from 1-20% of initial harvest quota share based on fishery or area, quota type, and entity type for owner quota share and from 2-20% of initial harvest quota share for crew quota share. Processors may not hold or use more than 30% of processor shares in each fishery.

The management year begins July 1 and ends June 30 of the following year. Annual data are for the fishing year (e.g., the 2006/07 fishing year). Crab quota refers to all of the IFQ fisheries combined.

**d. Recent Trends**

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

i. Catch and landings

Upon implementation of the BSAI Crab IFQ Program, the IFQ component of the Bering Sea and Aleutian Islands crab allowable catch was reduced by 42% to 57 million pounds in 2005/06, compared to the Baseline Period reflecting changes in allowable catch based upon a stock

assessment (Figure 127). The quota was subsequently raised to 85 million pounds in 2007/08. The crab quota was decreased again in 2009/10 based upon stock assessments. Coincident with the decreased quota, landings of IFQ crab decreased by 43% to 55 million pounds in the first year of the program compared to the Baseline Period. Landings increased by 54% to 81 million pounds in 2007/08, compared to the previous year (53 million pounds). Following the mandated decrease in quota in 2009/10, landings decreased by 17% to 64 million pounds, compared to the previous year. Prior to the catch share program, harvest limits were exceeded for Bristol Bay Red king crab, Bering Sea snow crab, and Aleutian Islands golden king crab fisheries. Since the implementation of the catch share program, harvest limits have not been exceeded and utilization of the available Crab IFQ quota has fluctuated from 95% to 99% (Figure 128).

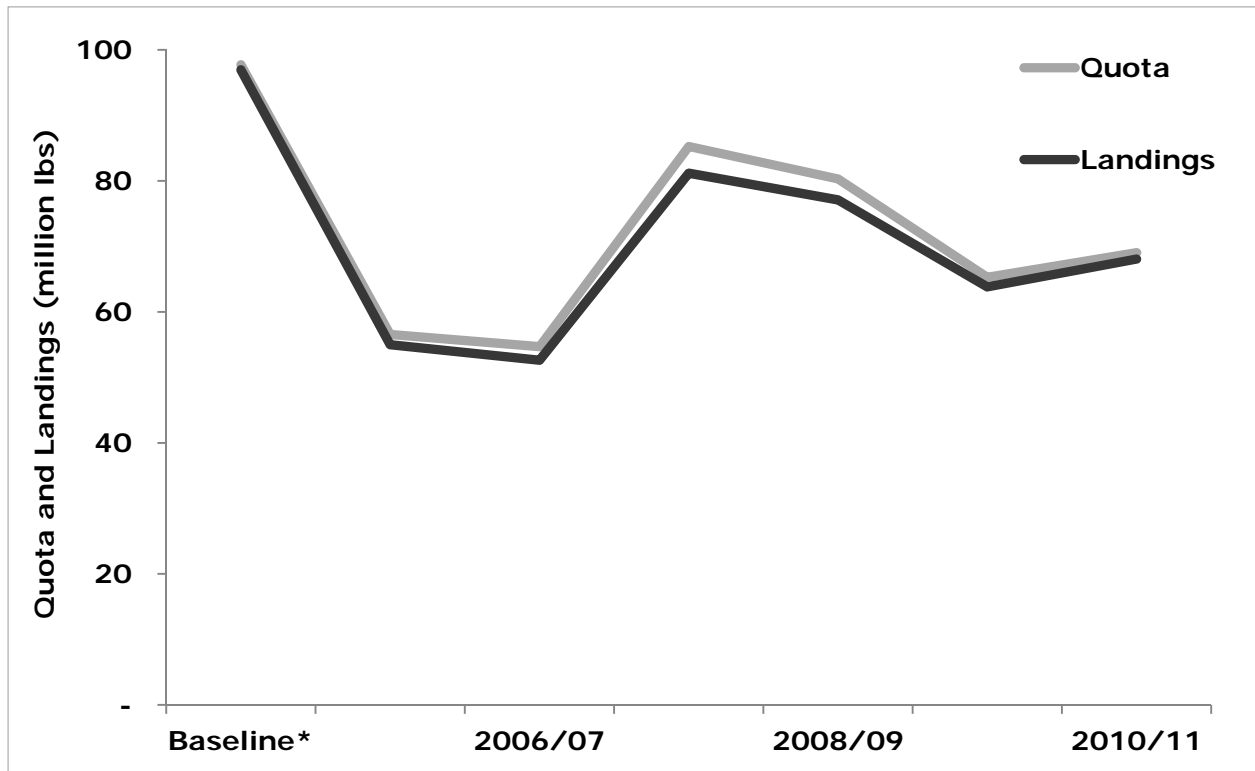


Figure 127. IFQ Crab quota and landings in the BSAI Crab Rationalization Program

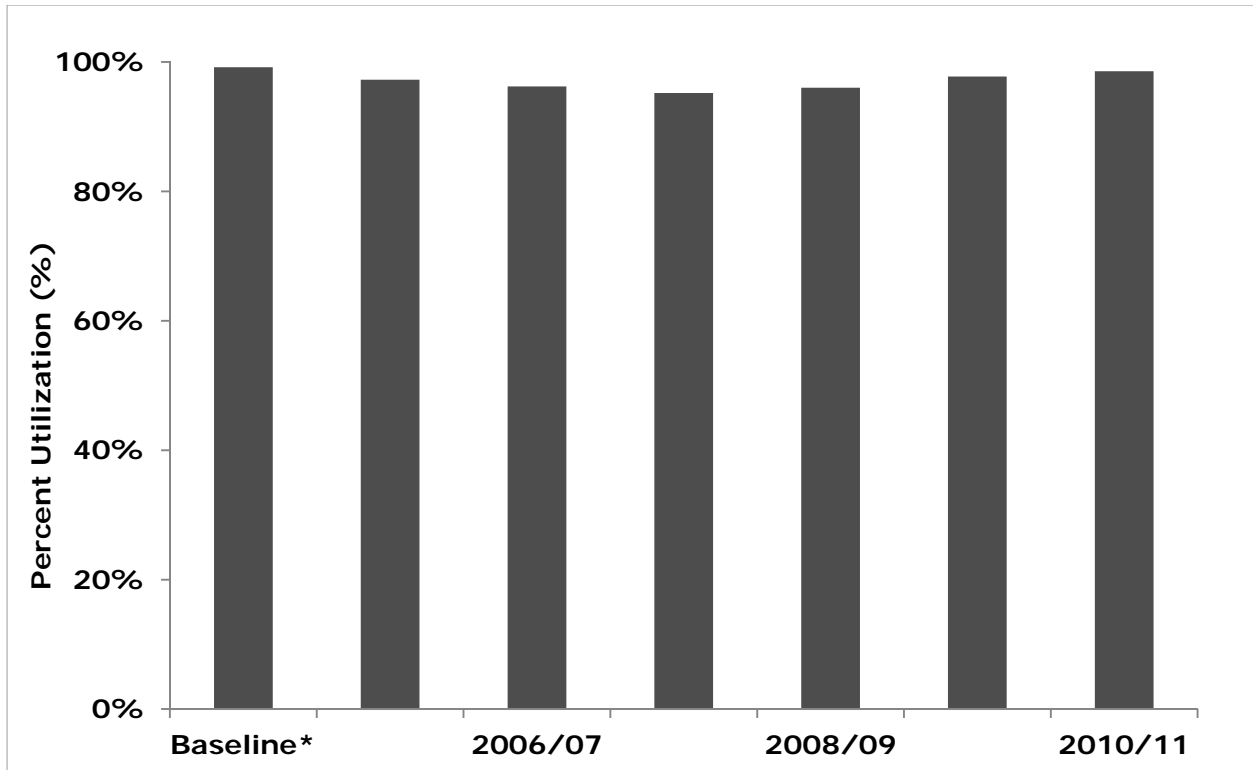


Figure 128. Utilization of available IFQ crab quota in the BSAI Crab Rationalization Program

ii. Effort

During the first year of the catch share program, 491 entities were eligible to hold quota share to fish in a crab fishery (Figure 129). In the first three years of the catch share program, on average there was 1.4% annual decrease in the number of entities holding quota share (from 491 entities to 470 entities). The number of entities holding share increased to 478 entities in 2008/09, 481 entities in 2009/10 and increased an additional 4% (to 489 entities) in 2010/11.

The number of active vessels decreased by 61% (101 vessels in 2005/06) upon implementation of the IFQ Program compared to the Baseline Period (262 vessels; Figure 130). It is important to note that in preparation for the implementation of the Crab Program, the capacity reduction program implemented in 2004 removed approximately 24 vessels from the fishery. The number of vessels active in the crab program continued to decrease to 78 vessels in 2010/11 compared to 88 vessels in 2008/09. Trip information is not available for the Baseline Period. Initially, crab IFQ Program fishermen took 28% fewer trips in 2006/07 (426 trips) compared to 2005/06 (594 trips; Figure 131). The number of trips taken in these fisheries increased 50% in the following year (2007/08) compared to the previous period and then trended downward, declining 14% to 552 trips in 2010/11.

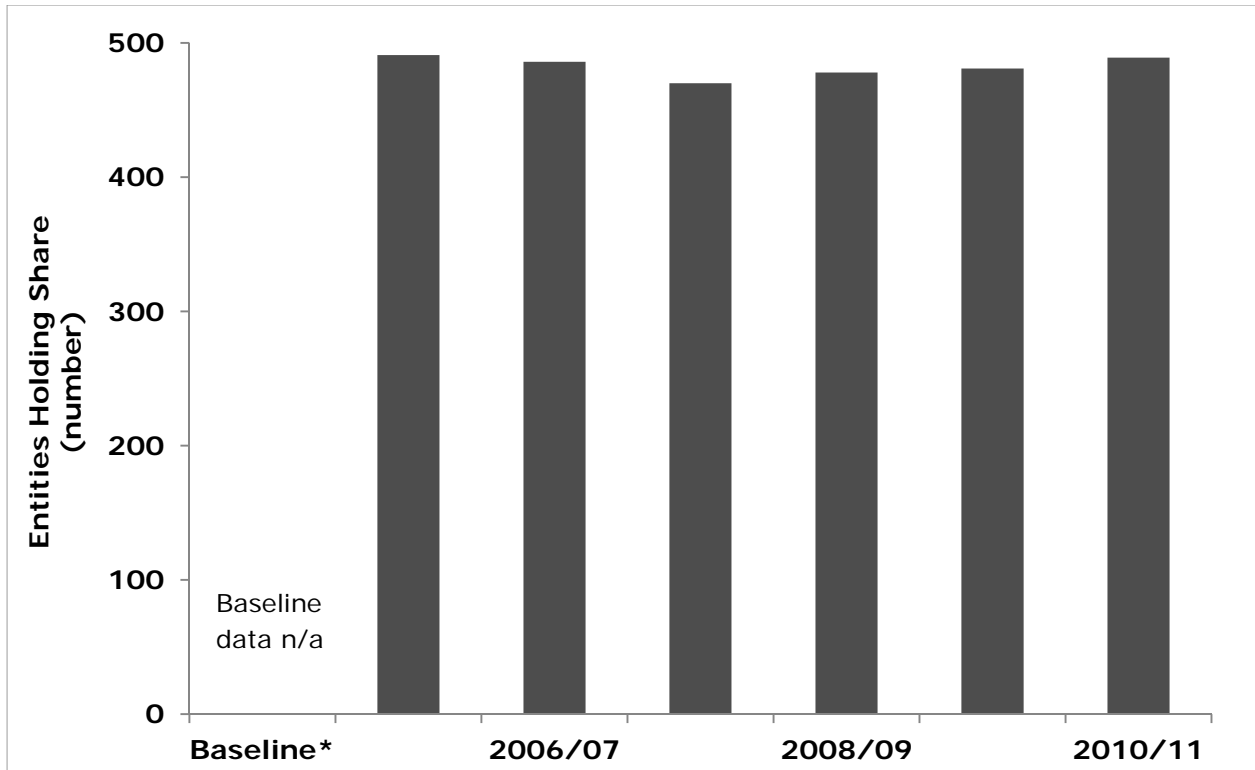


Figure 129. Number of entities holding IFQ crab share in the BSAI Crab Rationalization Program

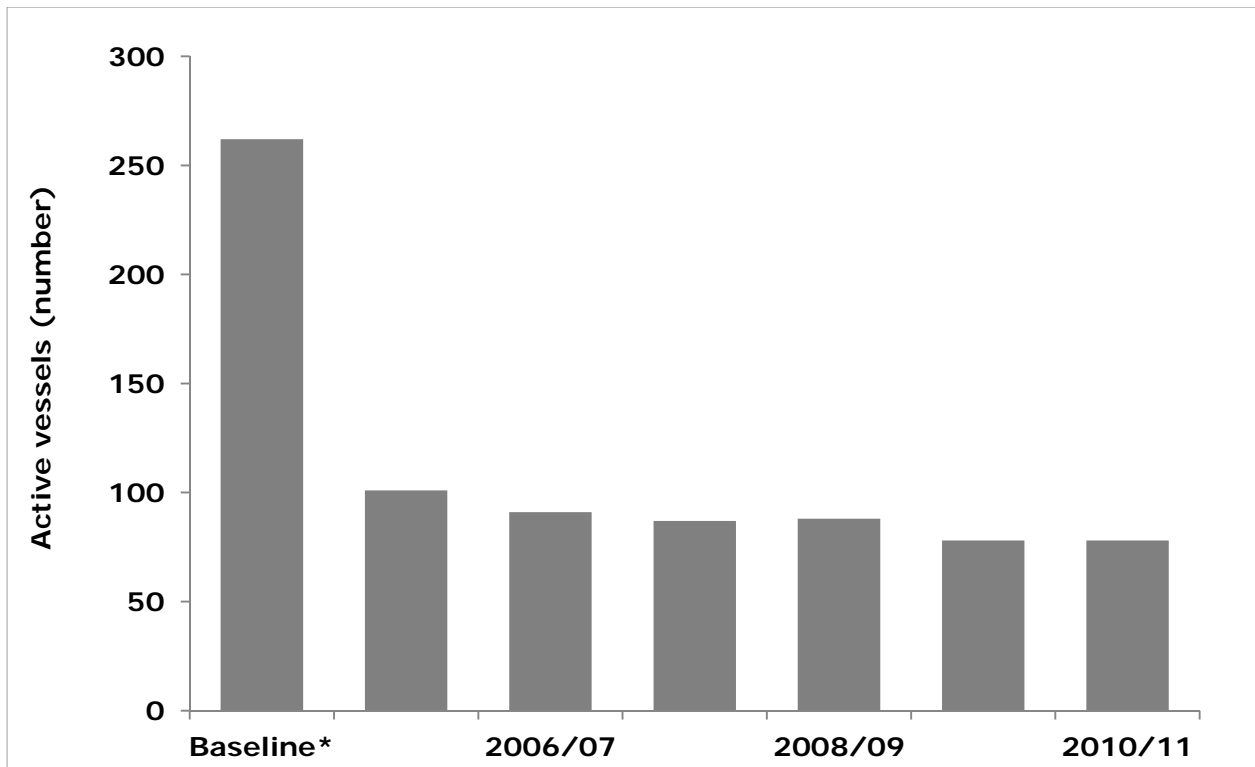


Figure 130. Active vessels fishing IFQ Crab quota in the BSAI Crab Rationalization Program

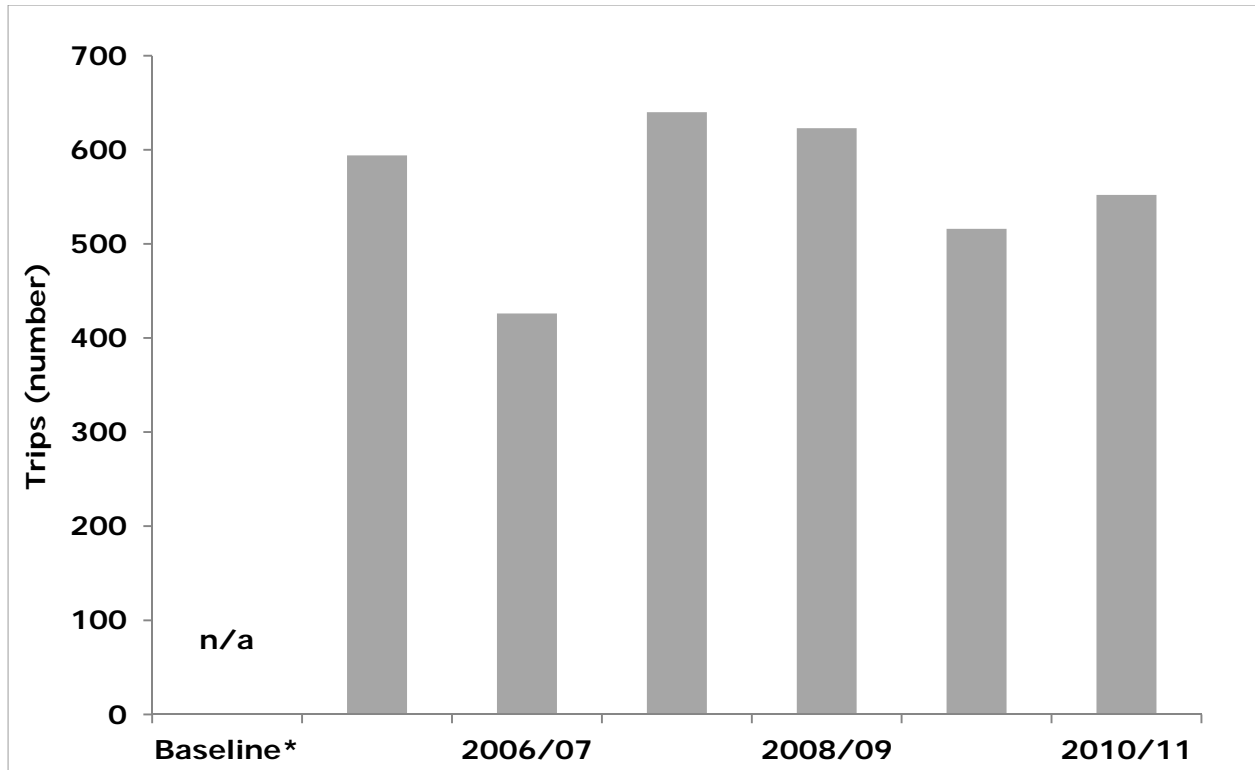


Figure 131. Number of trips harvesting IFQ Crab in the BSAI Crab Rationalization Program

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

A season length index was constructed to account for the differences in season length, the fleet's utilization of these seasons and to construct an indicator that accounts for change over time in the active fishing season length across multiple fisheries. The season length index represents the proportion of days when fishing actually occurred compared to the maximum number of days when fishing was allowed. Using this index provides an indication of the temporal utilization of the crab resource and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple crab species to achieve an overall program season length. During the Baseline Period, some areas were open to fishing for crab species for as little as 38 days and the season length index is 0.12. Upon implementation of the IFQ Program, the crab fisheries were open for 192 days, on average. With the exception of 2006/07 (0.6), the season length index was 0.74 for the next three fishing seasons. Despite the fact that the regulatory season length was around 200 days in 2009/10 and 2010/11, the season length index dropped to 0.58 (2009/10) and 0.53 (2010/11; Figure 132). Due to the manner in which the Program is managed (and as a result how data are collected), the number of days at sea fishing for crab is not available.

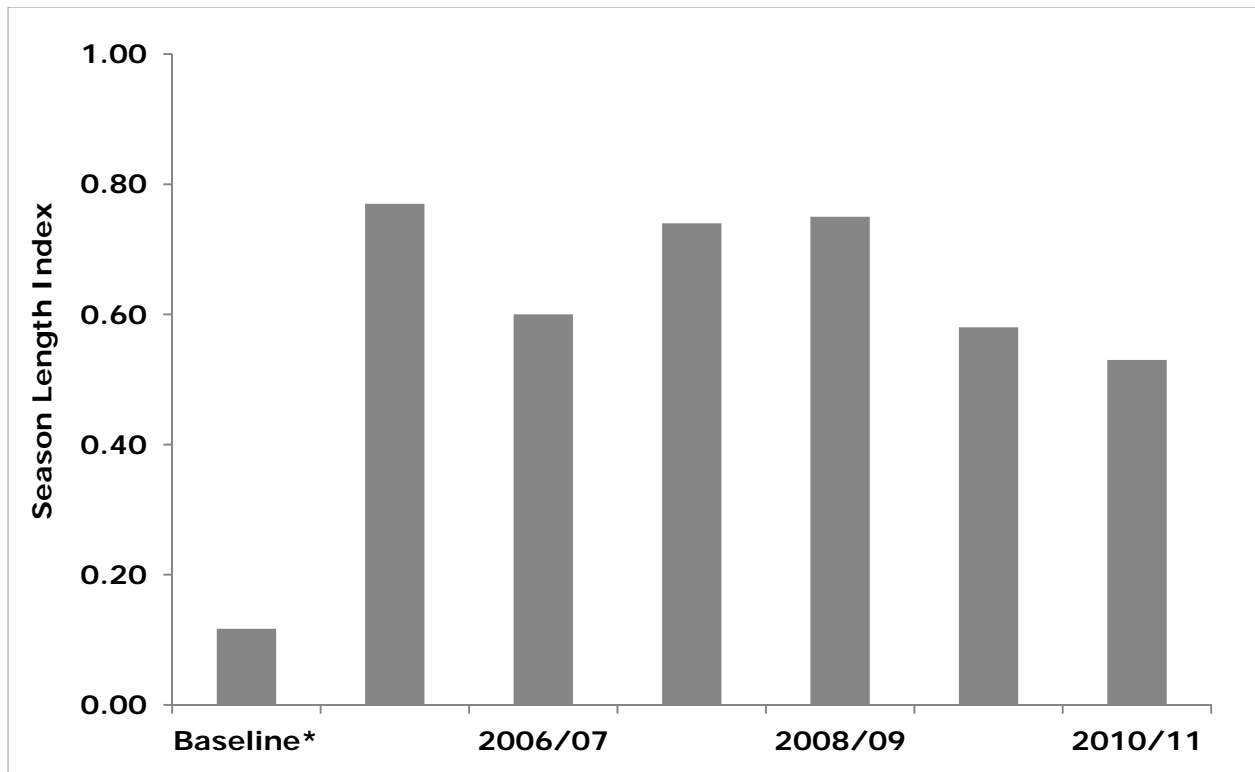


Figure 132. IFQ crab season length index in the BSAI Crab Rationalization Program

Based on stock assessments, several of the Bering Sea and Aleutian Islands crab fisheries have been closed to directed fishing for one or more years following implementation of the Catch Share Program. As of the 2010/11 season, the Pribilof Island red and blue king crab and Western Aleutian Islands red king crab fisheries have been closed to fishing for the duration of the Catch Share Program and were most recently open in 2004/05. The St. Matthew blue king crab fishery was closed for four seasons of the BSAI Crab Rationalization Program. The Western and Eastern Bering Sea Tanner crab fisheries have been closed to fishing since the beginning of the 2009/10 fishing season. In addition, the Bering Sea Tanner crab fishery was closed for all three seasons of the Baseline Period (Table 8). As noted earlier, fishery closures are not a consequence of the catch share program, but rather reflect management decisions based upon biological trends and fluctuations that would have occurred without the presence of a catch share program.



**Table 8. Season length (days) for the managed fisheries within the Crab Rationalization Program**

<b>Year</b>	<b>Bristol Bay Red King Crab</b>	<b>Bering Sea Snow Crab</b>	<b>Eastern Aleutian Islands Golden King Crab</b>	<b>Pribilof Island red and blue king crab</b>	<b>St. Matthew blue king crab</b>	<b>Western Aleutian Islands golden king crab</b>	<b>Western Aleutian Islands red king crab</b>	<b>Bering Sea Tanner Crab*</b>	<b>Western Bering Sea Tanner Crab*</b>	<b>Eastern Bering Sea Tanner Crab*</b>
Baseline Period	5	33	37	14	12	245	273	Closed	-	-
2005/ 06	93	229	274	Closed	Closed	274	Closed	168	-	-
2006/ 07	93	229	274	Closed	Closed	274	Closed	-	168	168
2007/ 08	93	230	275	Closed	Closed	275	Closed	-	169	169
2008/ 09	93	229	274	Closed	Closed	274	Closed	-	168	168
2009/ 10	93	229	274	Closed	110	274	Closed	-	Closed	168
2010/ 11	93	229	274	Closed	110	274	Closed	-	Closed	Closed

\*The Bering Sea Tanner crab fishery was split into the Western and Eastern Bering Sea Tanner crab fisheries in the 2006/2007 season.

- iii. Revenue - All revenue and cost recovery data have been adjusted by the GDP deflator indexed for 2010.

The IFQ Program crab quota was reduced in the first year of the program and, accordingly, IFQ Program crab revenue decreased by 26% in 2005/06 (\$137 million) compared to the Baseline Period (\$186 million; Figure 133). When the quota was increased in 2007/08, IFQ Program crab revenue increased 51% relative to the first year of the program. Similarly, IFQ Program crab revenue decreased by 32% to \$141 million in 2009/10 from 2007/08 revenue as the quota declined. Despite these fluctuations, in 2010/11, IFQ crab revenue was 76% greater (\$249 million) compared to the previous year (\$142 million).

Fishermen in the IFQ Program often land crab in community quota allocation programs on the same trips in which IFQ Program crab are caught and landed. These other landings contribute to overall revenue for fishermen. It is not possible to calculate non-IFQ Program crab revenue for the Baseline Period. Non-IFQ crab revenue initially decreased by 39% in 2006/07 to \$9 million from \$15 million in 2005/06. Between 2006/07 and 2009/10, non-IFQ crab revenue decreased by 15% from \$9 million in 2006/07 to \$8 million in 2009/10. By 2010/11, non-IFQ crab revenue increased by 48% from the previous year to \$12 million. The proportion of non-IFQ Program crab revenue to IFQ Program crab revenue is not very substantial, 5-10% of total revenue (Figure 133). Non-IFQ Program crab revenue is almost exclusively from the use of CDQ. CDQ is a share allocation that fluctuates in parallel with IFQ Program crab. Part of the change over time is simply a function of whether CDQ crab pounds were used on the same trips as IFQ Program crab pounds, rather than vessels' taking exclusive CDQ crab trips, which are not accounted for in this report.

As noted earlier, the average price is calculated for all species of crab. The average price per pound of all landed IFQ Program crab species initially increased by 30% in the first year of the IFQ Program compared to the Baseline Period (Figure 134). For the next three years, the average price per pound of IFQ Program crab fluctuated from \$2.44 to \$2.55, increasing to \$3.66 in 2010/11.

IFQ Program crab revenue per vessel increased by nearly 100% in 2005/06 compared to the Baseline Period due to the reduced number of vessels and in spite of the reduced quota (Figure 135). IFQ Program crab revenue per vessel continued to increase by 67% to \$2.4 million in 2007/08 compared to 2005/06. However, revenue per vessel fell the following two years, and in 2009/10 IFQ Program crab revenue per vessel decreased by 24% to \$1.8 million from \$2.4 million in 2007/08. IFQ crab revenue per vessel increased by 76% to \$3.2 million in 2010/11 compared to the previous year. Non-IFQ Program crab revenue per vessel initially decreased by 39% in 2006/07 (\$9.2 million) compared to 2005/06 (\$15 million) and then increased to \$10 million in 2007/08. The next two years there was a decline of 24% in non-IFQ crab revenue per vessel to \$7.8 million in 2009/10. In the following year, non-IFQ crab revenue per vessel increased by 48% to \$11.6 million (Figure 135).

IFQ Program crab revenue per trip increased by 31% to \$302,000 in 2006/07 compared to \$231,000 in 2005/06 (Figure 136). Revenue per trip increased by 7% in the following year (2007/08) only to decline in the two following years to \$274,000. During this time period, non-IFQ Program crab revenue per trip initially decreased by 15% from \$26,000 in 2005/06 to \$22,000 in 2006/07. Non-IFQ crab revenue per trip continued to decline for the next three years to \$15,000 in 2009/10 and subsequently increased by 38% to \$21,000 in 2010/11.

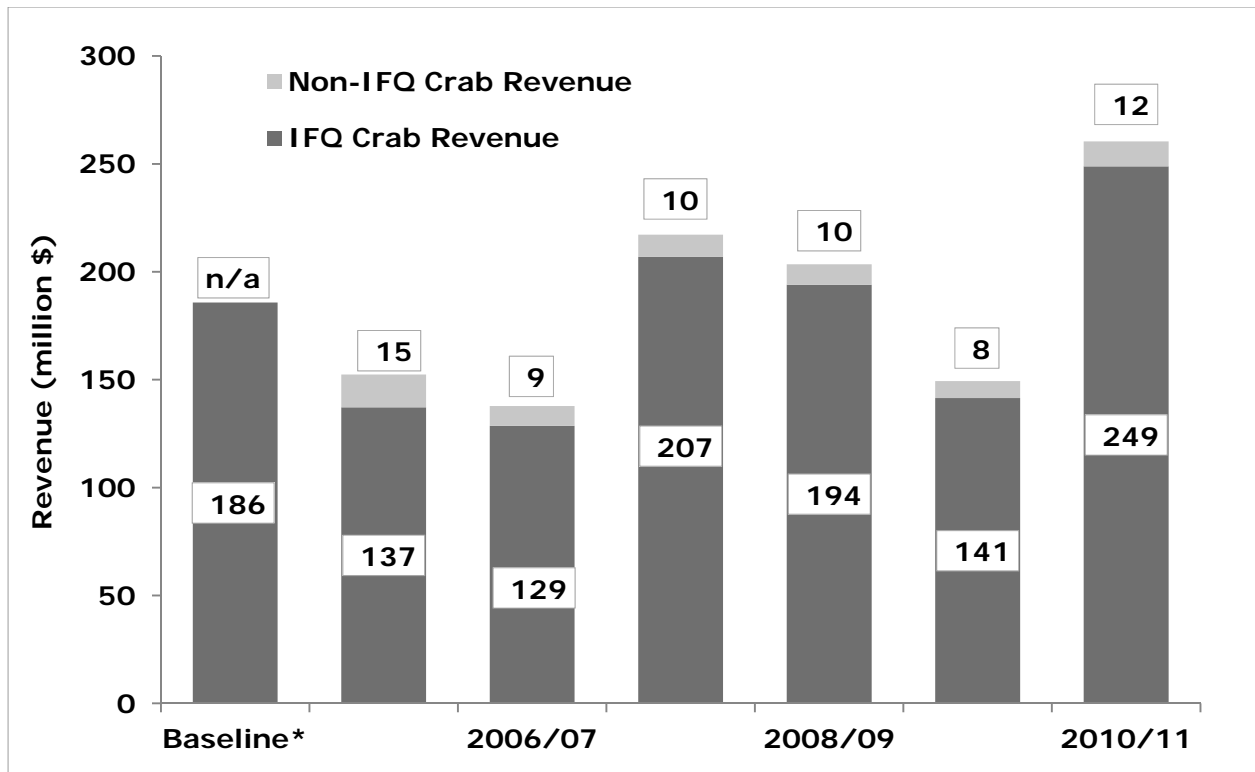


Figure 133. Total IFQ-crab and non-IFQ-crab revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the BSAI Crab Rationalization Program

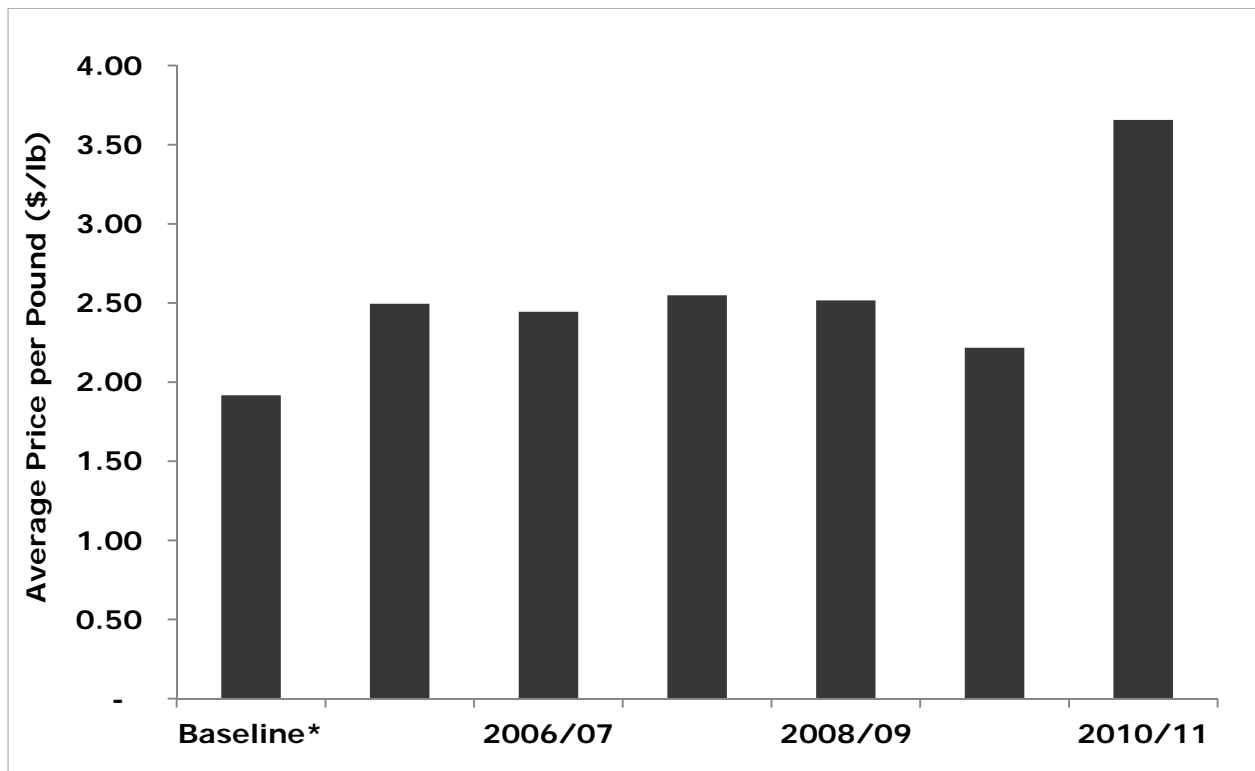


Figure 134. Average combined IFQ crab price per pound (inflation-adjusted 2010 dollars) in the BSAI Crab Rationalization Program

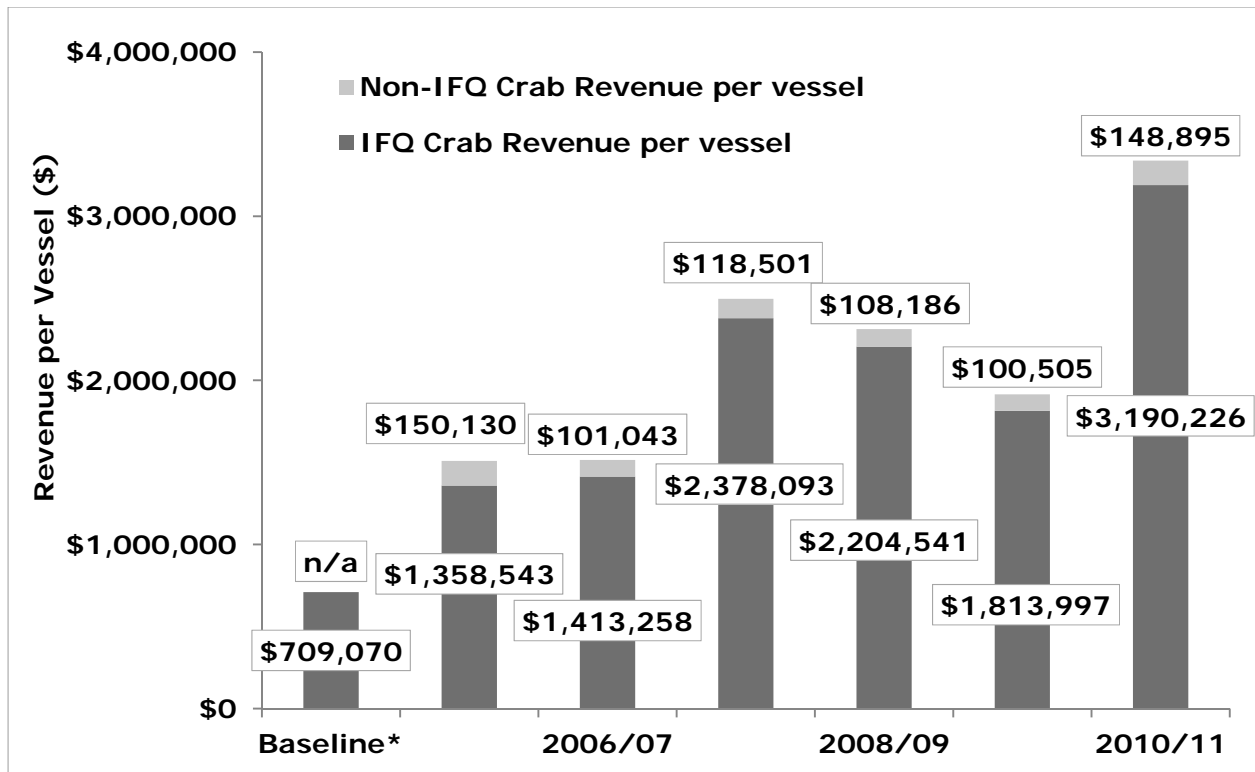


Figure 135. IFQ crab and non-IFQ crab revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the BSAI Crab Rationalization Program

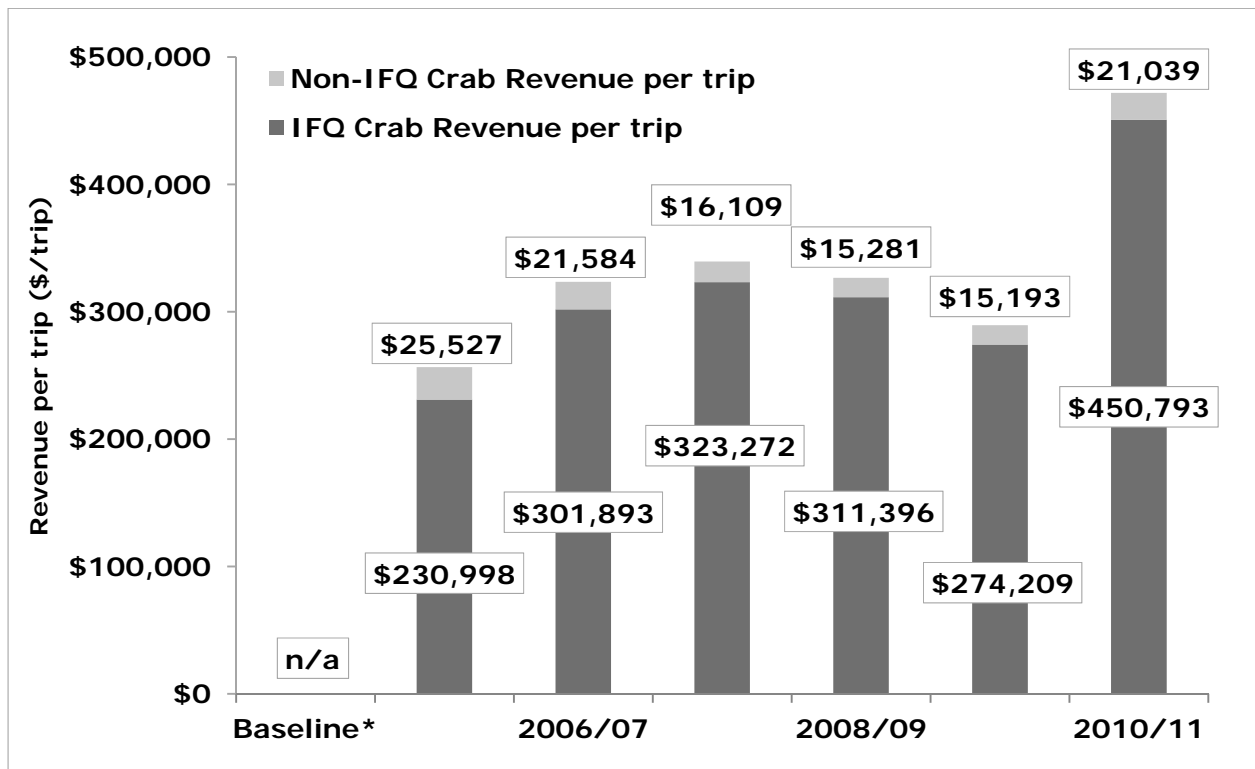


Figure 136. IFQ Crab and non-IFQ crab revenue (inflation-adjusted 2010 dollars) per trip that vessels fish quota in the BSAI Crab Rationalization Program

## **Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80)**

### **a. Management History**

The Bering Sea and Aleutian Islands Groundfish Fishery Management Plan (FMP) was first implemented in 1982 and manages all species of groundfish (pollock, Pacific cod, flatfish, sablefish and rockfish). The original FMP has been amended over ninety times, where the management focus has shifted from limiting foreign fleets to managing domestic fleets. Amendments have set guidelines and procedures for establishing and apportioning the Total Allowable Catch, implemented gear and size restrictions, data reporting requirements and established regulations for at-sea observers.

Bering Sea flatfish, Atka mackerel and Pacific Ocean perch fisheries in the Aleutian Islands are managed under this FMP. These fisheries mainly have been prosecuted by a group of trawl catcher/processors that do not target pollock; this fleet is referred to as the Amendment 80 fleet. Discards and bycatch have long been concerns in this fishery in which lower valued and smaller flatfish were often discarded at sea. The race for fish increased discarding as only the higher-valued species were retained. The North Pacific Fishery Management Council began developing cooperative fishing programs in 2002 as a mechanism to increase retention of all fish species. The Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives Program was developed and implemented by the North Pacific Council in 2008 as Amendment 80 to the Bering Sea and Aleutian Islands Groundfish FMP.

### **b. Program Objectives**

The goal of Amendment 80 is to create economic incentives to improve retention, utilization<sup>13</sup> and reduce bycatch by the commercial fishing vessels using trawl gear in the non-pollock groundfish fisheries. Amendment 80 allocates portions of catches for the six Amendment 80 species: Atka mackerel, Pacific cod, Pacific Ocean perch and three species of flatfish (yellowfin sole, rock sole and flathead sole). There are also allowances outside of the Bering Sea and Aleutian Islands region for sideboards for pollock, Pacific cod, Pacific Ocean perch, northern rockfish, pelagic shelf rockfish and a prohibited species catch allocation for halibut. Sideboards are intended to limit the ability of vessels in rationalized fisheries from exceeding historic levels of participation in other fisheries, which otherwise might exacerbate a "race for fish." Sideboards can be collective catch limits that apply to all vessels in a particular sector. Vessels subject to a sideboard limit are allowed to fish up to that limit but may not exceed it. Amendment 80 vessels that do not join a cooperative are eligible to participate in a limited access fishery.

### **c. Key Events/Features**

Amendment 80 allocates six non-pollock species and five prohibited species in the Bering Sea and Aleutian Islands to the catcher/processor sector and allows qualified vessels to form cooperatives. The Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives fleet comprises medium to large pelagic and bottom trawl vessels with limited factory space and processing capability. From 2008 – 2010, the majority of vessels were in one cooperative, with the remainder being in the limited-access fishery. Since 2011, all of the catcher/processors are in one of two cooperatives. These voluntary harvest cooperatives manage the target allocations, incidental catch allowances and prohibited species allocations amongst themselves.

The North Pacific Fishery Management Council designed the Non-Pollock Groundfish Cooperatives Program to allow eligibility based upon those persons who: 1) did not meet the qualification criteria of an American Fisheries Act trawl catcher/processor sector as defined in section

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<sup>13</sup> *Utilization* in Alaska fisheries refers to increasing the percentage of retained catch to comply with Groundfish Retention Standards. Percent utilization refers to the economic performance indicator defined in this report (see Table 2).

219(a)(7) in the American Fisheries Act; and 2) held a portion of the catch history of Amendment 80 species during the period from 1998 to 2004. Initial allocations were issued to cooperatives and the Amendment 80 limited access sector with catch history.

Amendment 80 quota share holders may, on an annual basis, elect to form a cooperative with other Amendment 80 quota share holders to receive an exclusive harvest privilege for the portion of the catch limit resulting from their aggregated quota share holdings. This cooperative quota is the amount of annual Amendment 80 species catch limit dedicated for exclusive use by that cooperative. Quota shares can be transferred with vessel and catch history, while annual allocations of quota metric tons can be leased annually within and between eligible cooperatives.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual costs related to management, data collection and enforcement of a Limited Access Privilege Program or Community Development Quota Program. The applicability of cost recovery fees to the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives Program (Amendment 80) fleet is currently under review and development.

The purpose of excessive quota share caps is to prevent individual shareholders (or entities) from controlling harvesting (and processing) as well as achieving management objectives, per the Magnuson-Stevens Act and the National Standards. A person or entity may not individually or collectively hold or use more than 30% of the aggregate quota share. An Amendment 80 vessel may not catch more than 20% of the catcher/processor quota assigned to the Amendment 80 sector.

#### **d. Recent Trends**

The Baseline Period refers to the average of the three years prior to the implementation of the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives Program (2005 – 2007).

##### **i. Catch and landings**

The quota for Amendment 80 species increased by 34% to 353,000 metric tons in the first year of the cooperative program compared to the Baseline Period (Figure 137). The Amendment 80 species quota then was increased by approximately 7% and 5% in the next two years of the catch share program. In 2010, the quota was raised to 395,000 metric tons, over 50% greater than the quota during the Baseline Period.

Amendment 80 species landings were 200,000 metric tons during the Baseline Period. Upon implementation of Amendment 80, landings increased by 27% to 254,000 metric tons in 2008 (Figure 137). Landings decreased by 8% to 250,000 metric tons in 2009. Although Amendment 80 species landings in 2010 (241,000 metric tons) were less than the historical high in 2008 (254,000 metric tons), 2010 landings were 20% greater than the Baseline Period (Figure 137).

The Amendment 80 Fleet utilized approximately 76% of the available quota in the Baseline Period; however, quota utilization decreased in each subsequent year of the Program to 61% in 2010 (Figure 138). Quota utilization rates have been low in recent years because the quota allocated to the Amendment 80 Program has increased and vessels have been increasingly constrained by prohibited species catch limits and increasingly, by their allocation of Pacific cod target quota. The combined catch of federally managed groundfish species in the Bering Sea and Aleutian Islands is constrained to a 2 million metric ton cap, which is estimated to be the maximum amount of surplus groundfish production that the ecosystem can sustain. AFA pollock makes up the majority of the 2 million metric ton cap; therefore, the quota for Amendment 80 species is not driven by those species' biology or ABC, but rather by the pollock biomass in any given year. Due to the fact that many vessels and processing plants are dependent on pollock, which is more valuable than the Amendment 80 fishery, fishery managers tend to make sure the

pollock fishery never reaches this ecosystem cap in years of abundant pollock; as a result, the Amendment 80 quota is lowered. Similarly, in years of low pollock abundance, there is more leeway under the ecosystem cap and managers tend to allocate more quota to the Amendment 80 fishery, even though they may not catch this excess quota. Therefore, even with the Amendment 80 vessels having larger aggregate landings, they were not able to drastically increase production to account for the large increase in quota allocation, leading to a decrease in quota utilization over this period. Additionally, beginning in 2008, the harvested proportion of Pacific cod quota allocated to the Amendment 80 fleet was decreased, and as a result the Amendment 80 Cooperatives are further constrained by Pacific cod incidental catch. The Annual Catch Limit has not been exceeded in any year of the catch share program or during the Baseline Period.

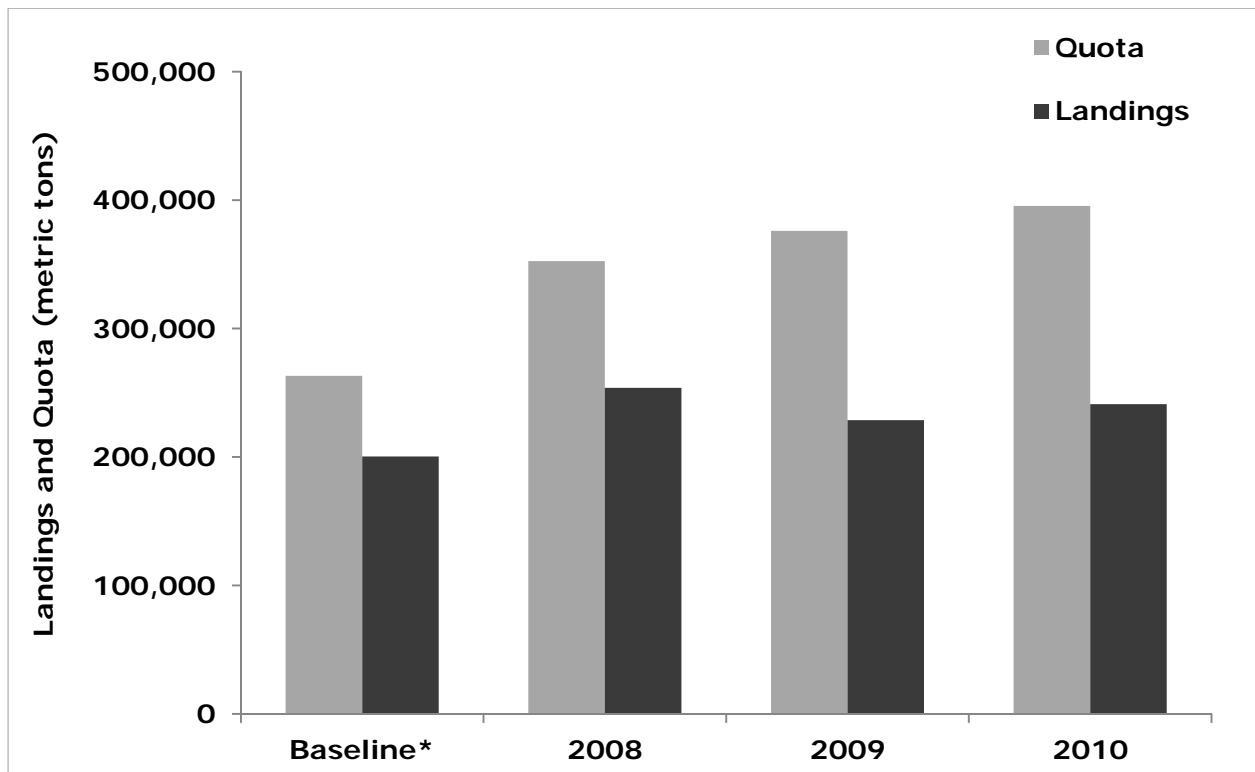


Figure 137. Quota and Landings in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

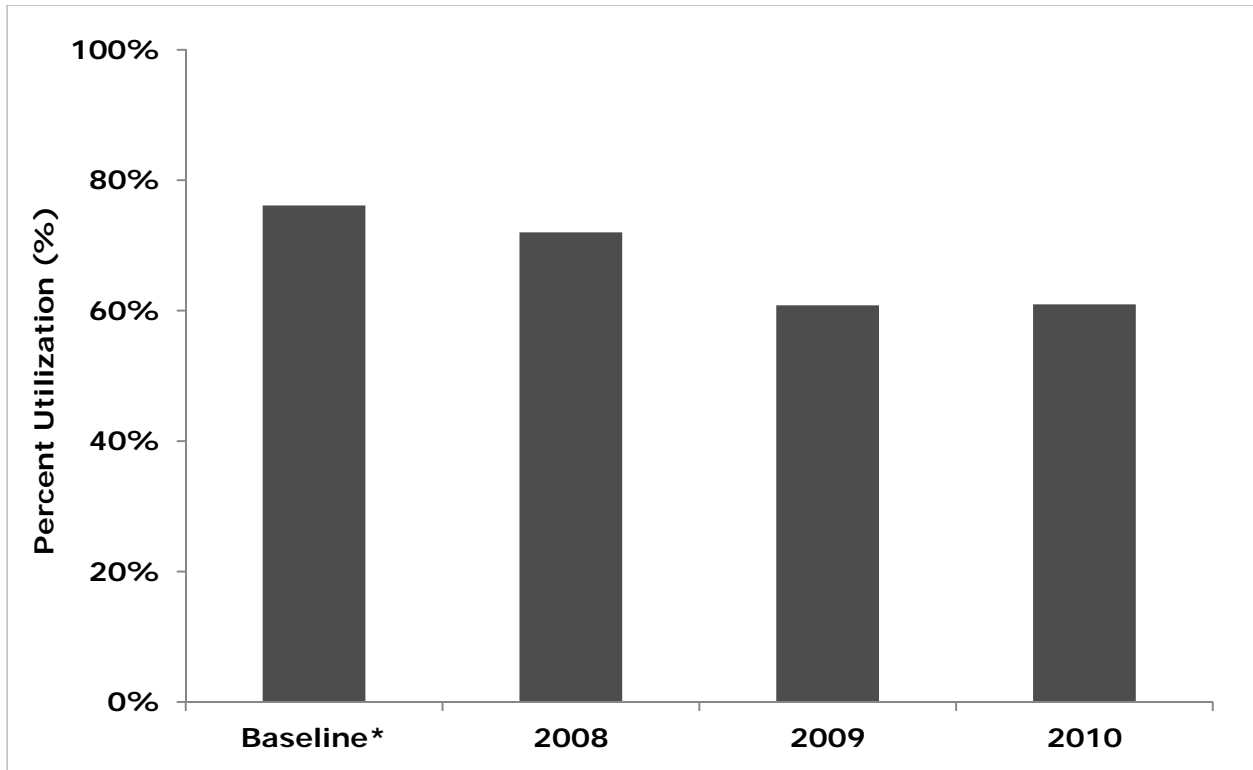


Figure 138. Utilization of available quota in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

ii. Effort

During the Baseline Period\*, there were 28 entities (vessels or Limited License Permit holders) eligible to receive initial quota share for the Program. Upon implementation of Amendment 80, there was a 4% reduction in participating entities (from 28 entities in the Baseline Period to 27) holding quota share in 2008; in 2010, the number of entities remains constant at 27 entities holding quota share (Figure 139). There were 22 active catcher/processor vessels during the Baseline Period (Figure 140). Throughout the duration of the catch share program, the number of active catcher/processor vessels has fluctuated by 5% from 22 active vessels in 2008 to 20 active vessels in 2010.

Entities are defined as vessels since the original quota shares were issued to: (1) the vessel owner and if not available then (2) the LLP license holder. For the non-baseline reporting years counts of unique vessels with quota units were pulled from RAM's online reports:

<http://www.fakr.noaa.gov/sustainablefisheries/amds/80/default.htm>. The Baseline Period number of entities (vessels) were obtained from the regulations in the final rule, table 31: <http://www.fakr.noaa.gov/frules/72fr52668.pdf>.

A season length index was constructed to account for the differences in season length, the fleet's utilization of these seasons and to construct an indicator that accounts for change over time in the active fishing season length across multiple fisheries. The season length index represents the proportion of the number of days when fishing actually occurred for any of the Amendment 80 species compared to the maximum number of days where fishing was allowed during the year. Using this index provides an indication of the temporal utilization of the Amendment 80 species



and changes each year even if the regulatory season length remains constant. As a result, utilizing this unit-less index allows the season length index to be combined over multiple species to achieve an overall program season length. During the Baseline Period, fishing was allowed for Amendment 80 species for 346 days the season length index was 0.75. Upon implementation of the Amendment 80 Program, the regulatory season length did not vary from 346 days, with the exception of Leap Years. The season length index fluctuated between 0.90 – 0.94 (Figure 141). Due to the manner in which the Program is managed (and as a result how data are collected), the number of days at sea fishing halibut is not available.

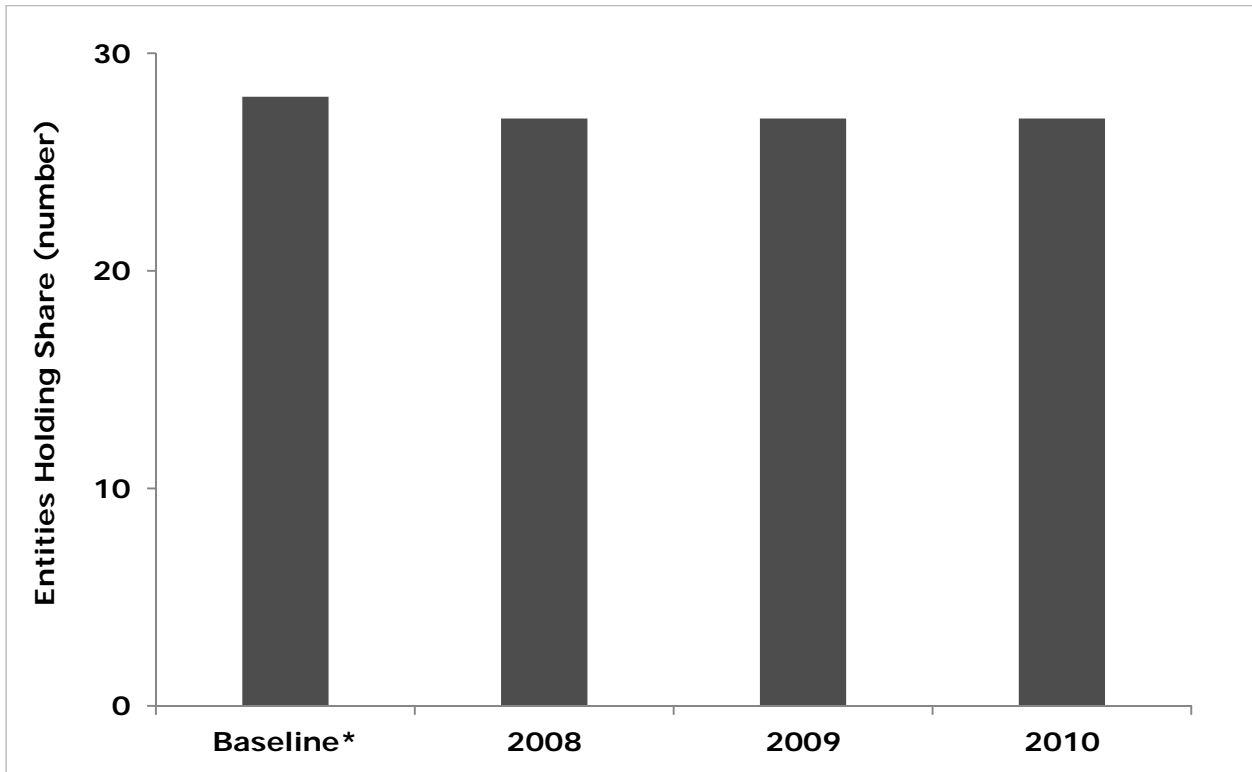


Figure 139. Number of entities holding share in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

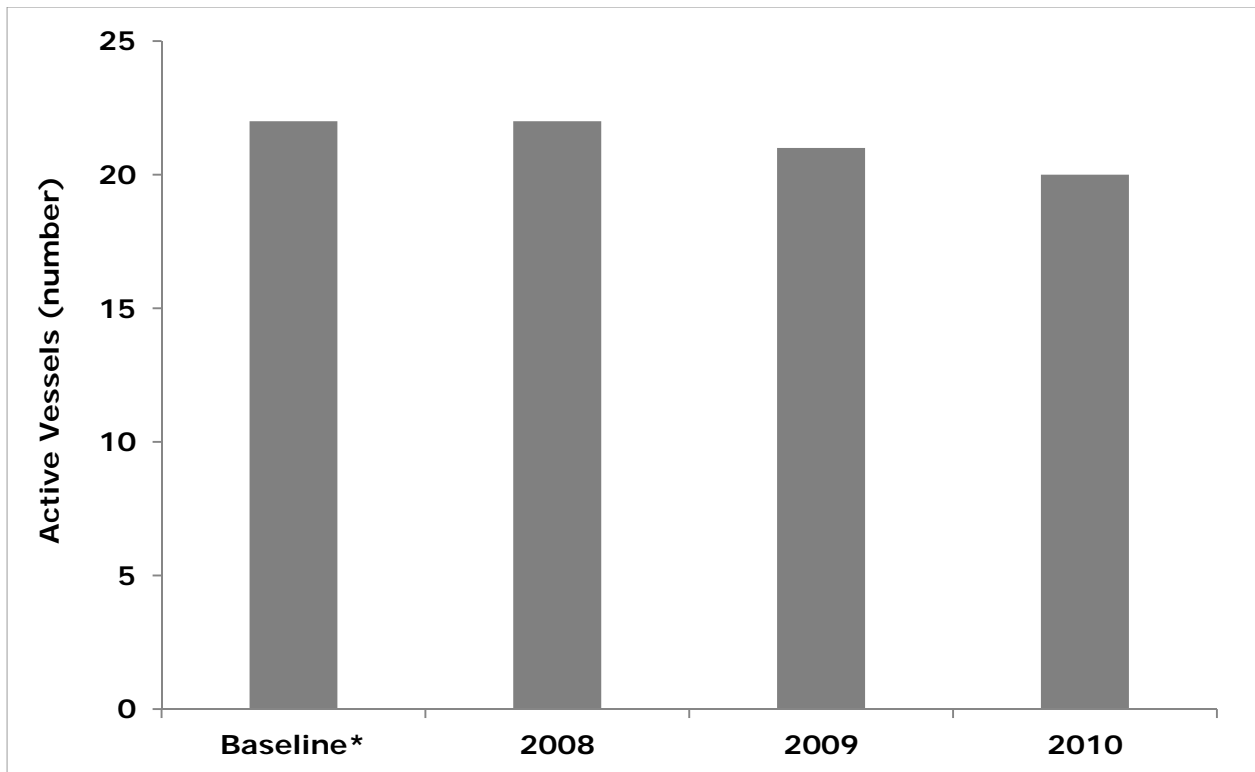


Figure 140. Active vessels fishing quota in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

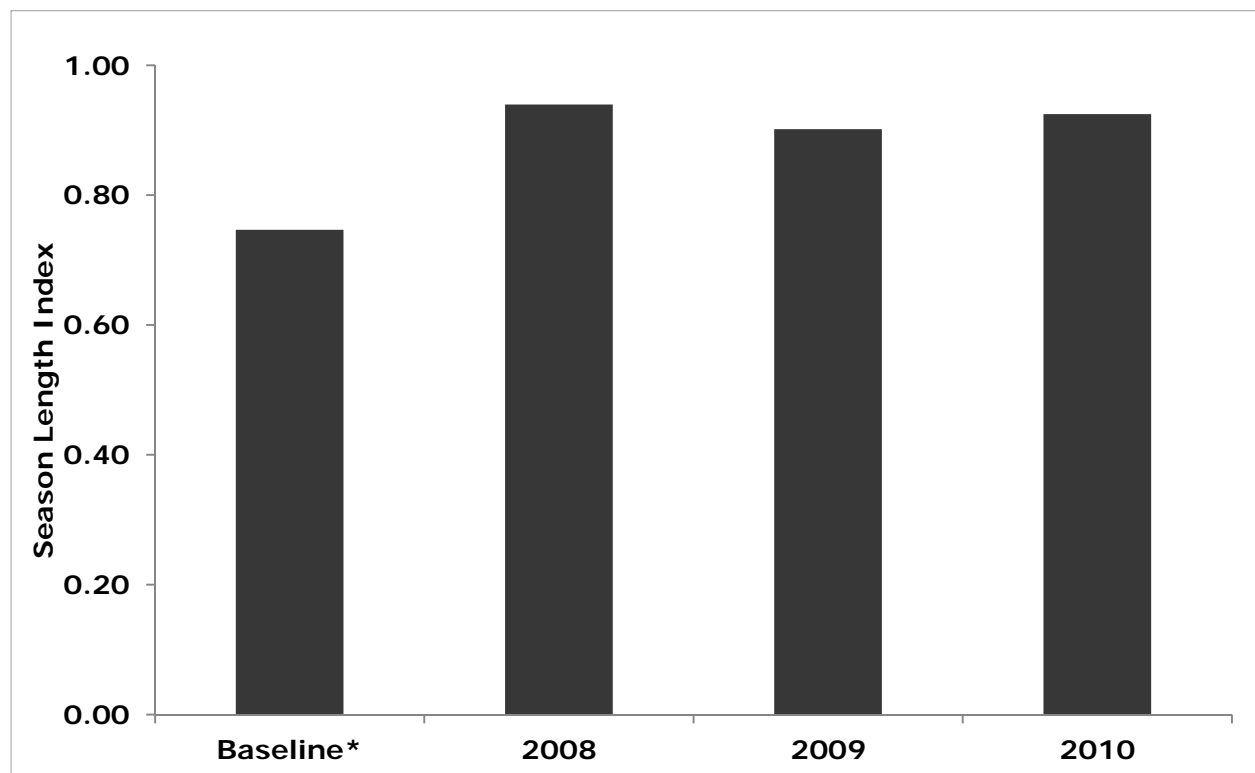


Figure 141. Season length index in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

- iii. Revenue - All revenue and cost recovery data have been adjusted by the GDP deflator indexed for 2010.

Due to the nature of the vessels in this fishery (catcher/processors), revenue is reported as the first wholesale value of production. In the first year of the Amendment 80 program, revenue grew by 5% to \$244 million in 2008 compared to the Baseline Period (Figure 142). This increase was largely due to a landings increase. Amendment 80 allowed the fleet to optimally use their allocated prohibited species catch across all target species which allowed them to increase their catch in times of low prohibited species catch. In 2009, revenue decreased by 16% to \$206 million, but in 2010 revenue increased to \$234 million. Despite some fluctuation in Amendment 80 cooperatives' revenue in part due to large swings in global markets and the ability of Amendment 80 vessels to target other species (arrowtooth and Kamchatka flounders) with their share of prohibited species catch, revenue in 2010 (\$234 million) was approximately equal to revenue during the Baseline Period (Figure 142). The average prices per metric ton of Amendment 80 species decreased by 13% in 2010 compared to the Baseline Period (Figure 143). Revenue per active vessel has followed a similar trend to overall revenue (Figure 144). There were initial increases (5%) in revenue per vessel in 2008 compared to the Baseline Period, followed by decreased revenue per vessel in 2009 (-11%) and ending with increased revenue per vessel in 2010 (19%) compared to 2009. Despite the fluctuation in revenue per vessel, the 2010 revenue per vessel (\$11.7 million) in the Amendment 80 program was 36% greater than revenue per vessel during the Baseline Period (\$10.6 million).

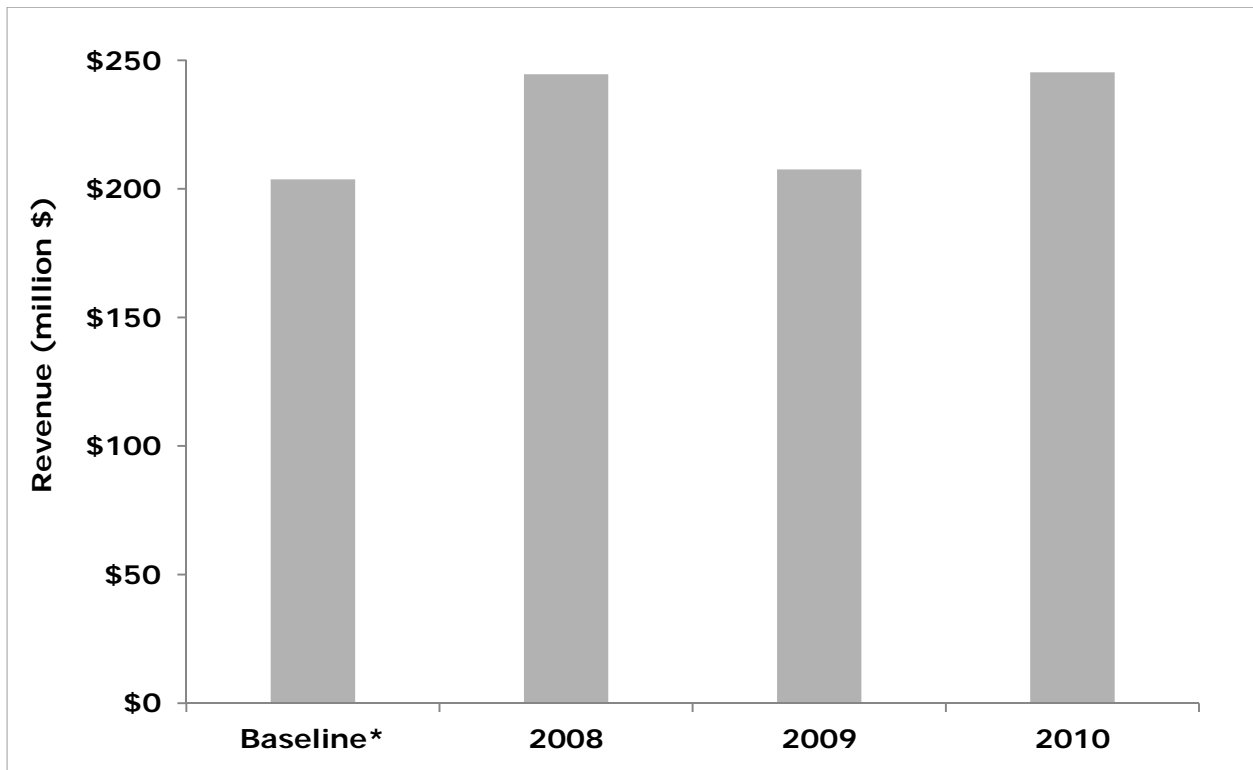


Figure 142. Total revenue (inflation-adjusted 2010 dollars) by vessels fishing quota in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

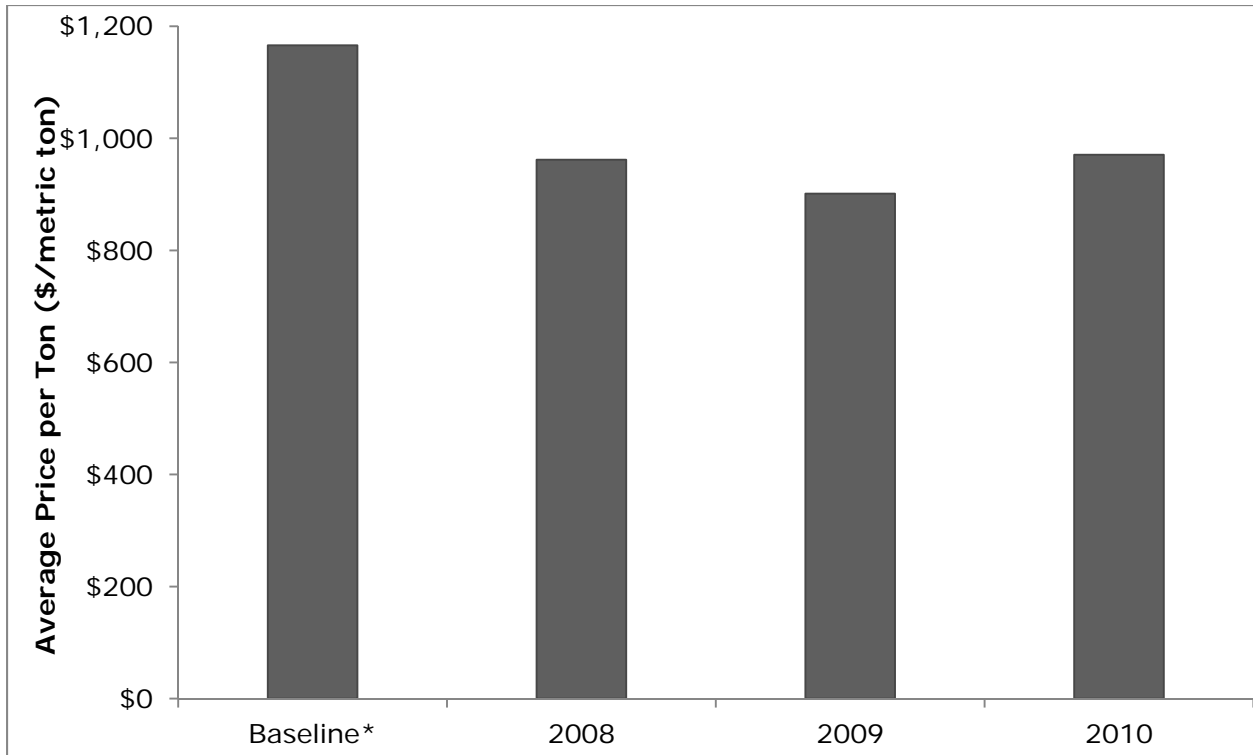


Figure 143. Average combined groundfish price per metric ton (inflation-adjusted 2010 dollars) in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program

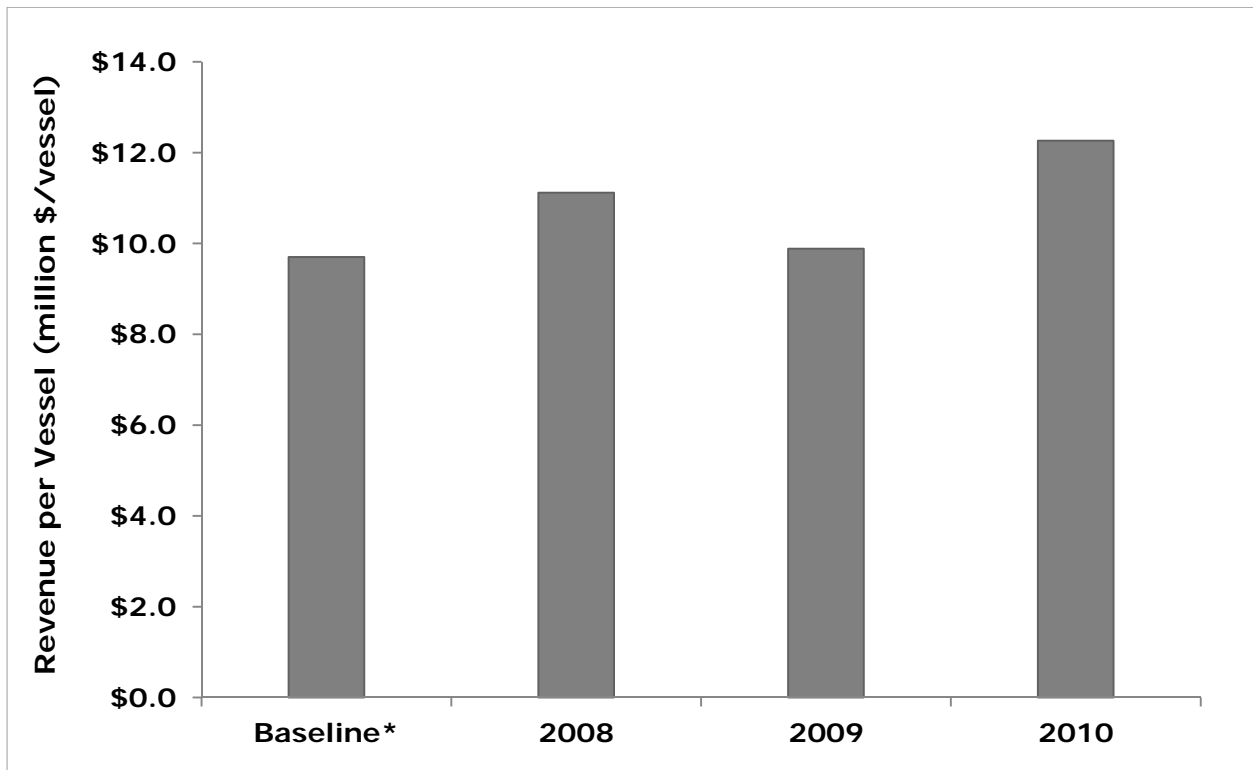


Figure 144. Revenue (inflation-adjusted 2010 dollars) per vessel fishing quota in the Non-Pollock Trawl Catcher/Processor Groundfish Cooperatives (Amendment 80) Program