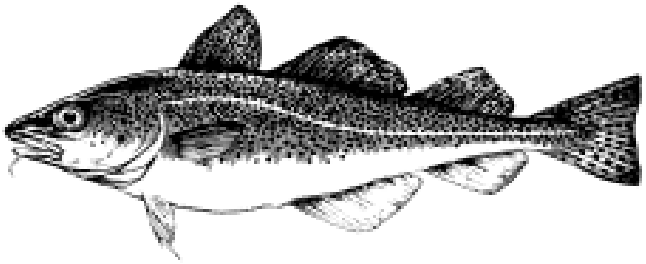
BSAI PACIFIC COD ALLOCATION REVIEW
FINAL

June 22, 2019



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List of Acronyms and Abbreviations

ABC	acceptable biological catch
ADF&G	Alaska Department of Fish and Game
AFA	American Fisheries Act
AI	Aleutian Islands
AKRO	NMFS Alaska Regional Office
BOF	Board of Fish
BS	Bering Sea
BSAI	Bering Sea and Aleutian Islands
CDQ	Community Development Quota
Council	North Pacific Fishery Management Council
C/P	Catcher processor
CPUE	catch per unit effort
CV	catcher vessel
DFA	directed fishing allowance
EBS	Eastern Bering Sea
FFP	federal fisheries permit
FLCC	Freezer Longline Conservation Cooperative
FMP	fishery management plan
GHL	guideline harvest level
GOA	Gulf of Alaska
H&G	head and gut
ICA	incidental catch allowance
ITAC	initial total allowable catch
LAPP	Limited Access Privilege Program
LLP	license limitation program
LOA	length overall
MSA	Magnuson-Stevens Fishery Conservation and Management Act
mt	metric ton
NBS	Northern Bering Sea
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
Observer Program	North Pacific Groundfish Observer Program
OFL	overfishing level
PSC	prohibited species catch
SSL	Steller sea lion
TAC	total allowable catch

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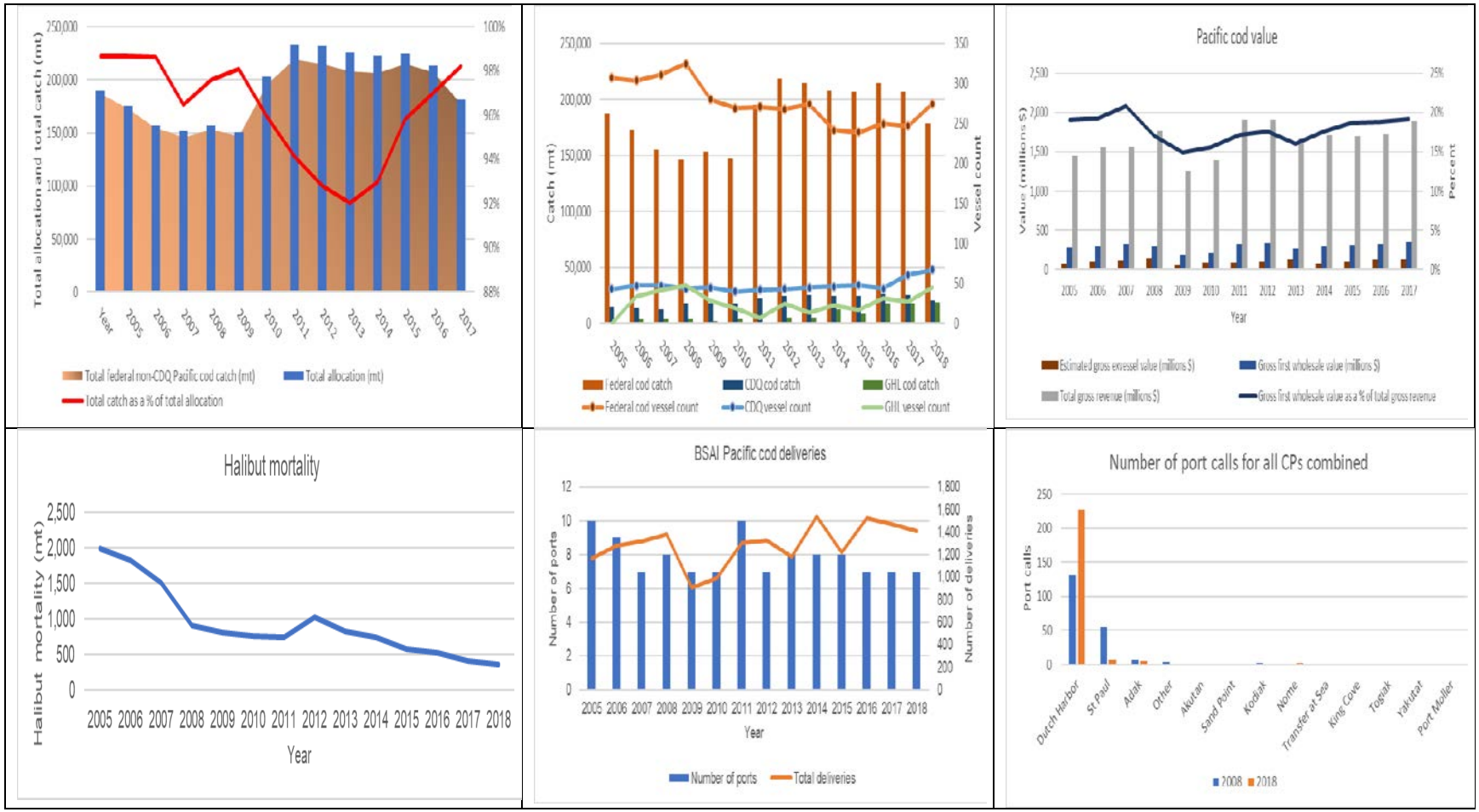
1 Executive Summary

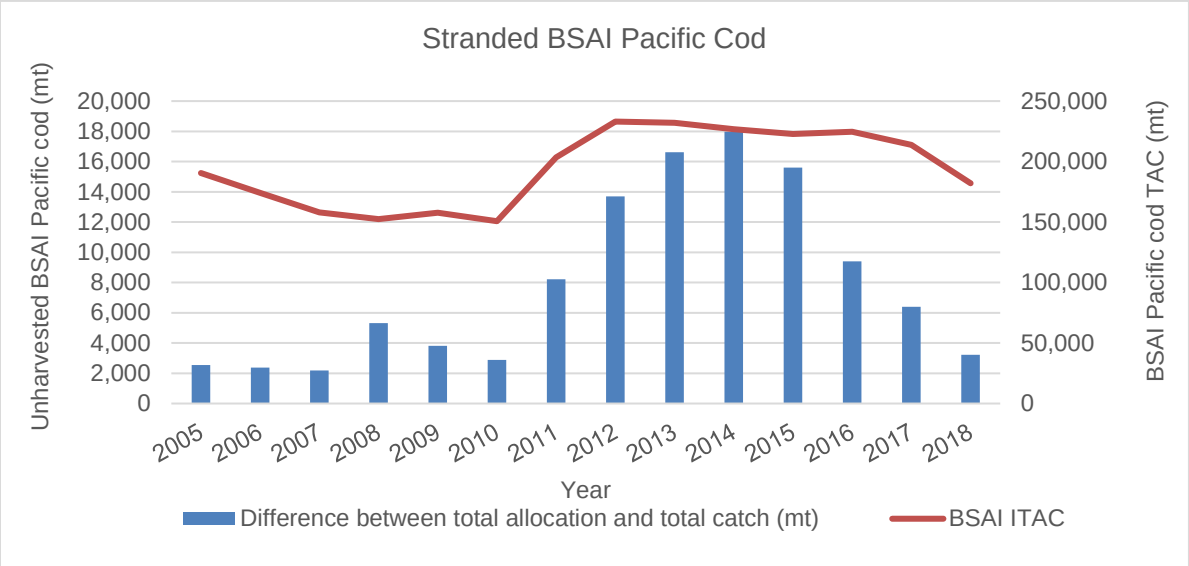


Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 1-1 BSAI Pacific cod indicators for all sectors combined from 2005 through 2018

Based on National Marine Fisheries Service (NMFS) issued Fisheries Allocation Policy Directive in July of 2016, the Council is required to conduct a periodic review of Bering Sea and Aleutian Island (BSAI) Pacific cod allocations to ensure that the optimal yield (OY) is being achieved under current conditions.

The goal of this allocation review is designed to assist the Council in determining whether or not the development and evaluation of BSAI Pacific cod allocation alternatives are warranted.

Overall, the nine BSAI Pacific cod sectors harvested, on average, 96 percent of the BSAI Pacific cod total allowable catch (TAC) on annual basis since implementation of Amendment 85 in 2008 (Figure 1-1 and Table 8-44). By comparison, the three years prior to the implementation of Amendment 85, the combined sectors harvested 99 percent of BSAI Pacific cod TAC. Nevertheless, Figure 1-2 denotes several years where large amounts of BSAI Pacific cod remained unharvested. Since implementation of Amendment 85, the largest amount of BSAI Pacific cod that unharvested was in 2014 at 17,978 mt, while smallest amount of BSAI Pacific cod that remained unharvested was in 2010 at 2,877 mt. Annual total reallocations of BSAI Pacific cod have also varied widely since implementation of Amendment 85. The largest reallocation was 23,529 mt in 2015, while the smallest reallocation was 5,120 mt in 2018.



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 1-2 Annual unharvested BSAI Pacific cod and BSAI Pacific cod TAC from 2005 through 2018

Harvesting and processing activity in other BSAI Pacific cod fisheries (i.e., guideline harvest (GHL) and community development quota (CDQ)) varied across the different BSAI Pacific cod sectors. In the CDQ fishery, sectors that routinely participated in the CDQ fishery were the trawl catcher vessel (CV), hook and line (HAL)/pot CV < 60 ft, American Fisheries Act (AFA) catcher processor (C/P), Amendment 80, pot C/P, and HAL C/P. As noted in Figure 1-1, collectively, the number of vessels participating in the BSAI Pacific cod CDQ fishery has ranged from a low of 40 vessels in 2010 to a high of 67 vessels in 2018. Starting in 2017, the number of participating vessels increased to over 60, which is attributed to the increased participation by the HAL/pot CV < 60 ft sector. Harvest activity in the BSAI Pacific cod CDQ fishery has ranged from a low of 12,501 mt in 2007 to a high of nearly 26,00 mt in 2016.

In the GHL fisheries, participate is restricted based on gear and vessel length. In the AI GHL fishery, trawl, HAL, pot, and jig gear along with various vessel length are restricted during different time periods and in different areas. In the Dutch Harbor Subarea (DHS) GHL fishery, only vessels using pot gear that are 58 ft or less can participate. Finally, in the DHS jig GHL fishery, only jig vessels less than 58 ft or less can participate. These gear and vessel length restrictions curtail routine participate in the GHL

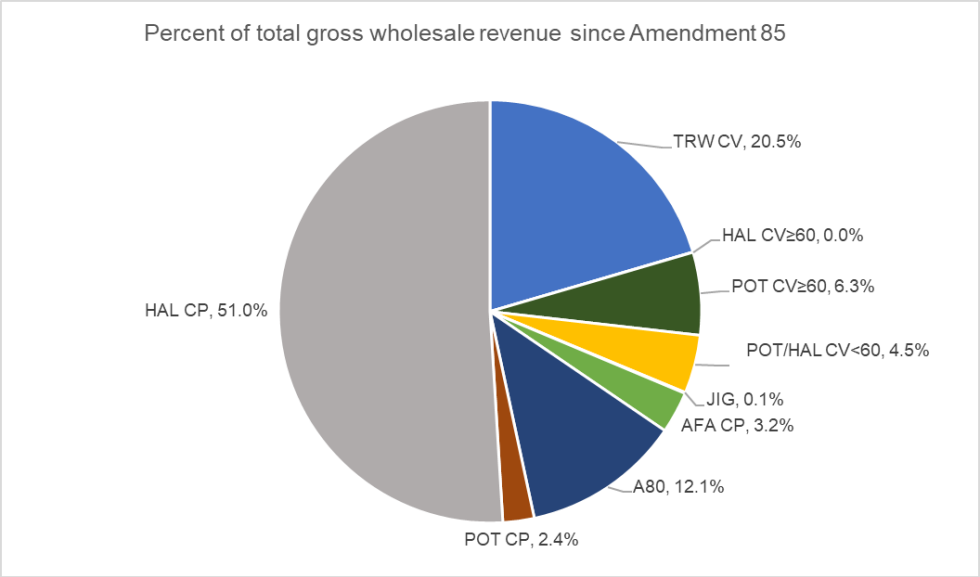
fisheries to the trawl CV and HAL/pot CV < 60 ft sectors. As noted in Figure 1-1, the number of vessels has ranged from a low of 6 in 2011 to a high of 47 in 2008. Harvest has ranged from a low 266 mt in 2011 to a high of 18,766 mt in 2018.

Of the two sectors that participate in the GHL fisheries, the HAL/pot CV < 60 ft has shown the most growth in recent years. Most of this growth in the GHL fishery starting in 2014. Prior to 2014, the number of participating HAL/pot CV < 60 ft vessels ranged from two to 10 harvesting between 111 mt and 562 mt, all of which was in the AI GHL fishery since that was the only GHL fishery in the BSAI. Starting in 2014 with the implementation of a DHS GHL fishery, the number of HAL/pot CV < 60 ft vessels increased to 18 which harvested 11,401 mt of Pacific cod. In 2018, 37 sector CVs harvested over 17,000 mt of DHS GHL.

Looking at the harvest distribution between the AI and BS Pacific cod fishery across the nine BSAI Pacific cod sectors, all sectors participated in the AI Pacific cod fishery to some degree. Six sectors routinely participated in the AI Pacific cod fishery. These include the trawl CV, HAL CV ≥ 60 ft, HAL/pot CV < 60 ft, AFA C/P, Amendment 80, and HAL C/P sectors. Sectors that participate in the AI Pacific cod irregularly were pot CV ≥ 60 ft, jig, and pot C/P. Collectively, the vessel count participating in the AI Pacific cod fishery has ranged from a low of 30 in 2014 to a high of 96 vessels in 2008. Harvest of AI Pacific cod by the combined sectors has ranged from a low of 5,561 mt in 2014 to a high of 27,644 mt in 2007. On average, the AI accounted for 7.1 percent of the total BSAI Pacific cod harvest since implementation of Amendment 85 in 2008. Since the implementation of separate AI and BS TACs in 2014, the AI, on average, has accounted for 4.8 percent of the total BSAI Pacific cod harvest.

As noted in Figure 1-1 and Table 8-45, the total estimated gross exvessel value for the BSAI Pacific cod fishery, the fishery has on average generated $97 million on annual basis, while the gross first wholesale value has generated on annual basis $267 million. Total estimated gross exvessel value of BSAI Pacific cod has ranged from a low $61 million in 2009 to a high of $152 million in 2008. Total gross first wholesale revenue has ranged from a low of $187 million in 2009 to a high of $360 million in 2018. As a percent of the total gross revenue of all fisheries, the gross first wholesale value has on annually basis averaged 17 percent since implementation of Amendment 85, with the lowest percent in 2010 at 16 percent and the highest percent during the 2015-2017 at 19 percent.

Figure 1-3 illustrates sector distribution for total gross wholesale value of BSAI Pacific cod since implementation of Amendment 85. Overall, the HAL CP sector accounted for 51 percent of the total gross wholesale value since 2008. The next sector, trawl CV, accounted for 20.5 percent of the total gross wholesale value, followed by the Amendment 80 sector at 12.1 percent. Sectors that accounted for the less than one percent of the total gross wholesale value include the jig sector and the HAL CV ≥ 60 ft sector.



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 1-3 Percent of total gross wholesale revenue for BSAI Pacific cod by sector from 2008 through 2018

Likely one of the successes of Amendment 85 is the reduction in halibut mortality (Figure 1-1 and Table 8-46). Although not entirely the cause for the reduction in halibut mortality since 2008, the Amendment 85 allocations have likely reduced uncertainty about the availability of yearly BSAI Pacific cod harvest and improved stability for most sectors which is crucial for sectors to improve halibut avoidance measures. Case in point, 2005 had a halibut mortality of 1,992 mt for all BSAI Pacific cod sectors combined, while in 2018 the halibut mortality was 371 mt. One challenge to this halibut PSC trend is the recent increased pace of the BSAI Pacific cod fishery for the trawl CV sector. Although 2018 had one of lowest halibut mortality amounts in the BSAI Pacific cod directed fishery, the pace of the A-season fishery for the trawl CV sector is increasing which could result in higher halibut mortality in the future. Crab, Chinook salmon, and non-Chinook PSC for all sectors combined has also declined since implementation of Amendment 85 in 2008. The one exception is red king crab which had, relative to 2005 through 2007, high PSC in 2013 through 2015 and 2018.

The port delivery indicator provided in Figure 1-1 and Table 8-47 depicts the total number of ports and number of deliveries of targeted BSAI Pacific cod for the combined CV sectors during the 2007 through 2018 period. Overall, the most prominent ports of delivery for the combined CVs are floating processors followed by Unalaska/Dutch Harbor and Akutan. Other ports that consistently report CV deliveries on annual basis are Adak, motherships, and King Cove. The total number of ports and deliveries has fluctuated between seven to 10 ports and 910 to 1,540 deliveries.

Using observer data, the port call indicator in Figure 1-1 and Table 8-48 depicts the annual number of port calls by port for combined C/Ps that target BSAI Pacific cod. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Most of the port calls over the 2008 through 2018 period were primarily to Unalaska/Dutch Harbor, but St. Paul also had a modest number of port calls by the combined C/P sector.

From a community perspective (see Table 8-49), the owner city data notes a modest change amongst owner residency since Amendment 85 implementation for sectors combined. Of the many community's vessel owners report as their residence, Seattle had the largest number on an annual basis. In 2007, there were 171 reported vessel owners that reported Seattle as their residence, while in 2018 there were 139

vessel owners reporting Seattle as their residence. The decrease in the number of vessel owners reporting their residence as Seattle likely is in part due to consolidation for some the sectors.

In summary, as noted in the problem statement, the implicit objectives of Amendment 85 were:

- Establish allocations that more closely reflect historical use by the sectors than previously
- Consider catch history, socioeconomic, and community factors to include allocations to small boat sectors to expand entry-level and local opportunities in the BSAI Pacific cod fishery
- Reduce the need for inseason reallocations during the fishing year
- Reduce uncertainty about the availability of yearly harvests within sectors caused by reallocations
- Provide stability among sectors in the BSAI Pacific cod fishery

In essence, Amendment 85 was designed to balance historical dependency and use by the sectors, provide entry level and local opportunities, and provide an improved framework for reallocating Pacific cod between sectors all while improving optimum yield of the BSAI Pacific cod resource.

Overall, the allocation review notes that some sectors do not fully harvest all their BSAI Pacific cod allocations, which does result in some unharvested BSAI Pacific cod on annual basis. There are several factors impacting the ability of many sectors to harvest all their BSAI Pacific cod allocation. As noted in Section 4.2, some sectors have routinely harvested all their allocation of BSAI Pacific cod: HAL/pot CV < 60 ft, AFA trawl C/P, pot C/P, and HAL C/P, while other sectors routinely harvested less than their initial BSAI Pacific cod allocation. These include a lack of participation in the BSAI Pacific cod fishery by sector participants (jig, and HAL CV ≥ 60 ft), hard cap management limitations (Amendment 80), because BSAI Pacific cod fishery is a secondary fishery to other more valuable fisheries (trawl CV and pot CV ≥ 60') and the difficulty catching C-season Pacific cod due to less aggregation of Pacific cod (trawl CV). Other factors impacting the success of harvesting all the BSAI Pacific cod TAC could include world market conditions and the level of the BSAI TAC for Pacific cod. With lower world market prices for Pacific cod, sectors may focus on other harvesting opportunities that would have a higher perceived benefit than BSAI Pacific cod. Higher BSAI Pacific cod TACs could surpass the harvest capacity of the combined sectors.

In addition to unharvested BSAI Pacific cod, the BSAI Pacific cod species and its habitat has also undergone dramatic changes in the management of the fishery as well as changes in the environmental/ecosystem for the stock since implementation of Amendment 85. Some of the management changes include BS and AI Pacific cod split starting in 2014, new Steller sea lion protection measures implemented in 2015, and the addition of the BS GHL fishery starting in 2014. Changes in the environmental/ecosystem include recent low recruitments of BSAI Pacific cod, continue decline in the survey abundance, uncertainty in migration of the stock, current distribution of the stock is unprecedented, lack of sea ice in the Eastern BS and associated virtually absent cold pool, and forecast of continued warm conditions in South Eastern BS just to name a few.

Recognizing these changes to the BSAI Pacific cod species and habitat and the difficulty in harvesting all the BSAI Pacific cod TAC on an annual basis (see Table 1-1), the Council could initiate an FMP amendment to develop new sector allocations based on the guidance provided in the Fisheries Allocation Policy Directive. Whether these changes in the management, population, and environmental/ecosystem along with the optimal yield inefficiencies for some sectors as noted in this allocation review are sufficient to initiate development of a new allocation program is policy decision by the Council. **If the Council, utilizing all the information in the BSAI Pacific cod allocation review, determines that the objectives of Amendment 85 and the appropriate groundfish FMP objectives are still being met, then the allocation review is complete, and the 10-year time trigger for the BSAI Pacific cod allocation review is reset. If, however, the Council, utilizing the information from the allocation review, deems that the Amendment 85 objectives or the appropriate groundfish FMP objectives are**

no longer being met, or the Council is uncertain how changes in the other relevant factors may impact their objectives for BSAI Pacific cod sector allocation, then the Council could initiate a process to consider whether an FMP amendment to develop a new sector allocation and/or modify objectives, based on the guidance provided in the Fisheries Allocation Policy Directive.

Table 1-1 List of Amendment 85 and groundfish FMP objectives, location of information, and summary of data addressing the objectives

Amendment 85 and groundfish FMP Objectives	Location of information	Summary of data
Allocations closely reflect historical use	See catch and allocation figure in dashboards and tables in the appendix	Since implementation of Amendment 85, historical use of BSAI Pacific cod relatively to their initial allocation has changed for some sectors. A few sectors have increased their harvest of BSAI Pacific cod beyond their yearly initial allocation through the reallocation of BSAI Pacific cod while other sectors are harvesting BSAI Pacific cod well below their yearly initial allocation.
Consider catch history, socioeconomic, and community factors to include allocations to small boat sectors to expand entry-level and local opportunities	See the following figures from the sector dashboards: • Catch and allocation figure • BSAI Pacific cod deliveries by CVs • Number of port calls by C/Ps • Ownership address (city) See also supporting data tables in appendix	As noted above, a few sectors have routinely harvested BSAI Pacific cod beyond their initial allocation because of the reallocation mechanism, while other some sectors have not routinely harvested their initial allocation. CV deliveries and C/P port calls have remained consistent since implementation of Amendment 85. In general, the increased allocations for small boat sectors to expand entry-level and local opportunities has had mixed success.
Reduce the need for inseason reallocations during fishing year	See catch and allocation figure, Table 8-44, and Table 4-5 for reallocations amounts for 2008, 2009, 2017, and 2018.	Since implementation of Amendment 85, inseason reallocations have <u>not</u> been reduced.
Reduce uncertainty about the availability of yearly harvests within sectors cause by reallocations	See catch and allocation figures in the dashboards, Table 8-44, supporting sector data in the appendix, and individual sector profiles.	As an example of the reduced uncertainty caused by reallocations, Amendment 85 has provided an environment that allows the combined sectors to harvest on average 96% of the BSAI Pacific cod total allocation while reducing PSC and maintaining the value and similar delivery patterns.
Provide stability among sectors	See sector dashboards, supporting data in the appendix, and individual sector profiles	In general, Amendment 85 has provided a framework that maintains stability of the sector. Some minor contraction in the number of vessels and the season lengthen has occurred for some sectors since implementation of Amendment 85, but these sectors have maintained a level stability since Amendment 85 implementation. Sectors that are showing signs of instability are the trawl CVs and HAL/pot CVs < 60 ft. The A-season for the trawl CV sector has shorten from a 60-day fishery in 2009 to 12-day fishery in 2018. The HAL/pot CV < 60 ft. sector has seen a dramatic increase in their harvest of federal, GHL and CDQ Pacific cod fisheries, and the pace of their federal fishery has increased in recent years.

Amendment 85 and groundfish FMP Objectives	Location of information	Summary of data
Promote management measures that, while meeting conservation objectives, are designed to avoid signification disruption of existing social and economic structures	See catch and allocation figures in the dashboards, Table 8-44, supporting sector data in the appendix, and individual sector profiles.	One the Amendment 85 management measures that is utilized to avoid significant disruption is the reallocation hierarchy for projected unharvested BSAI Pacific cod. As noted in Table 8-44, large amounts of BSAI Pacific cod sector allocations are reallocated, based on the Amendment 85 hierarchy, to other sectors for harvest and processing throughout the year. In general, most of the reallocated BSAI Pacific cod is harvested and processed by the receiving sector.
Promote fair and equitable allocation of resource in a manner such that no particular sector acquires an excessive shares of the resource	See catch and allocation figure in dashboards and tables in the appendix	Amendment 85 enabled sectors to expand and contract their harvest of BSAI Pacific cod while at the same time prevented sectors from acquiring excessive shares of BSAI Pacific cod via the reallocation of the projected unharvested resource. Overall, some sectors have expanded their catch history beyond their initial allocation, while other sector's catch history has contracted relatively to their initial allocation.
Provide economic and community stability to harvesting and processing sectors through fair allocation of resource	See the following figures from the sector dashboards: • Catch and allocation figure • BSAI Pacific cod deliveries by CVs • Number of port calls by C/Ps • Ownership address (city) See also supporting data tables in appendix	Amendment 85 balanced the need to revise the existing allocations to better reflect historical retained catch and fully utilize the Pacific cod resource by the sector in order to reduce significant reallocations during the year with the intent of expanding allocations to small boat sectors to provide entry-level and local opportunities in the BSAI Pacific cod fishery. Overall, some sectors have expanded their catch history beyond their initial allocation through reallocations of the resource, while other sectors have harvested little of their initial allocation, so a portion of their allocation was reallocated to other sectors. Allocations to small boats for entry-level and local opportunities have had mixed results. The HAL/pot CV < 60 ft. sector has seen dramatic harvest growth in the federal, GHL and CDQ fisheries, while the jig and HAL CV ≥ 60 ft sector have seen a decline in number of participating vessels and utilization of their initial allocation.
Develop management measures that, when practicable, consider the efficient use of fishery resource taking into account the interest of harvesters, processors, and communities.	See catch and allocation figure, Table 8-44, and Table 4-5 for reallocations amounts for 2008, 2009, 2017, and 2018.	Amendment 85 modified sector allocations to better reflect actual dependency and use by sector, in part by basing the allocations on each sector's historical retained catch. The amendment also included a management structure to reallocate projected unharvested BSAI Pacific cod. Overall, some sectors have expanded their catch history beyond their Amendment 85 allocation, while other sectors have reduced their catch history relative to their allocation. Unused BSAI Pacific cod sector allocations are reallocated to other sectors for harvesting and processing throughout the year which enables more efficient use of the fishery resource. In general, most of that reallocated BSAI Pacific cod is harvested and processed by the receiving sector.

Amendment 85 and groundfish FMP Objectives	Location of information	Summary of data
Major changes in the management of BSAI Pacific cod fishery, major changes in the population, and changes in the environmental/ecosystem	See Section 3 and Section 4.1.	Major management changes include BS and AI stock split, Steller sea lion protection measures, and addition of BS guideline harvest fishery. Changes in the stock population and environment/ecosystem include low recruitment, decline in survey abundance, distribution of stock is unprecedented, lack of sea ice in EBS and absence of cold pool, and forecast of continued warm conditions in South EBS.

Nevertheless, the policy decision to initiate an FMP amendment for new sector allocations is not the only approach to address the changing BSAI Pacific cod fishery. Case in point, the Council continues to adjust the management of the BSAI Pacific cod fishery. Some of these adjustments include Amendment 113 which set-aside a portion of AI Pacific cod for harvest by CVs delivering to shoreplants in the AI, and Amendment 119 to limit certain Amendment 80 and AFA C/Ps acting as motherships when receiving BSAI non-CDQ Pacific cod deliveries from trawl CVs. In addition, the Council has recently tasked staff to prepare the several documents for future Council meetings: 1) an RIR to limit access to the parallel BSAI Pacific cod fishery for Federal fishery participants, 2) a scoping paper on the BSAI Pacific cod trawl CV management, 3) a discussion paper on the BSAI Pacific cod pot CV management, 4) a discussion paper on BS Pacific cod pot C/P participation, and 5) a discussion paper on solutions for reducing stranded BSAI Pacific cod. These Council actions and taskings indicates there are numerous approaches for addressing the changing BSAI Pacific cod fishery without changing Amendment 85 sector allocations.

In general, it is likely an extremely challenging endeavor to design a BSAI Pacific cod allocation program that would guarantee a fully harvested TAC each year due to the dynamic nature of the BSAI Pacific cod fishery and the Council's intended goals of Amendment 85. Despite these challenges, the Council in 2008 created an allocation program that provides the framework, when conditions are right, to harvest nearly all the BSAI Pacific cod allocations. Recognizing there are factors that will continue to hamper fully harvesting all of the BSAI Pacific cod TAC, the sector allocations combined with the framework for reallocating Pacific cod between sectors provides the Council intended stability for many of the sectors which assisted in reducing disruptions in their BSAI Pacific cod fishery thereby improved social and economic structures for those sectors all while also balancing the Council's intent to provide entry level and local opportunities for small vessels and improve optimum yield of the BSAI Pacific cod resource.

2 Introduction

Based on NMFS issued Fisheries Allocation Policy Directive in July of 2016, the Council is required to conduct a periodic review of Bering Sea and Aleutian Island (BSAI) Pacific cod allocations to ensure that the optimal yield (OY) is being achieved under current conditions.

The goal of this allocation review is designed to assist the Council in determining whether or not the development and evaluation of BSAI Pacific cod allocation alternatives are warranted. The workplan for the allocation review was presented to the Council in December 2018 and was adopted by the Council. This workplan provides background on the allocation review requirements, the program objectives of the Amendment 85, and applicable objectives from the Fishery Management Plan (FMP) for the Groundfish of the Bering Sea and Aleutian Island Area, and the proposed approach for the allocation review.

There are three steps in the allocation review process. Step one identifies a trigger that would initiate an allocation review, which the Council has established as a 10-year timeframe. Step two is the fisheries allocation review. The review should assess if Amendment 85 objectives are being met along with the appropriate BSAI groundfish FMP objectives and discuss if other relevant factors (ecological, economic, social, catch, status, etc.) have changed enough to warrant an in-depth formal analysis of the allocation. If Amendment 85 and appropriate FMP objectives have been met and an allocation review, which can be qualitative, suggests no major changes have occurred, then the allocation review is complete, and the time trigger under step 1 is reset for that fishery allocation. If the objectives of Amendment 85 are not being met and/or an initial analysis suggests major changes may have occurred, then the standard Council process for an FMP amendment (i.e., a reallocation action) is initiated. Guidance for the information that should be included in the allocation review is discussed in more detail in the NMFS recommended practices and fisheries allocation factors document (Procedural Directive 01-119-02).

2.1 BSAI Pacific cod allocation objectives

Over the better part of two decades the Council has established and modified an allocation system for BSAI Pacific cod through a series of FMP amendments. Currently, Federal regulations at 50 CFR 679.20(a)(7) authorize distinct BSAI Pacific cod allocations of the initial total allowable catch (ITAC) for the following sectors:

- Hook-and-line (HAL) catcher processors C/Ps – 48.7 percent
- Trawl catcher vessels (CV)s – 22.1 percent
- Amendment 80 – 13.4 percent
- Pot CVs greater than or equal to 60 feet LOA – 8.4 percent
- AFA trawl C/Ps – 2.3 percent
- HAL and pot CVs less than 60 feet LOA – 2 percent
- Pot C/Ps – 1.5 percent
- Jig vessels – 1.4 percent
- HAL CVs greater than or equal 60 feet LOA - 0.2 percent

The current allocations were the result of Amendment 85 to the FMP for Groundfish of the BSAI Management Area which were effective January 1, 2008. The following is the Amendment 85 problem statement:

> *The BSAI Pacific cod fishery is fully utilized and has been allocated among gear groups and to sectors with gear groups. The current allocation among trawl, jig, and fixed gear were implemented in 1997 (Amendment 46) and the CDQ allocation was implemented in 1998. These allocations are overdue for review. Harvest patterns have varied significantly among the sectors*

resulting in annual inseason reallocations of TAC. As a result, the current allocations do not correspond with actual dependency and use by sectors.

Participants in the BSAI Pacific cod fishery who have made significant investments and have a long-term dependence on the resource need stability in the allocations to the trawl, jig, fixed gear, and CDQ sectors. To reduce uncertainty and provide stability, allocations should be adjusted to better reflect historic use by sector. The basis for determining sector allocations will be catch history as well as consideration of socio-economic and community factors.

As other fisheries in the BSAI and GOA are incrementally rationalized, historical participants in the BSAI Pacific cod fishery may be put at a disadvantage. Each sector in the BSAI Pacific cod fishery currently has different degrees of license requirements and levels of participation. Allocations to the sector level are a necessary step on the path towards comprehensive rationalization. Prompt action is needed to maintain stability in the BSAI Pacific cod fisheries.

The Council's problem statement for Amendment 85 focused on revising the BSAI Pacific cod allocations to all sectors (trawl, jig, HAL, pot) to better reflect current harvest patterns which had varied significantly among the sectors since previous allocation actions. Participants in the BSAI Pacific cod fishery with significant investments and long-term dependence on the resource needed stability in the sector allocation. Under Amendment 85, allocations were adjusted to better reflect historic harvest by the sectors. The basis for determining the sector allocations was catch history, although the Council also considered socio-economic and community factors. It was also noted in the Amendment 85 problem statement that as other fisheries in the BSAI and Gulf of Alaska (GOA) were incrementally rationalized, historical participants in the BSAI Pacific cod fishery may have been put at a disadvantage, and sector allocations were a necessary step on the path toward comprehensive rationalization. In general, based on the final rule for Amendment 85 (which draws on the Council's problem statement for Amendment 85), the implicit objectives of the action were:

1. Establish allocations that more closely reflect historical use by the sectors than previously
2. Consider catch history, socioeconomic, and community factors to include allocations to small boat sectors to expand entry-level and local opportunities in the BSAI Pacific cod fishery
3. Reduce the need for inseason reallocations during the fishing year
4. Reduce uncertainty about the availability of yearly harvests within sectors caused by reallocations
5. Provide stability among sectors in the BSAI Pacific cod fishery

2.2 BSAI FMP Objectives

The Council has developed a management policy and objectives for the BSAI groundfish fisheries to guide its development of management recommendations to the Secretary of Commerce, which can be accessed at https://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf. From the comprehensive list of BSAI FMP objectives, below are those objectives that, according to staff judgement, apply to the BSAI Pacific cod allocation review.

Promote Sustainable Fisheries and Communities:

- Promote management measures that, while meeting conservation objectives, are also designed to avoid significant disruption of existing social and economic structures.
- Promote fair and equitable allocation of identified available resources in a manner such that no particular sector, group or entity acquires an excessive share of the privileges.

Promote Equitable and Efficient Use of Fishery Resources:

- Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.
- Develop management measures that, when practicable, consider the efficient use of fishery resources taking into account the interest of harvesters, processors, and communities.

3 BSAI Pacific cod environment

Pacific cod (*Gadus macrophalus*) is a demersal species found in the Eastern Bering Sea (EBS) and the Aleutian Islands (AI) . Pacific cod are distributed over the continental shelf at depths from shoreline to 500 meters. Mature fish tend to concentrate on the outer continental shelf and prefer muddy or sandy soft sediment substrate. Pacific cod are a relatively fast growing and short-lived fish. Longevity can extend to 19 years. Adults form spawning aggregations from January to May in the Bering Sea (BS).

In the EBS, the Pacific cod assessment is based on a Stock Synthesis model that uses both length-structured and age-structured data. This model incorporates fishery data and fishery-independent data from the NMFS EBS trawl survey. Three areas of the BS shelf have had survey observations, but the years varied. The EBS standard area has been surveyed annually from 1982-2018. Strata 82 and 90 have been surveyed annually since 1987, and when combined with the EBS standard area is noted as the "EBS expanded area". The survey index for the EBS expanded area declined from 2017 to 2018. The Northern Bering Sea (NBS), which includes the Northern Bering Sea Research Area, was surveyed in 2010 and 2017 and a rapid-response survey conducted in 2018 covered a truncated area in 2018 (see Figure 3-2). As noted in Figure 3-1, Pacific cod survey biomass continued to decline in 2018 by another 21 percent compared to 2017. In the NBS, the biomass almost doubled and was higher than what was surveyed in the South EBS (SEBS) (Figure 3-2). All combined, these 2018 survey estimates show a lower sampling density in the NBS and EBS which point to a decline in numbers of cod, but a slight increase in cod biomass in 2018 compared to 2017. Larger fish were observed in the NBS than in the EBS in 2018.

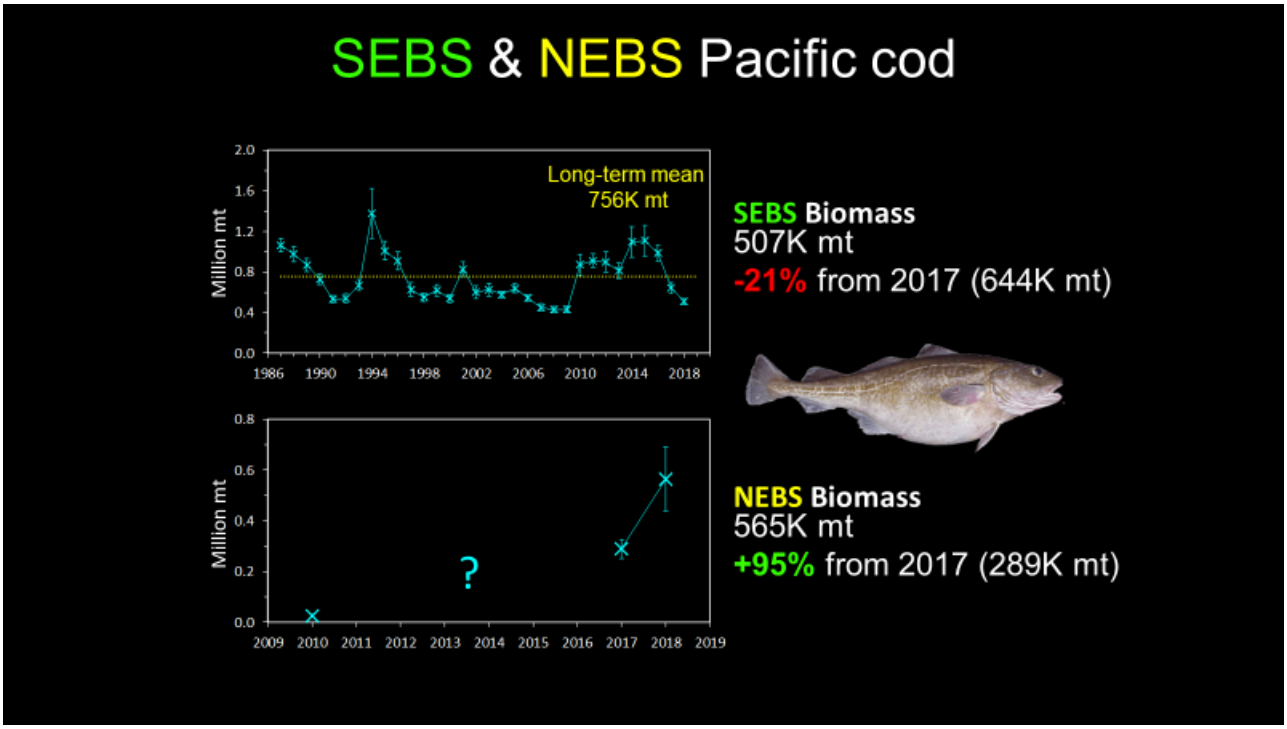


Figure 3-1 Survey biomass estimates for South EBS and North EBS

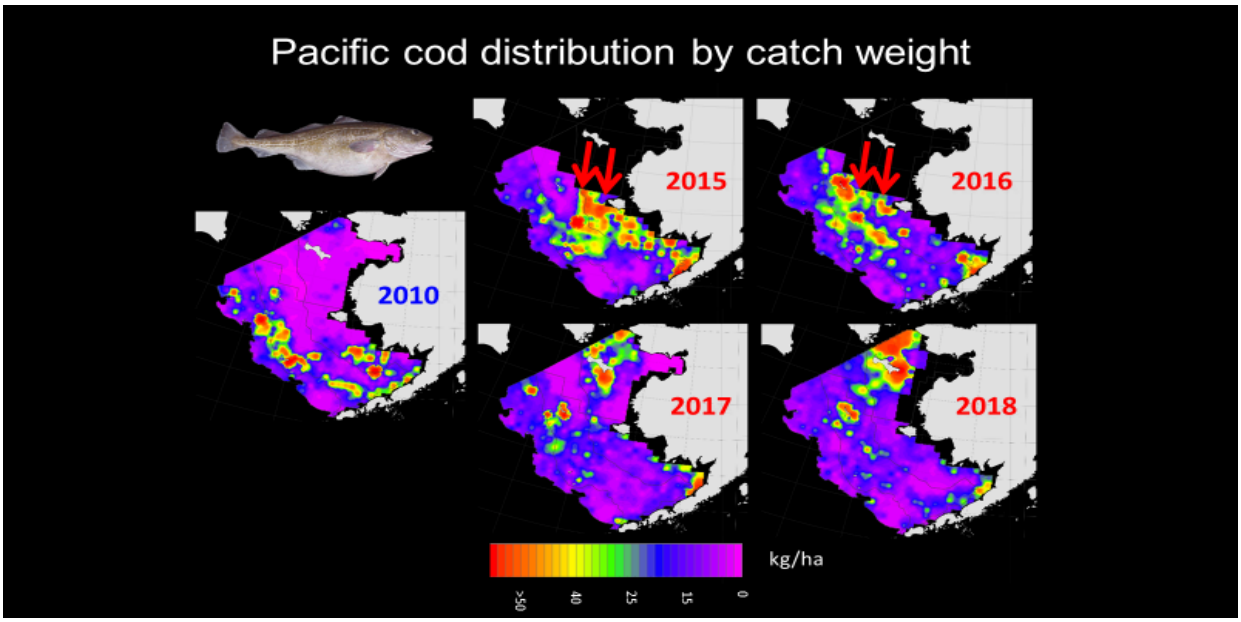


Figure 3-2 Bering Sea Pacific cod distribution by catch weight

As noted in the BSAI Groundfish Plan Team (Plan Team) November 13-16, 2018, minutes, there was some significant discussions surrounding the NBS survey results, what that implies about the population, and how it should be used in the assessment model. One hypothesis is that presence of Pacific cod in the NBS is unrelated to the EBS stock and management of the EBS Pacific cod stock should consider only EBS stock. Another hypothesis is that Pacific cod have the capability to migrate from the EBS to the NBS each year, and the stock extends over these two areas. A third, and related hypothesis was that the population in the EBS and the NBS may simply be a mixture of the same stock, or the Pacific cod in these two areas are sub-populations of the same stock with different life-history characteristics. Recent genetic studies have indicated that populations in the NBS are similar to spawning populations in the EBS (AFSC, 2018). The Plan Team discussed the potential validity of any of these three explanations for consideration in how to address the NBS observations in the assessment model but noted in their minutes that more observations (e.g., genetic studies, tagging) are needed to reject any of these hypotheses.

As further noted in the Plan Team November 13-16, 2018, minutes, if Pacific cod are undertaking an annual migration, that migration may occur at the same time as the survey, and there is possibility that the survey is double-counting some fish, making catchability greater than one. Also, catchability could be affected by the truncated area survey in 2018. It is believed that Pacific cod were observed by other surveys outside of the truncated area in 2018, and a bias in the 2018 estimate may be present. Investigating fishery catch per unit effort (CPUE) data throughout the year at specific locations may help understand migration patterns and the intersection of a migrating population with the survey.

The Plan Team expressed their considerable concerns with the overall observed population trends, population dynamics, and environmental/ecosystem conditions associated with EBS Pacific cod. Some of these concerns are provided below as summarized in the Plan Team minutes.

Population dynamics

- Recent low recruitments, and recent lowest observed. There may be a risk to assume that average recruitment may occur in immediate future years
- Continued decline in survey abundance (numbers), even summing EBS and NBS, although survey estimated biomass appears to possibly be constant in last 5 years
- Uncertainty in migration between EBS, NBS, and GOA
- Current distribution is unprecedented
- Uncertainty in mortality in the EBS and NBS areas, with recent environment trends

Environmental/ecosystem considerations

- Unprecedented lack of sea ice in the EBS and associated virtually absent cold pool (never seen before in the 37-year survey time-series)
- Delayed ice melt and spring bloom (1 month)
- Reduced primary and secondary production; lack of large copepods and Euphausiids
- Indications of continue poor conditions for recruitment and growth. Starving birds, low forage in South Bering, temperatures are exceedingly warm, transport of productivity and delay of bloom due to wind changes, continue warm conditions
- Reduced energic value and lipid content in lower trophic species that indicate poor food quality for 2019-2020
- Forecasts of continued warm conditions in SEBS (small cold pool forecasted for summer 2019) and continued marine heat wave (North EBS (NEBS))
- Multiple signs that the system is not productive
- Unprecedented extent and duration of sea bird die off and indications of insufficient prey species, and
- Although NEBS is more favorable than SEBS in terms of these indicators, the trends in NEBS are also deteriorating.

The stock assessment will continue to address observed distributional changes and how best to consider the recent environmental conditions. Further, similar environmental conditions are expected to persist in 2019 and the implications of these as it relates to the assessment and upcoming catch specifications will be discussed by the Plan Team and Science and Statistical Committee. A survey of the NBS is anticipated for the summer of 2019 and will provide additional information on relative population trends of Pacific cod in that region.

4 BSAI Pacific cod fishery

4.1 Management of the BSAI Pacific cod fishery

Pacific cod harvest specifications establish an over-fishing level (OFL), acceptable biological catch (ABC), and TAC for the BS subarea of the BSAI, and a separate OFL, ABC, and TAC for the AI subarea of the BSAI. Before the Pacific cod TACs are established, the Council and NMFS consider social and economic factors, and management uncertainty, as well as two factors that are particularly relevant to BSAI Pacific cod: Pacific cod GHL fisheries that occur in the State of Alaska (State) waters of the BSAI, and an overall limit on the maximum amount of TAC that can be specified for BSAI groundfish.

The State manages three GHL fisheries for Pacific cod, two that occur within State waters in the BS and one that occurs within State waters in the AI. Under current State regulations, each year the DHS GHL fishery for pot gear in the BS is set at 8 percent of the BS ABC with annual 1 percent increase, if 90 percent is harvested, until it reaches 15 percent of the BS ABC. The Board of Fish also created 100,000 lb. (just over 45 metric tons [mt]) GHL jig fishery in the DHS that will begin in 2019. The AI GHL fishery was set at 27 percent of the 2018 ABC specified for AI Pacific cod. The 2019 AI GHL was increased to 31 percent of the AI Pacific cod ABC, with annual 4 percent "step-up" provisions that increases the amount of the GHL fishery if it was fully (90 percent) harvested in the previous year. The AI GHL fishery can increase to a maximum of 39 percent of the AI ABC or to a maximum of 15 million pounds (6,804 mt), whichever is less. Pacific cod TACs are specified at levels that take into account the GHL fisheries so that the combined harvest limits from GHL fisheries and the TACs do not exceed the ABCs specified for the BS or AI. Section 2.3 of the December 2017 discussion paper[1] provides additional discussion of the GHL fisheries in the BSAI.

Once the TACs are established, regulations at § 679.20(a)(7)(i) allocate 10.7 percent of the Bering Sea Pacific cod TAC and 10.7 percent of the Aleutian Islands Pacific cod TAC to the CDQ Program for the exclusive harvest by Western Alaska CDQ groups. The remaining portion of TAC after deducting the 10.7 percent allocation for CDQ Program is the ITAC. For the HAL and pot gear sectors, NMFS estimates an incidental catch allowance (ICA) that will be deducted from the aggregate portion of Pacific cod TAC allocated to the HAL and pot gear sectors before the allocations to these sectors. For the 2019 BSAI Pacific cod fishery, the ICA was 400 mt.

After subtraction of the CDQ allocation from the BS and AI TACs, NMFS combines the remaining BS and AI TACs into one BSAI non-CDQ TAC, which is available for harvest by nine non-CDQ fishery sectors. Regulations at § 679.20(a)(7)(ii)(A) define the nine Pacific cod non-CDQ fishery sectors in the BSAI and specify the percentage allocated to each. The non-CDQ fishery sectors are defined by a combination of gear type (e.g., trawl, HAL), operation type (i.e., CV or C/P), and vessel size categories (e.g., vessels greater than or equal to 60 ft in length overall). Through the annual harvest specifications process, NMFS allocates an amount of the combined BSAI non-CDQ TAC to each of these nine non-CDQ fishery sectors. The nine non-CDQ fishery sectors and the percentage of the combined BSAI non-CDQ TAC allocated to each sector are shown in Table 4-1 by amendment since 1994.

NMFS manages each of the non-CDQ fishery sectors to ensure harvest of Pacific cod does not exceed the overall annual allocation made to each of the non-CDQ fishery sectors. NMFS monitors harvests that occur while vessels are directed fishing for Pacific cod (specifically targeting and retaining Pacific cod above specific threshold levels) and harvests that occur while vessels are directed fishing in other fisheries and incidentally catching Pacific cod (e.g., the incidental catch of Pacific cod while directed fishing for pollock). For the non-AFA trawl C/P sector, also known as the Amendment 80 sector, NMFS allocates exclusive harvest privileges to these vessels participating in an Amendment 80 cooperative and

[1] http://npfmc.legistar.com/gateway.aspx?M=F&ID=14769180-2558-4acc-9290-1facf916e0a7.pdf

prohibits them from exceeding their cooperative allocation. For other non-CDQ fishery sectors, NMFS carefully tracks both directed and incidental catch of Pacific cod. NMFS takes appropriate management measures, such as closing directed fishing for a non-CDQ fishery sector, to ensure that total directed fishing and incidental catch do not exceed that sector's allocation.

An allocation to a non-CDQ fishery sector may be harvested in either the BS or the AI, subject to the non-CDQ Pacific cod TAC specified for the BS or the AI. If the non-CDQ Pacific cod TAC is or will be reached in either the BS or AI, NMFS will prohibit directed fishing for Pacific cod in that subarea for all non-CDQ fishery sectors.

Allocations of Pacific cod to the CDQ Program and to the non-CDQ fishery sectors are further apportioned by seasons. In general, regulations apportion CDQ and non-CDQ fishery sector allocations among three seasons that correspond to the early (A-season), middle (B-season), and late (C-season) portions of the year. Depending on the specific CDQ Program or non-CDQ fishery sector allocation, between 40 percent and 70 percent of the Pacific cod allocation is apportioned to the A-season, historically the most lucrative fishing season due to the presence of valuable roe in the fish and the good quality of the flesh during that time of year. See Section 4.1.1 for more detailed information on seasonal allowances.

Table 4-1 Percent sector allocations by amendment and year implemented

<table>
<tr><th>Sector</th><th>Amend. 24
1994</th><th>Amend. 46
1997</th><th>Amend. 64
2000</th><th>Amend. 77
2004</th><th>Amend. 85
2008</th></tr>
<tr><td>Jig</td><td>2.0</td><td>2.0</td><td>2.0</td><td>2.0</td><td>1.4</td></tr>
<tr><td>HAL/pot CV <60 ft LOA</td><td rowspan="5">44.0</td><td rowspan="5">51.0</td><td>0.7</td><td>0.7</td><td>2.0</td></tr>
<tr><td>HAL CV ≥60 ft LOA</td><td>0.2</td><td>0.2</td><td>0.2</td></tr>
<tr><td>HAL C/P</td><td>40.8</td><td>40.8</td><td>48.7</td></tr>
<tr><td>Pot CV ≥60 ft LOA</td><td rowspan="2">9.3</td><td>7.6</td><td>8.4</td></tr>
<tr><td>Pot C/P</td><td>1.7</td><td>1.5</td></tr>
<tr><td>AFA trawl C/P</td><td rowspan="3">54.0</td><td rowspan="2">23.5</td><td rowspan="2">23.5</td><td rowspan="2">23.5</td><td>2.3</td></tr>
<tr><td>Non-AFA trawl C/P</td><td>13.4</td></tr>
<tr><td>Trawl CV</td><td>23.5</td><td>23.5</td><td>23.5</td><td>22.1</td></tr>
</table>

The allocation of Pacific cod among the CDQ Program and the nine non-CDQ fishery sectors, as well as the seasonal apportionment of those allocations, create a large number of separate sectoral-seasonal allocations. To help ensure the efficient management of these allocations, regulations allow NMFS to reallocate (rollover) any unused portion of a seasonal apportionment from any non-CDQ fishery sector

(except the jig sector) to that sector's next season during the current fishing year, unless the Regional Administrator determines a non-CDQ fishery sector will not be able to harvest its allocation.

Table 4-2 provides ABCs, TACs, and ITACs of BSAI Pacific cod from 2003 through 2013, and ABCs, TACs, and ITACs for BS Pacific cod and AI Pacific cod for 2014 and 2020.

Table 4-2 BSAI Pacific cod ABC, TAC, and ITAC 2003 to 2013 and BS and AI Pacific cod ABC, TAC, and ITAC 2014 and 2020 (amounts in metric tons)

Year	BSAI			BS[1]			AI[2]		
	ABC	TAC	ITAC	ABC	TAC	ITAC	ABC	TAC	ITAC
2003	223,000	207,500	191,938	N/A					
2004	223,000	215,500	199,338						
2005	206,000	206,000	190,550						
2006	194,000	194,000	174,067						
2007	176,000	170,720	157,916						
2008	176,000	170,720	152,453						
2009	182,000	176,540	157,650						
2010	174,000	168,780	150,721						
2011	235,000	227,950	203,559						
2012	314,000	261,000	233,073						
2013	307,000	260,000	232,180						
2014	N/A			255,000	246,897	220,479	15,100	6,997	6,248
2015				255,000	240,000	214,320	17,600	9,422	8,414
2016				255,000	238,680	213,141	17,600	12,839	11,465
2017				239,000	223,704	199,768	21,500	15,695	14,016
2018				201,000	188,136	168,005	21,500	15,695	14,016
2019				181,000	166,475	148,662	20,600	14,214	12,693
2020				137,000	124,625	111,290	20,600	14,214	12,693

Source: NMFS Final Specifications

[1]The BS Pacific cod TAC accounts for the GHL in State waters of the BS, which is 8% of the BS ABC as of 2019.

[2]The AI Pacific cod TAC accounts for the GHL in State waters of the AI, which is 31% of the AI ABC as of 2019.

4.1.1 Seasonal apportionment

BSAI non-CDQ Pacific cod allocations are managed at the BSAI level. Because there are no non-CDQ sector allocations specific to each area, there are no gear specific seasonal allowances by area. While the overall guideline for the BSAI Pacific cod fishery continues to be a 70:30 percent seasonal split, the seasonal allowances vary by gear type taking into account changes to the season dates from the Steller sea lion protection measures implemented in 2015. As background information, Table 4-3 provides a summary of the pot, HAL, jig, and trawl gear season dates and the percentage of the available TAC allocated to each season.

Table 4-3 BSAI non-CDQ Pacific cod seasonal allowances

Pot	Jan 1 – June 10 (51%), Sept 1 – Dec 31 (49%) Pot CVs <60' do not have seasonal allowances.	Trawl CV	Jan 20 – April 1 (74%), April 1 – June 10 (11%); June 10 – Nov 1 (15%)
HAL	Jan 1 – June 10 (51%), June 10 – Dec 31 (49%) HAL CVs <60' do not have seasonal allowances.	Trawl C/P	Jan 20 – April 1 (75%), April 1 – June 10 (25%); June 10 – Nov 1 (0%) (Amendment 80 changed to Dec 31 (0%) in 2015
Jig	Jan 1 – Apr 30 (60%) Apr 30 – Aug 31 (20%) Aug 31 – Dec 31 (20%)		

Table 4-4 provides the BSAI Pacific cod sector apportionment and BSAI Pacific cod seasonal allowance for the 2019 fishing year. Any unused portion of the seasonal allowance from any sector except the jig sector, will be reallocated to that sector's next season during the current fishing year unless Regional Administrator determines that sector will be unable to harvest its allocation. For the jig sector, the Regional Administrator will reallocate any projected unused portion of the C seasonal allowance of Pacific cod to the less than 60 ft. HAL/pot CV sector on or about September 1.

Table 4-4 BSAI non-CDQ Pacific cod sector apportionment and BSAI non-CDQ Pacific cod seasonal allowance for 2019

Sector	BSAI Sector Apportionment (mt)	BSAI Season allowance (mt)		
		A	B	C
H&L/pot < 60'	3,214	No seasonal allowance		
H&L CV≥ 60'	321	164	157	n/a
H&L CP	78,260	39,912	38,347	n/a
Pot CV ≥ 60'	13,499	6,884	6,614	n/a
Pot CP	2,410	1,229	1,181	n/a
Jig vessels	2,259	1,355	452	452
AFA trawl CP	3,711	2,783	928	0
Amendment 80	21,622	16,216	5,405	0
Trawl CV	35,660	26,388	3,923	5,349

Source: NMFS Final Specifications

4.1.2 Reallocations among gear types

With the exception of the jig sector, any unused seasonal apportionment to a particular sector is reallocated to the next seasonal allowance for that sector. This is the case for both CDQ and non-CDQ seasonal allocations. Near the end of the year, however, NMFS considers whether one or more (non-CDQ) sectors will not likely be able to use its remaining BSAI Pacific cod allocation. Federal regulations outline a system for reallocating sector allocations that is projected to remain unused by a particular (non-CDQ) sector near the end of the year (50 CFR 679.20(a)(7)(ii)(B)(iii)). Figure 4-1 depicts the BSAI Pacific cod reallocation hierarchy, and Table 4-5 provides reallocation amounts by sector for the 2008, 2009, 2017, and 2018 fishing year. The years selected in Table 4-5 was to show the first two years after implementation of Amendment 85 and contrast those two years with the most recent two years. In addition, see Appendix for reallocations amounts throughout the 2005-2018 time period by sector.

- From the jig or less than 60 ft HAL or pot CV sector reallocated first to the jig sector, or to the less than 60 ft HAL or pot CV sector, or to both of these sectors; second, to the greater than or equal to 60 ft HAL sector or to the greater than or equal to 60 ft pot CV sector; third to the trawl CV sector, last to the HAL C/P sector.
- From the greater than or equal to 60 ft pot CV sector, would be reallocated to the pot C/P sector and from the pot C/P sector to the greater than 60 ft pot CV sector, and then to the HAL C/P sector.
- From the trawl CV sector or AFA C/P sector to other trawl sectors before unharvested amounts are reallocated and apportioned to the following sectors:
    - 83.1 percent to the HAL C/P sector,
    - 2.6 percent to the pot C/P sector, and
    - 14.3 percent to the greater than or equal to 60 ft pot CV sector.

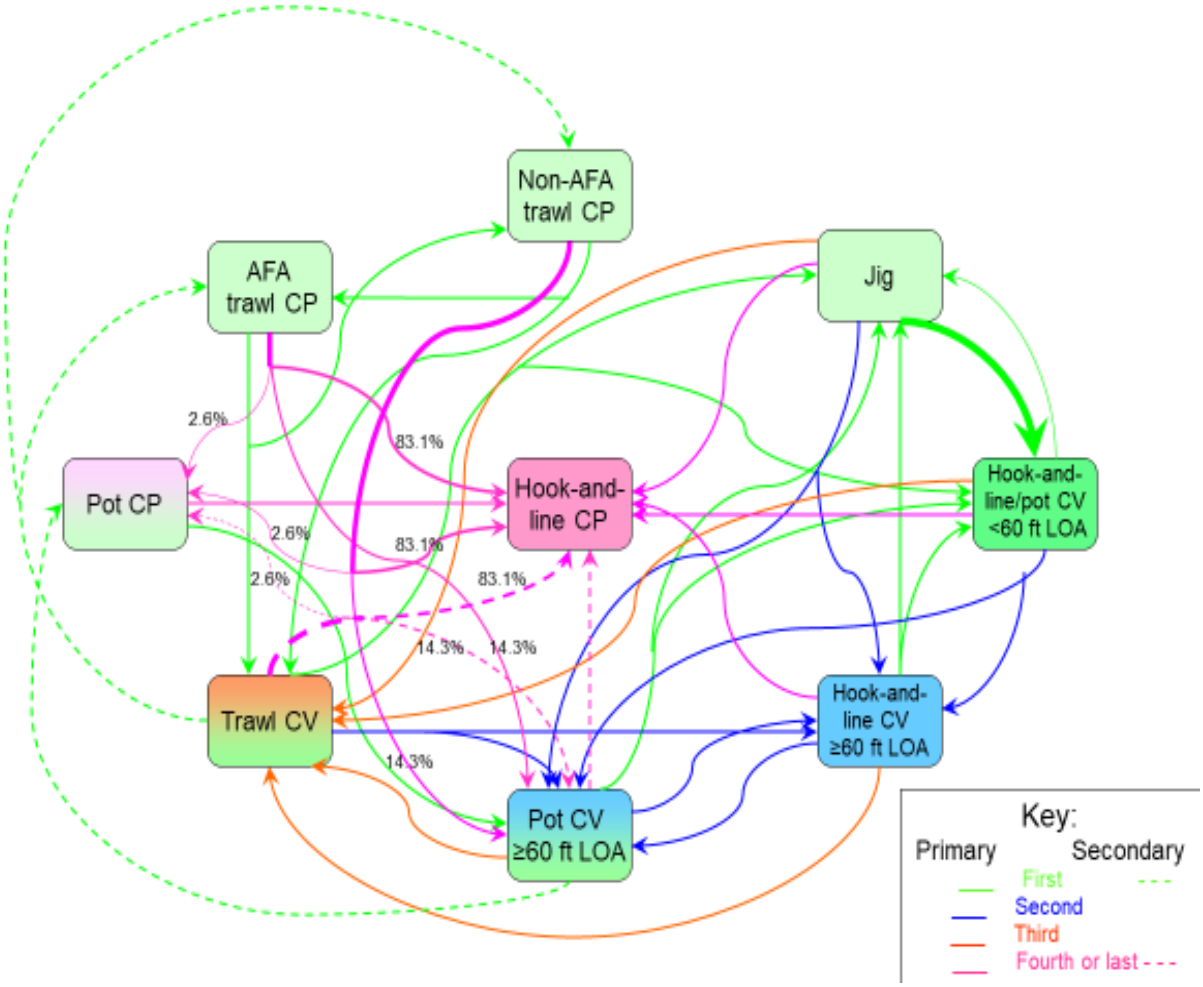


Figure 4-1 BSAI Pacific cod reallocation hierarchy

Table 4-5 BSAI Pacific cod initial allocation (mt), final allocation (mt), reallocation amounts (mt), and final allocation as a percent of initial allocation

Year	Sector	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation
2008	Trawl CV	33,692	30,842	-2,850	92%
	HAL CV ≥ 60	303	0	-303	0%
	Pot CV ≥ 60	12,737	11,422	-1,315	90%
	HAL/Pot CV < 60	3,033	5,210	2,177	172%
	Jig	2,134	180	-1,954	8%
	AFA C/P	3,506	4,706	1,200	134%
	AM80	20,429	20,429	0	100%
	Pot C/P	2,274	3,089	815	136%
	HAL C/P	73,844	76,074	2,230	103%
2009	Trawl CV	34,841	29,740	-5,101	85%
	HAL CV ≥ 60	314	2	-312	1%
	Pot CV ≥ 60	13,173	6,373	-6,800	48%
	HAL/Pot CV < 60	3,137	4,434	1,297	141%
	Jig	2,207	25	-2,182	1%
	AFA C/P	3,626	4,826	1,200	133%
	AM80	21,125	24,125	3,000	114%
	Pot C/P	2,352	3,550	1,198	151%
	HAL C/P	76,375	84,075	7,700	110%
2017	Trawl CV	47,246	44,163	-3,083	93%
	HAL CV ≥ 60	426	0	-426	0%
	Pot CV ≥ 60	17,889	13,889	-4,000	78%
	HAL/Pot CV < 60	4,259	9,271	5,012	218%
	Jig	2,993	13	-2,980	0%
	AFA C/P	4,917	4,712	-205	96%
	AM80	28,647	28,647	0	100%
	Pot C/P	3,194	4,999	1,805	157%
	HAL C/P	103,712	107,589	3,877	104%
2018	Trawl CV	40,227	38,027	-2,200	95%
	HAL CV ≥ 60	363	0	-363	0%
	Pot CV ≥ 60	15,235	15,235	0	100%
	HAL/Pot CV < 60	3,627	8,748	5,121	241%
	Jig	2,549	149	-2,400	6%
	AFA C/P	4,186	4,028	-158	96%
	AM80	24,391	24,391	0	100%
	Pot C/P	2,720	2,720	0	100%
	HAL C/P	88,324	88,324	0	100%

Source: NMFS, Sustainable Fisheries
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

4.1.3 Prohibited species catch management

The prohibited species catch (PSC) allowances are currently shared among the BSAI trawl and non-trawl fisheries, according to the guidelines outlined in 50 CFR 679.21. The species included in PSC include halibut, herring, red king crab, C. opilio Tanner crab, bairdi Tanner crab, salmon (divided into chinook and non-chinook). The non-chinook salmon harvested in the BSAI trawl fisheries are primarily chum

salmon. The Federal regulations provide a sequential process in allocating PSC in the BSAI fisheries. The PSC limit is allocated to the non-CDQ trawl and non-trawl fisheries operating in the BSAI and are allocated among the non-trawl and trawl fisheries groups through the annual harvest specifications process. The 2019 Pacific cod PSC limits for the BSAI trawl limited access sector are as follows: halibut mortality – 391 mt; red king crab – 2,954 animals; C. opilio – 105,182 animals; Zone 1 bairdi – 50,816 animals; and Zone 2 bairdi – 42,424 animals. The Pacific cod HAL fisheries have a halibut bycatch limit, which is 648 mt for C/Ps and 13 mt for CVs for a total 661 mt. The pot and jig sectors are exempt from PSC limits.

4.1.4 Overview of State water GHL fisheries

The State of Alaska has managed a GHL fishery for Pacific cod in State waters in the AI subarea since 2006 and in the DHS of the BS since 2014. The GHL fishery opens after the federal fishery closes to directed fishing. For the AI, the GHL was 3 percent of the Federal BSAI Pacific cod ABC from 2006 through the 2015 fishing season. Starting in 2016, the AI GHL changed to 27 percent of the AI ABC, with annual step-up provisions if the AI GHL is fully harvested to a maximum of 39 percent of the AI ABC. The annual step-up provision remains in place if the GHL is fully harvested. The GHL is considered fully harvested at 90 percent harvested. For 2019, the AI GHL was 31 percent of the AI ABC since the previous year's AI GHL was fully harvested. In addition, the Alaska Board of Fisheries (BOF) capped the AI GHL at a maximum of 15 million pounds (6,804 mt). At the BOF October 2018 meeting, the BOF included a four percent step-down provision if the AI GHL is not fully harvested (90 percent is considered fully harvested) during two consecutive calendar years. The GHL may not be reduced below 15 percent of the federal AI Pacific cod ABC.

While trawl, longline, pot, and jig gear are allowed at various times during the GHL fishery, overall, the majority of the AI GHL has been harvested by vessels using trawl and pot gear. Harvest information from the AI Pacific cod GHL fishery is confidential in recent years due to the number of participants in the processing sector. Table 4-6 summarize the state AI GHL participation, catch, and value for the years 2006 through 2018. Additional information on the AI GHL fishery can be found in the AI Pacific Cod Harvest Set-Aside Regulatory Impact Review (RIR) that addressed issues with Amendment 113 (NPFMC, 2018).

Table 4-6 Aleutian Islands state-waters Pacific cod fishery guideline harvest level and harvest from 2006-2018

Year	Season	Initial GHL[a]		Harvest[a]	Vessels		Landings	Average price per pound[b]	Fishery value[c]
2006	A season	4,074		3,857	26		68	$0.23	$1.30
	B-season	1,746	d	160	5		19	$0.38	$1.40
	TOTAL	5,820		4,017	30	e	87	$0.31	$2.70
2007	A season	3,696		3,733	27		97	$0.45	$3.60
	B-season	1,584	f	1,546	12		106	$0.52	$1.70
	TOTAL	5,280		5,279	39	e	203	$0.49	$5.30
2008	A season	3,696		3,392	30		116	$0.63	$4.50
	B-season	1,584	g	1,924	18		77	$0.57	$1.80
	TOTAL	5,280		5,316	45	e	193	$0.61	$6.30
2009	A season	3,822		2,512	22		50	NA	NA
	B-season	1,638	g	CF	5		47	CF	CF
	TOTAL	5,460		CF	27		97	CF	CF
2010	A season	3,654		3,610	16		84	$0.25	$1.60
	B-season	1,566	g	375	3		4	$0.32	$1.10
	TOTAL	5,220		3,985	16	e	88	$0.29	$2.70
2011	A season	4,935		CF	3		4	CF	CF
	B-season	2,115	g	CF	4		16	CF	CF
	TOTAL	7,050		270	6	e	20	CF	CF
2012	A season	6,594		5,199	21		201	$0.31	$3.60
	B-season	2,826	g	432	7		25	CF	CF
	TOTAL	9,420		5,598	26	e	226	CF	CF
2013	A season	6,447		CF	12		CF	CF	CF
	B-season	2,763	g	CF	1		CF	CF	CF
	TOTAL	9,210		4,792	13		151	CF	CF
2014	A season	5,672		CF	8		133	CF	CF
	B-season	2,431	g	0	0		0	$0.00	$0.00
	TOTAL	8,103		CF	8		133	CF	CF
2015	A season	5,725		CF	2		CF	CF	CF
	B-season	2,453	g	0	0		0	$0.00	$0.00
	TOTAL	8,178		CF	2		CF	CF	CF
2016		4,752	h	CF	6		39	CF	CF
2017		5,805	h	CF	3		84	CF	CF
2018		5,805	h	CF	13		132	CF	CF

Note: CF = Confidential
[a] In metric tons
[b] Price per pound of landed weight.
[c] Fishery value based on landed weight, in millions of dollars.
[d] ADF&G made 3.5 million pounds of the GHL available to National Marine Fisheries Service effective on September 1.
[e] Some vessels participated in both seasons.
[f] Overage from the A-season was deducted from the B-season GHL. Initial GHL shown.
[g] A-season GHL was not fully harvested, remaining A-season GHL rolled over into B-season GHL; initial GHL shown.
[h] Regulation changed to only one season for Aleutian Island Subdistrict state-waters Pacific cod.

During October 2013, the BOF created a state-waters Pacific cod fishery management plan for the Bering Sea near Unalaska/Dutch Harbor.[2] A summary of the regulations is provided in Table 4-7. The DHS GHL fishery for Pacific cod occurred in State waters between 164 degrees and 167 degrees west longitude until

[2] https://www.psmfc.org/tsc-drafts/2017/ADFG_2017_AK_TSC_Alaska_FINAL.pdf

2019. At the BOF October 2018 meeting it expanded the area to include waters between 162.30 and 167 west longitude. The fishery is open to vessels 58 feet or less overall length using pot gear, with a limit of 60 pots per vessel. The season opens seven days after the federal BSAI < 60 ft pot/HAL sector's closure, and may close and re-open as needed to coordinate with federal fishery openings.[3] The fishery is not opened to jig gear because the federal jig season typically occurs year-round, so there has historically been no benefit to having a separate GHL state-waters fishery.

The DHS state-waters Pacific cod fishery is in an exclusive registration area for pot gear but not jig gear. Vessels that register for the DHS state-waters Pacific cod pot gear fishery may not register for any other exclusive or super exclusive state-waters Pacific cod fishery that year but may participate in a nonexclusive state-waters Pacific cod fisheries. Vessels that have registered for any other exclusive or super exclusive state-waters Pacific cod season outside of the DHS that year may not participate in the DHS state-waters Pacific cod fishery. Exclusive registration does not apply to federal or parallel Pacific cod fisheries. Jig gear vessels may register and fish in other areas for Pacific cod if they are registered to take Pacific cod with a mechanical jigging machine in the DHS.

[3] The 2018 season opened on January 30 and was closed on March 1 because the GHL was projected to be taken.

Table 4-7 Dutch Harbor Subarea state-waters Pacific cod (GHL) fishery

Area	DHS state-waters opens	DHS state-waters closes	Gear	Vessel length
Dutch Harbor Subarea pot gear GHL	• The DHS state-waters Pacific cod season will open by emergency order 7 days after closure of the initial federal BSAI Pacific cod season for the < 60' HAL and pot gear CV sector. • If GHL Pacific cod are available when the federal BSAI Pacific cod < 60' HAL/pot gear CV sector closes after harvesting any reallocation, the DHS state-waters Pacific cod season may reopen. • The DHS is defined as waters between 162.30 and 167 west longitude	• When the GHL is taken or at the regulatory season closure date (December 31) whichever occurs first. • If the federal BSAI Pacific cod < 60' HAL/pot gear CV sector receives a TAC reallocation and is reopened, the DHS state-waters Pacific cod season may close.	• Pot gear vessels using 60 or fewer pots unless the Commissioner modifies regulations after October 1. • DHS is an exclusive registration area for Pacific cod and participants must purchase buoy tags and attach a tag to each pot prior to fishing.	58' or less overall length, unless modified by ADF&G news release after October 1.
Dutch Harbor Subarea jig gear GHL	• May 1 opens a 100,000 lb. fishery	• When the GHL is taken or at the regulatory season closure date (December 31) whichever occurs first.	• Jig gear with a limit of 5 jigging machines. • The limit on the number of jigging machines may be lifted by the commissioner any time after October 1, to allow the fleet to harvest the GHL.	58' or less overall length

Source: http://www.adfg.alaska.gov/FedAidPDFs/FMR18-05.pdf

The DHS fishery was first opened to fishing in 2014. State regulations provided for a GHL of 3 percent of the BSAI Pacific cod ABC, which was subtracted from the BS ABC before calculating the BS TAC. Starting in 2016, the Alaska Board of Fisheries changed the DHS GHL calculations to align with the split of the Federal BSAI Pacific cod stock into separate BS and AI stocks. As part of those modifications, the DHS GHL was changed to 6.4 percent of the BS ABC. The DHS GHL was changed again at the October 2018 BOF meeting. The DHS GHL was increased to 8 percent of the BS ABC starting in the 2019 fishery. If the GHL is fully harvested (90 percent is considered fully harvested), the limit is then increased by 1 percent of the BS ABC each year until it reaches 15 percent in 2026. The 15 percent GHL would continue unless changed by the BOF.

The GHL amount and reported harvest from that fishery are reported in Table 4-8. All of the catch is delivered to shoreside plants since it is harvested by pot vessels that are less than or equal to 58 ft. A total of 32 pot gear vessels participated in the fishery in 2018.

Table 4-8 Pacific cod harvest (lbs.) with pot gear in the State of Alaska DHS Guideline Harvest Level Pacific cod fishery, 2014 through 2018

	GHL		Harvest		%
Year	Pounds	mt	Pounds	mt	Harvested
2014	17,863,874	8,103	17,666,510	8,013	98.9%
2015	18,029,404	8,178	17,636,103	8,000	97.8%
2016	35,979,072	16,320	35,519,920	16,112	98.7%
2017	33,721,562	15,296	33,247,414	15,081	98.6%
2018	28,360,000	12,864	29,055,603	13,180	102.5%

Source: Personal communication with ADF&G, September 5, 2017 and ADF&G website.

The BOF also created a 100,000 lb. (45 mt) GHL jig fishery for Pacific cod in the DHS. That fishery will begin May 1, 2019. The DHS jig gear fishery is not a super-exclusive fishery, so persons may register and fish that fishery and other State fisheries for Pacific cod. Because the fishery will open for the first time in 2019, no information is available on past participation or harvest.

Pacific cod may only be harvested with pot gear in one DHS GHL fishery and jig gear in the other. Because they are pot or jig gear fisheries, the primary direct impact to the BS trawl CV Pacific cod fishery is through a reduction to the ABC that is available prior to setting trawl CV TAC.[4] Once the DHS GHL for pot gear reaches 15% of the BS ABC it equates to a 134% increase in the GHL allocation, in GHL percent allocation, relative to 2018. In poundage terms, the 2018 (6.4 percent) GHL was 28.36 million lbs. (12,864 mt).

The combined increases in the GHL for the AI and the BS and the creation of the new 45 mt jig gear GHL have a reciprocal reduction in the amount of available BSAI Pacific cod for each sector that participates in the federal BSAI Pacific cod fishery. Table 4-9 shows the reduction in the federal BSAI Pacific cod TAC by sector as a result of the 2019 GHL increases. As noted in Section 4.2.4, the sector that benefits the most from the increase in GHL is the HAL/Pot CV < 60 ft, which has increased their participation in the GHL fisheries in recent years. For other sectors, the increase in the GHL represents a reduction in their federal non-CDQ BSAI Pacific cod allocation, which would reduce revenue and could compress fishing seasons.

Table 4-9 Total decrease in 2019 non-CDQ total BSAI TAC by sector due to new 2019 GHLs

Sectors	Reduction in 2019 non-CDQ total BSAI TAC (mt) due to new 2019 GHL
Trawl CV	743
HAL CV ≥ 60	7
Pot CV ≥ 60	282
HAL/Pot CV < 60	67
Jig	47
AFA C/P	77
AM80	451
Pot C/P	50
HAL C/P	1,637
Total	**3,362**

Source: NMFS, Sustainable Fisheries

[4] After October 1, if a substantial portion of the state-waters GHL remains unharvested and the GHL is unlikely to be achieved by December 31, gear limits, vessel size restrictions, and exclusive registration requirements may be removed. All inseason management actions will be announced by ADF&G news release.

4.1.5 State Pacific cod parallel fishery

In the BS and AI, vessels can fish inside state waters under federal TACs. This is called a parallel fishery. Vessels can participate in a parallel fishery with or without federal permitting (federal fishery permit (FFP) or License Limitation Program (LLP) with their harvest deducted from federal TACs (which are allocated between vessel length, gear type, and C/Ps vs CVs). When allowing these vessels to harvest federal TAC in parallel waters, the State does not differentiate between CVs and C/Ps so vessels can participate in the parallel fishery as long as either the C/P or CV federal sector is open for the gear type and vessel length.

Because the State is unable to differentiate between a C/P and a CV during the federal fisheries there is currently a fishing opportunity that allows some federally permitted vessels to continue to participate in the parallel fishery even though their federal sector has already been closed. The State will allow, for example, a CV to continue to fish for Pacific cod in the parallel fishery if a C/P sector of the same gear type and vessel size allowance is open. However, usually the State does not have GHLs fisheries open at the same time as vessels participating in the parallel fishery, and all catch (both from federally permitted and non-federally permitted vessels) is being deducted from a federal TAC. Although this fishing opportunity applies to any fishery and all vessel types, it is mostly the BSAI under 60 ft HAL CVs harvesting Pacific cod that have participated. This is due to the BSAI federal HAL C/P sector being open. The HAL C/P sector has a larger allocation and is managed under a voluntary cooperative so generally the sector remains open all year. However, when an under 60 ft HAL CV participates in the parallel after their federal sector (BSAI under 60 ft HAL/pot CV sector) is closed, all harvest is still accruing towards the federal BSAI under 60 ft HAL/pot CV sector and not the HAL C/P sector allocation.

In addition, there are several other NMFS and State regulations that govern these parallel fisheries and affect which vessels can participate in this parallel fishery. NMFS has regulation in the BSAI that states that any federally permitted HAL and pot C/P participating in Pacific cod fisheries must have the corresponding LLP and must stop fishing in both federal and parallel fisheries once their sector closes. This prevents any federally permitted HAL and pot C/Ps from participating in the Pacific cod parallel fishery once closed to sector. Similarly, NMFS has regulations in the GOA that state that any federally permitted vessel in the GOA participating in Pacific cod must have the corresponding LLP and stop fishing in parallel waters when their sector closes. In the GOA, this applies to all Pacific cod sectors. This prevents all vessels in the GOA with FFPs from taking advantage of this parallel fishery opportunity. In the BSAI, the State of Alaska has a regulation restricting HAL vessels over 58 feet from participating in the Pacific cod fisheries in parallel waters. In the GOA, the State limits all vessels participating in the Pacific cod fishery to 58 feet and under in parallel waters in the South Peninsula and Chignik management areas (which include all of the Western GOA and a small portion in the west of the Central GOA). These State regulations prevent some larger vessels from taking advantage of the loophole.

The only BSAI federal Pacific cod sector that has only one allocation is the under 60 ft HAL/pot CVs. This sector is only given an annual allocation that opens January 1, compared to all other sectors which have multiple allocations spread out over several seasons. When this allocation is fully harvested, their sector is closed. The under 60 ft HAL/pot CV sector only has a federal reopening if there is quota available to reallocate from other sectors. Normally this reallocation happens in February/April and September and comes from one of four other sectors: the jig sector, greater than 60 ft HAL CV sector, the greater 60 ft pot CV sector, and the CV trawl sector. If under 60 ft HAL/pot CVs have participated in the current BSAI parallel fishery, then Pacific cod reallocations must first cover any overages harvested by these vessels in that fishery before a consideration can be made to re-open the entire federal BSAI under 60 ft HAL/pot CV sector.

4.1.6 Overview of AI Pacific cod set-aside for shoreside processors

In October 2015, the Council recommended a management measure to provide stability to AI shoreplant operations and the communities dependent on shoreside processing activity by prioritizing a portion of the AI Pacific cod TAC for access by CVs delivering their AI Pacific cod catch to shoreplants in the AI. The Secretary of Commerce (SOC) approved the Council's recommendation (Amendment 113) which had an effective date of November 23, 2016. The amendment modified the management of the BSAI Pacific cod fishery to set aside a portion of the AI Pacific cod TAC for harvest by CVs directed fishing for AI Pacific cod and delivering their catch for processing to a shoreside processor located on land west of 170° W. longitude in the AI. The harvest set-aside applies only if specific notification and performance requirements are met, and only during the first few months of the fishing year. This harvest set-aside provides the opportunity for vessels, AI shoreplants, and the communities where AI shoreplants are located to receive benefits from a portion of the AI Pacific cod fishery. The notification and performance requirements preserve an opportunity for the complete harvest of the BSAI Pacific cod resource if the set-aside is not fully harvested.

In February 2018, the Council identified a regulatory issue that runs counter to the intent of providing community protections in the AI. Since the AI Unrestricted Fishery and the AI CV Harvest Set-Aside are administered simultaneously, the AI Pacific cod catch that is delivered to offshore or non-AI shoreplants by trawl CVs is deducted from both the AI Unrestricted Fishery and the BS Trawl CV Limitation. The deduction of AI Pacific cod delivered to offshore processors or non-AI shoreplants from the BS Trawl CV Limitation runs counter to the intent of the Council to provide stability to AI shoreplant operations and the communities that are dependent on shore processing activity. The BS Trawl CV Limitation was intended for use by trawl CVs for harvest and delivery of AI Pacific cod from the AI CV Harvest Set-Aside to AI shoreplants.

In April 2018, the Council developed a purpose and need statement and requested that staff develop an analysis of three action alternatives to adjust Amendment 113 regulations implementing the AI Pacific cod set-aside for CVs delivering to shoreplants in the AI to prioritize the AI Pacific cod CV harvest set-aside fishery before the AI unrestricted fishery for the trawl CV sector. In December 2018, the Council recommended to the Secretary of Commerce to modify Amendment 113 so that harvest by the trawl CVs from the AI Unrestricted Fishery will not be included in the BS trawl CV A-season Sector Limitation when determining the closure of the BS subarea. In other words, under the preferred modification to Amendment 113, the BS trawl CV A-season sector would close once the harvest from the BS Pacific cod fishery and Unrestricted AI Pacific cod fishery by trawl CVs was equal to the amount of BS Pacific cod that remains after deducting the BS Trawl CV A-season Sector Limitation from the BSAI trawl CV sector A-season allocation listed in the annual harvest specifications. In addition, the modification of Amendment 113 would prohibit trawl CVs from participating in the AI Unrestricted Fishery once the BS trawl CV A-season sector fishery closes to directed fishing. All other regulations associated with Amendment 113 would remain unmodified.

On December 21, 2016, several trade associations and commercial fishing operations filed a complaint challenging the rule adopting Amendment 113 arguing that the it exceeded the NMFS's statutory authority under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Administrative Procedure Act. On March 21, 2019, the U.S. District Court determined that NMFS did not exceed its statutory authority in imposing a harvest set-aside with an onshore delivery requirement, it nonetheless determined that NMFS failed to demonstrate that the amendment satisfied the requisite standards for such regulatory measures set forth by the MSA. The Court vacated the rule implementing Amendment 113 and remanded the amendment to NMFS for reconsideration consistent with the opinion.

Prior to the ruling of the U.S. District Court, the AI Pacific cod set-aside was utilized for the 2018 and 2019 fishing years. For the 2018 fishing year, 28 percent of the 21,500 mt AI Pacific cod ABC was

assigned to the State GHL fishery and the remaining 73 percent of the ABC was assigned to the federal fishery as the TAC. The GHL and federal longline gear fisheries opened on January 1, 2018. Several less than 60' pot CVs participated in the State AI GHL fishery and delivered to an AI shoreplant. Some greater than or equal to 60' pot CVs arrived about a week after the start date (January 4th and January 8th) and participated in the federal Pacific cod fishery. On January 19, 2018, BSAI Pacific cod directed fishing closed for pot CVs greater than or equal to 60'. On January 23, 2018, BSAI Pacific cod directed fishing closed for CV less than 60' using HAL/pot gear. The AI shoreplant did not take deliveries of any Pacific cod deducted from the federal TAC by the CVs less than 60' HAL/pot sector.[5]

On January 20, 2018, the federal BSAI non-CDQ Pacific cod trawl CV fishery opened to directed fishing. Many of the trawl CVs arrived in the AI after participating in the BS fisheries as well as some of the smaller CVs from the Western GOA. The trawl CVs began fishing for the AI shoreplant in early February. Directed fishing closed on February 11, 2018 for the BS non-CDQ Pacific cod trawl CV sector to prevent exceeding the 2018 BS trawl CV A-season sector limitation. The limited deliveries by pot vessels from the federal Pacific cod fisheries and the late arrival of the trawl fleet created some concern that the 1,000 mt AI minimum requirement would not be reached by February 28th. However, the shoreplant was able to reach the required amount and the 5,000 mt set-aside remained in effect.

Since there was 6,515 mt of AI Pacific cod that was available as unrestricted, two companies made plans to harvest a portion of that allowance and deliver the catch to processors other than AI shoreplants. One company was using its CV to deliver to one of its C/Ps. However, this occurred during the February 2018 Council meeting, and when the Council was made aware of the issue with Amendment 113, the Council asked this company to not participate in the unrestricted fishery, due to the impacts to the AI shoreplant. This company had already taken a small amount of AI Pacific cod, but they agreed to stand-down from the fishery at the request of the Council. After the 2018 A-season was underway, a second company requested that their CVs be allowed to deliver to the AI shoreplant. In part due to capacity constraints and the timing of the request, the AI shoreplant did not offer a market to those CVs. The company instead decided to have some of its trawl CVs AI Pacific cod delivered to Unalaska/Dutch Harbor.

CVs that were delivering to the AI shoreplant are reported to have self-imposed trip limits and a one-day stand-down after a delivery to help reduce wait times for processing at the plant. Trawl CVs set the trip limit at 400,000 lbs. for the larger CVs and 100,000 lbs. for smaller CVs. These trip limits were abandoned when NMFS announced the BSAI A season trawl CV closure for March 4, 2018, which resulted in a larger volume of Pacific cod being delivered during a short period of time.

Once trawl CVs harvested an amount that was projected to be equal to the BSAI trawl CV sector A-season allowance, they are closed to directed fishing, which in 2018 was on March 11. Catch in the AI set-aside and unrestricted fishery resulted in the trawl CV sector AI season being closed in the BSAI prior to the entire 5,000 mt AI set-aside being delivered. That meant the only CV sector that remained open[6] to directed fishing was the BSAI jig gear sector. The BSAI allocation to the jig sector was insufficient to allow the AI shoreplant to take deliveries of the remaining 5,000 mt AI set-aside.

NMFS announced that the 5,000 mt AI set-aside had not been landed at the AI shoreplant by March 15th. Because the 5,000 mt AI set-aside was not reached by that date the BS non-CDQ trawl CV A-season sector limitation remained in effect until March 21 and the AI set-aside did not apply for the remainder of

[5] NMFS did reapportion 1,400 mt from the jig sector to the <60' HAL/pot sector on February 6th, but the <60' HAL/pot sector in federal waters may not reopen until September 1st.

[6] The <60' HAL/pot Pacific cod fishery was closed to directed fishing in the BSAI on January 23. On February 6, NMFS reallocated 1,400 mt of the jig A-season allocation to the < 60' HAL/pot sector. That reduced the total A-season jig allowance to 129 mt. The 510 mt B-season jig allowance became available on April 30th.

the year. The amount of the 5,000 mt AI set-aside that was delivered to the AI shoreplant in 2018 cannot be reported due to confidentiality restrictions.[7]

The BSAI Pacific cod non-CDQ trawl CV B-season opened to directed fishing on April 1. The 2018 B-season allowance was set at 4,425 mt at the start of the fishing year. Directed fishing was closed on April 3 as a result of the B-season allowance being reached. The AI shoreplant took Pacific cod deliveries during the B-season. However, as was the case for the A-season, confidentiality restrictions prohibit reporting the amount of catch delivered to the AI shoreplant relative to other processors.

For the 2019 fishing year, one AI shoreplant notified the NMFS that they would be participating in the 2019 Pacific cod season. For 2019, the AI Pacific cod directed fishing allowance (DFA) was set at 10,193 mt. The DFA was specified as 5,193 mt for the AI unrestricted fishery and 5,000 mt for the AI CV harvest set-aside for delivery to AI shoreplants. Vessels participated in both the BS and AI areas for the federal Pacific cod CV greater than or equal to 60 feet pot fishery and the CV less than 60 feet pot/hook-and-line fishery beginning on January 1, and deliveries were made in both the BS and AI. The CV less than 60 feet pot/hook-and-line sector closed on January 12, and the CV greater than or equal to 60 feet pot gear sector closed on January 15. The closures for both sectors applied to both the BS and the AI.

The BSAI CV trawl sector for Pacific cod opened on January 20 with an overall sector TAC of 26,388 mt. Vessels participated in both the BS and the AI beginning in January. The BS subarea closed on February 1 after achieving the Bering Sea trawl limitation (BSAI CV trawl TAC minus 5,000 mt to be harvested from the AI). Although the new regulation was still not in place for 2019, industry agreed not to participate in the AI unrestricted fishery if it cut into the 5,000 mt set-aside established for AI shoreplants. However, there was some fish remaining in the trawl fishery over the 5,000 mt needed for AI shoreplants to achieve the full set-aside. As a result, some unrestricted fishing did occur in the AI after the closure of the BS, but it did not affect the AI shoreplant's ability to achieve the full set-aside amount.

On February 21, the NMFS announced that AI shoreplants had landed the 1,000 mt necessary to keep the set-aside regulations in place after February 28. As a result, the set-aside regulations remained in effect until March 15 and the BS CV trawl limitation would remain in effect until the set-aside was achieved or until March 21, whichever came first. On March 15, the NMFS announced that AI shoreplants had not landed the full 5,000 mt set-aside. As a result, the BS CV trawl limitation would remain in effect until March 21. Although shoreplants did not land the full set-aside amount by March 15, the CV trawl Pacific cod fishery in the AI remained open until March 16. The CV trawl Pacific cod B season opened on April 1 and closed on April 2 for a 24-hour fishery. Vessels participated in both the BS and AI and harvest was landed in both areas. Pacific cod harvest landed to the AI shoreplant is confidential.

4.1.7 License Limitation Program

The NMFS Alaska Region website provides a summary of the LLP[8]. As of January 1, 2000, a Federal LLP license is required for vessels participating in directed fishing for LLP groundfish species in the BSAI or GOA. A vessel must be named on an original LLP license that is onboard the vessel. The LLP is authorized in Federal regulations at 50 CFR 679.4(k), definitions relevant to the program are at 679.2, and prohibitions are at 679.7.

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[7] Golden Harvest Alaska Seafood, LLC in a public comment letter to the NPFMC in April 2018 noted that "landings from the Federal fishery were 4,010 mt; or about 80% of the AI CV Harvest Set Aside." http://comments.npfmc.org/CommentReview/DownloadFile?p=48236946-a5e9-42fa-977a-b723217e1a66.pdf&fileName=GHAS%20to%20NPFMC%20033018.pdf

[8] https://alaskafisheries.noaa.gov/fisheries/llp

The LLP license requirement is in addition to all other permits or licenses required by federal regulations. The LLP is a Federal program and LLP licenses are not required for participation in fisheries that occur in the waters of the State of Alaska. Vessels that do not exceed 26 feet in Length Overall (LOA) are exempt from the LLP in the GOA.

In the BSAI, beginning January 1, 2003, vessels that are ≥ 60 ft engaged in directed fishing for BSAI Pacific cod in the Federal fisheries using fixed gear must have an area endorsement, non-trawl endorsement, and operation type specific Pacific cod endorsement on the LLP license that names the vessels. It was intended to provide a mechanism that would further limit entry into the fishery by fixed gear vessels that have not participated or have participated at a level that would constitute significant dependence on the fishery.

Table 4-10 is a matrix of the endorsements associated with the BSAI LLP licenses for 2018. This table summarizes the number of LLP licenses eligible for use on a vessel to harvest BS and AI Pacific cod in the directed federal fishery by the different gears and operation. For example, the table shows that there are 49 LLP licenses that have an endorsement for BS, Pacific cod, CV, and pot gear. Of those 49 LLP licenses with these endorsements, 2 have AI endorsement and 1 has BS HAL endorsement.

Table 4-10 Number of LLP licenses issued for the BSAI by endorsement for 2018

Sector	Sum of AI_C/P_PCOD_HAL2	Sum of BS_C/P_PCOD_HAL2	Sum of AI_C/P_PCOD_POT2	Sum of BS_C/P_PCOD_POT2	Sum of AI_CV_PCOD_HAL2	Sum of BS_CV_PCOD_HAL2	Sum of AI_CV_PCOD_POT2	Sum of BS_CV_PCOD_POT2	Sum of AI_TRAWL_C/P2	Sum of BS_TRAWL_C/P2	Sum of AI_TRAWL_CV2	Sum of BS_TRAWL_CV2	Sum of A802	Sum of AFA
AI_C/P_PCOD_HAL	34													
BS_C/P_PCOD_HAL	34	36												
AI_C/P_PCOD_POT	3	3	5											
BS_C/P_PCOD_POT	3	3	5	8										
AI_CV_PCOD_HAL	0	0	1	1	8									
BS_CV_PCOD_HAL	0	0	1	1	7	8								
AI_CV_PCOD_POT	0	0	0	0	0	0	3							
BS_CV_PCOD_POT	0	0	0	0	0	1	2	49						
AI_TRAWL_C/P	0	0	0	0	0	0	0	0	50					
BS_TRAWL_C/P	0	0	0	0	0	0	0	0	49	58				
AI_TRAWL_CV	0	0	0	0	1	0	0	0	0	0	43			
BS_TRAWL_CV	0	0	0	0	0	0	0	0	0	0	42	114		
A80	0	0	0	0	0	0	0	0	19	26	0	0	26	
AFA	0	0	0	0	0	0	0	0	25	27	42	98	0	128

Source file: LLPs (4-29-19)

4.2 Sector profiles

This section provides an overview of the BSAI Pacific cod fishery from 2005 through 2018 at the sector level. For each sector, a dashboard was prepared that includes six figures representing historical information. Reading from top left to top right, the first figure in the dashboard provides initial and final BSAI Pacific cod allocations, total BSAI Pacific cod catch (including incidental catch), and total catch as a percent of the initial allocation. Sectors with a total catch of BSAI Pacific cod greater than 100 percent of their initial allocation are typically harvesting BSAI Pacific cod that was reallocated from another sector. The next figure in the dashboard includes a vessel count and total catch (including incidental catch) for the federal BSAI Pacific cod fishery, the CDQ Pacific cod fishery, and the State AI and BS Pacific cod GHL fishery combined. The third figure in the dashboard is the sector's gross exvessel value for BSAI Pacific cod (for CVs), gross first wholesale value for BSAI Pacific cod, and total gross revenue for all fisheries combined. Also included in the value figure is the percent of gross exvessel value for BSAI Pacific cod relative to the total gross revenue of all fisheries for CVs, while for C/Ps and shoreplants the figure includes the percent of gross first wholesale value for BSAI Pacific cod relative to the total gross revenue for all fisheries. The fourth figure (bottom left) in the dashboard is halibut PSC mortality. The last two figures in the dashboard show community information. The first community figure shows the number of deliveries by vessel with directed BSAI Pacific cod onboard the vessel and the number of communities that received deliveries from CVs for 2007 and 2018. Since C/Ps, in most cases, processes their own harvested BSAI Pacific cod, the figure shows the number of port calls by community, which can be useful since port calls are used to change out crew, purchase provisions and fuel, offload product, and purchase other local goods and services. Analysts could not include in the dashboard information on the number of deliveries by community since that information shows processing activity and since most of the communities in the BSAI have only one processor (except Unalaska/Dutch Harbor and Kodiak) the information is confidential. The last figure shows vessel ownership by address (city) from 2005 through 2018. See the Appendix for data tables used to construct the dashboards.

4.2.1 Trawl CV

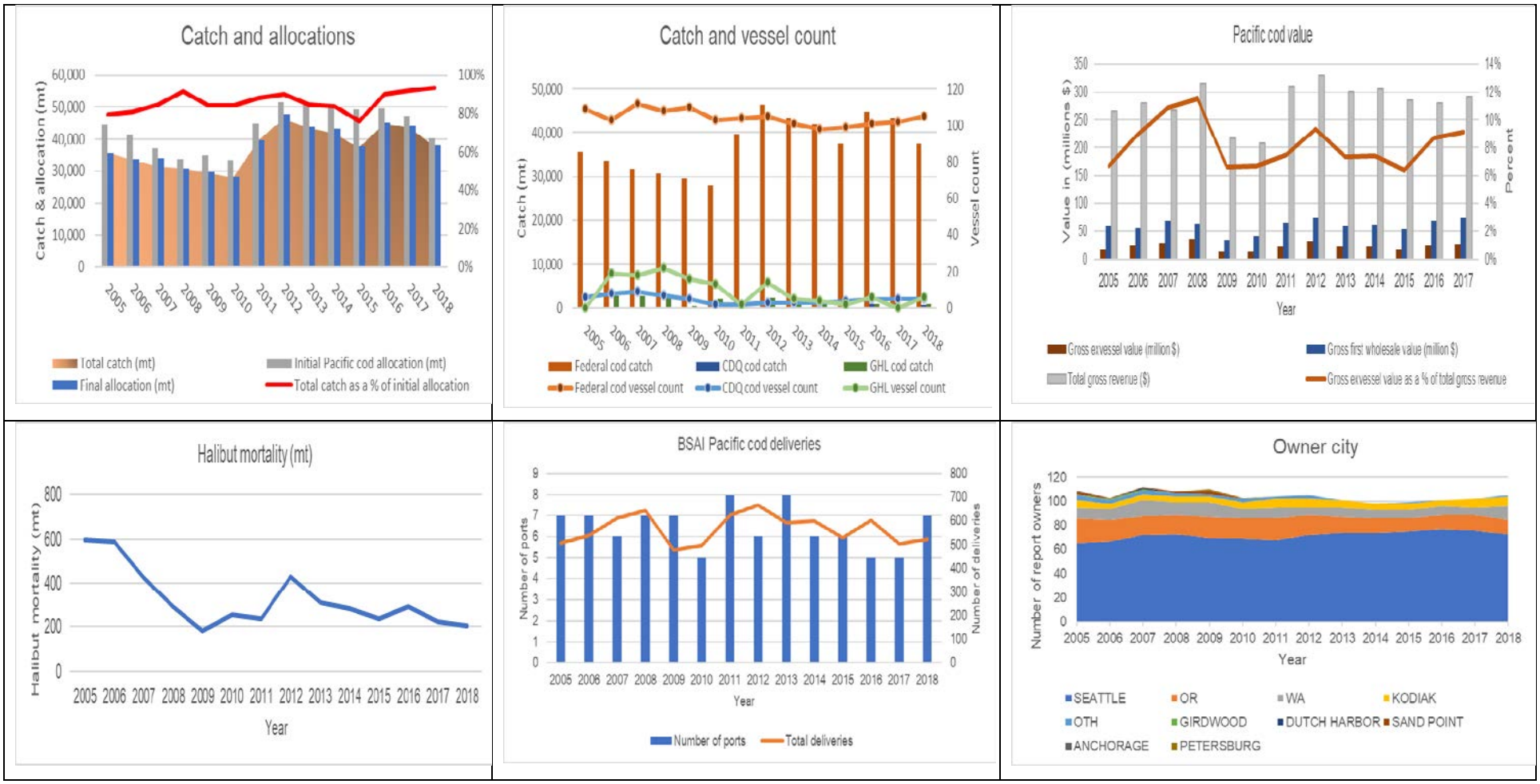


Figure 4-2 BSAI Pacific cod indicators for the trawl CV sector from 2005 through 2018

The trawl CV sector includes all trawl CVs that are issued an AFA permit for eligibility to participate in the directed BSAI pollock fishery and those trawl CVs that are not issued an AFA permit. These trawl CVs share 22.1 percent allocation of BSAI Pacific cod.

For the AFA CVs, most vessels rely almost exclusively on pollock harvested in the BS, while Pacific cod is the second most important species in terms of volume for these vessels. While nearly all the groundfish harvested by the larger vessels is delivered to shoreside processors, many of the many smaller vessels deliver their catch to motherships or catcher processors. The AFA trawl CVs have a sideboard limit of 86.09 percent of the seasonal allocations of BSAI Trawl CV Pacific cod. The Pacific cod harvest limits, like other groundfish and PSC bycatch limits for AFA CVs, are managed using directed fishing closures according to the procedures set out at §679.20(d)(1)(iv), §679.21(d)(8), and §679.21(e)(3)(v). There are nine AFA trawl CVs that are exempt from the AFA CV Pacific cod sideboard limits. Nineteen additional CVs have a mothership endorsement and are exempt from the sideboards after March 1. The harvest of BSAI Pacific cod for this sector is managed through an inter-cooperative agreement.

The non-AFA trawl CVs are not eligible to participate in the directed BSAI pollock fishery. Vessels in this group are typically between 60 ft and 125 ft but occasionally vessels < 60 ft participate in the sector. The non-AFA trawl CVs rely on BSAI Pacific cod, the GOA groundfish fishery, and halibut IFQ using longline gear and State of Alaska commercial seine fisheries for salmon.

Table 4-10 shows that in 2019, there were a total of 114 LLP licenses with a trawl CV endorsement for the BS. Of those 114 LLP licenses, 42 licenses also had an AI endorsement, one license was endorsed only for the AI and that license had an AI HAL endorsement. The 12 of the AI trawl area endorsements that were created under Amendment 92 (74 FR 41080, August 14, 2009) were also included in these LLP license totals.

Looking at the catch indicators of Figure 4-2 and Table 8-1, the sector on average harvested 82 percent of its BSAI Pacific cod allocation from 2005 through 2007, and 87 percent of their allocation since implementation of Amendment 85 in 2008. The sector's remaining unharvested BSAI Pacific cod was reallocated throughout the fishing year to other sectors. The reallocation has ranged from a low of 2,200 mt in 2018 to a high of 11,370 mt in 2015.

In the federal BSAI Pacific cod target fishery, the number of participating trawl CV vessels ranged from a low of 48 in 2010, 2014, and 2015 to a high of 65 in 2008 and 2018. Factoring in incidental catch of Pacific cod, the total number of vessels in the sector that harvested any BSAI Pacific cod has ranged from a low 98 in 2014 to high of 112 in 2007. The difference in vessel count between those targeting BSAI Pacific cod and those only harvesting incidental amounts of BSAI Pacific cod is due mostly to those AFA trawl CVs that only target BSAI pollock. Activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector were minimal, with only an average one percent of their BSAI total Pacific cod harvest originating from these BSAI Pacific cod sources.

The trawl CV sector is one of the sectors that participate in the AI Pacific cod fishery on a regular basis. As a percent of total non-CDQ BSAI Pacific cod catch for the sector, the AI fishery has declined from its peak in 2009. The number of trawl CVs during 2005 through 2018 that participate in the AI Pacific cod fishery has also declined. The largest number of trawl CVs harvesting AI Pacific cod was 34 in 2007, while the lowest number of trawl CVs was in 2015 and 2017 at seven. Total catch of AI Pacific cod is down from its 2009 peak. The highest amount of Pacific cod harvested in the AI was nearly 15,000 mt in 2009, while the lowest amount of AI Pacific cod was 2,735 mt in 2015.

Provided in Figure 4-2 and Table 8-2 are annual estimates the trawl CV sector's gross exvessel value for BSAI Pacific cod, gross exvessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and total gross revenue of all fisheries (state and federal). The exvessel value of the BSAI Pacific cod fishery has ranged from a low of $14 million in 2009 and 2010 to a high of $36 million in 2008. Gross first wholesale value has ranged from a low of $34 million in 2009

to a high of $75 million in 2012 and 2017. Looking at the value of the BSAI Pacific cod fishery for the trawl CV sector relative to the total gross revenue, the fishery on average contributed approximately 8 percent of the total revenue from 2005 to 2017. The largest contributor to the total gross revenue for the sector was the BS pollock fishery. The Pacific cod fishery as a percent of the total gross revenue has been as low as 6 percent in 2015 and as high as 11 percent in 2007 and 2008.

The length of the BSAI Pacific cod fishery for the trawl CV sector has compressed in recent years. Table 4-11 provides a summary of the closure and opening dates for the BSAI Pacific cod trawl CV fishery. The BSAI trawl CV fishery is opened to fishing on January 20 and closes by regulation on November 1. Except for 2014 and 2015, the trawl CV sector has been restricted to bycatch-only retention status (directed fishing closures) at some point during the A-season every year from 2005 through 2019. The A-season fishery in the BS has ranged from 60 days in 2009 to 12 days in 2019. In 2014 and 2015, the fishery closed only in the AI prior to the end of the A-season. During 2016 and 2017 the fishery was closed on March 9th and February 23rd, respectively. The earliest closure for the non-CDQ trawl CV sector during the A-season was February 1, 2019 in the BS. The B-season is typically only open from one week to a few days in recent years. During the C-season, when Pacific cod directed fishing is often closed, the majority of the catch is taken in directed fisheries other than Pacific cod.

Table 4-11 Closure and opening dates (days) for the BSAI Pacific cod trawl CV sector, 2005 through 2019 A-season

Year	A-Season: 20 Jan - Apr 1		B-Season: 1 Apr - 10 Jun			C-Season: 10 Jun - Nov 1
2005	Cl 13-Mar (52)	Op 29-Mar (3)				Cl 18-Aug, HAL (69)
2006	Cl 8-Mar (47)		Cl 6-Apr (5)	Cl 8-Jun, HAL		Op 19-Jul, HAL Cl 31-Aug (43)
2007	Cl 12-Mar (51)		Cl 9-Apr (8)			Cl 29-Sep, HAL (111)
2008	Cl 6-Mar (45)		Cl 4-Apr (3)			
2009	Cl 21-Mar (60)		Cl 5-Apr (4)			
2010	Cl 12-Mar (51)		Cl 1-Apr (0)			
2011	Cl 26-Mar (65)		Cl 4-Apr (3)	Op 9-Apr	Cl 12-Apr (3 Op 15-Apr	
2012	Cl 29-Feb (39)	Op 29-Mar (3)	Cl 15-Apr (14)			
2013	Cl 11-Mar (50)					
2014	Cl 16-Mar (55)					
2015	Cl 27-Feb (38)					
2016	Cl 9-Mar (48)		Cl 4-Apr (3)	Op 11-Apr	Cl 4-May (23)	
2017	Cl 23-Feb (34)		Cl Apr 3 (2)			
2018	Cl 11-Feb (22-BS), Cl 4-Mar (43-BSAI)		Cl Apr 3 (2)			
2019	cl 1-Feb (12 BS)					

Notes: Cl = Closed by TAC, Op = Open, HAL=Closed because halibut PSC limits reached, REG=Closed by Regulation

Numbers reported in parentheses are the days the fishery was open to directed fishing prior to closure

All openings and closures are because of TAC unless otherwise noted

Provided in Table 8-3 are PSC amounts for halibut, red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook by the trawl CV sector while targeting BSAI Pacific cod from 2005 through 2018. Most PSC levels since implementation of Amendment 85 in 2008 have declined. Halibut PSC, as noted in Figure 4-2, has declined from a high of 596 mt in 2005 to a low of 205 mt in 2018. Crab PSC has also declined since implementation of Amendment 85 as seen in Table 8-3. Salmon PSC while targeting Pacific cod is also noted in Table 8-3. Although the sector is not restricted in their salmon PSC in the Pacific cod fishery, the sector does utilize salmon avoidance measures where possible to reduce their salmon PSC.

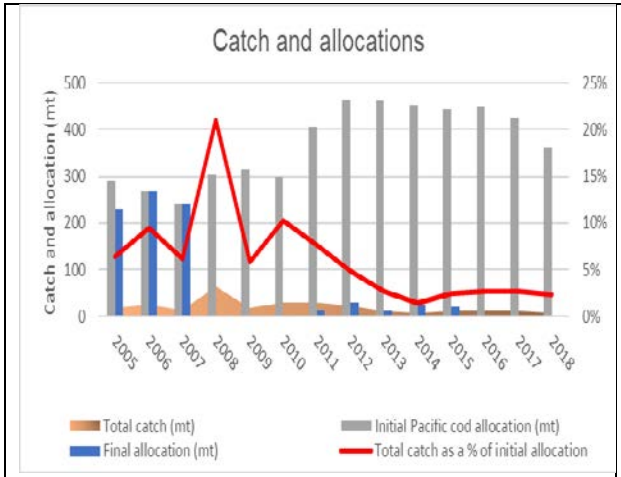
The port delivery indicator provided in Figure 4-2 and Table 8-4 depicts the total number of deliveries of targeted BSAI Pacific cod the trawl CV sector made and the total number of delivery ports during the 2007 through 2018 period. Overall, the total number of delivery ports has ranged from a six to eight ports. The total number of deliveries has fluctuated between 487 deliveries in 2009 to 667 deliveries in 2012.

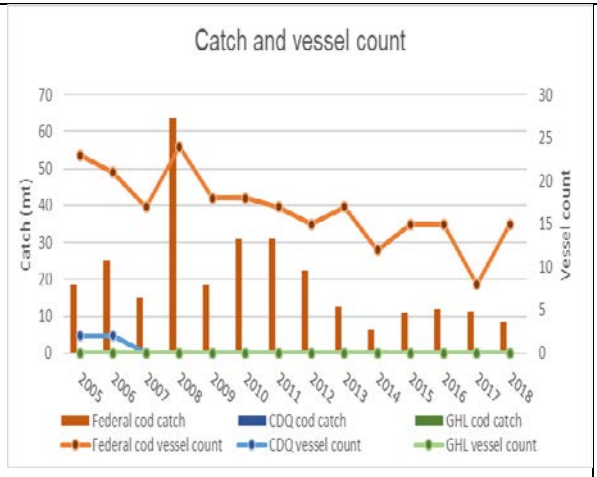
Floating processors had the most delivers by annual basis by the trawl CV sector followed by Akutan, motherships, Unalaska/Dutch Harbor, and Adak.

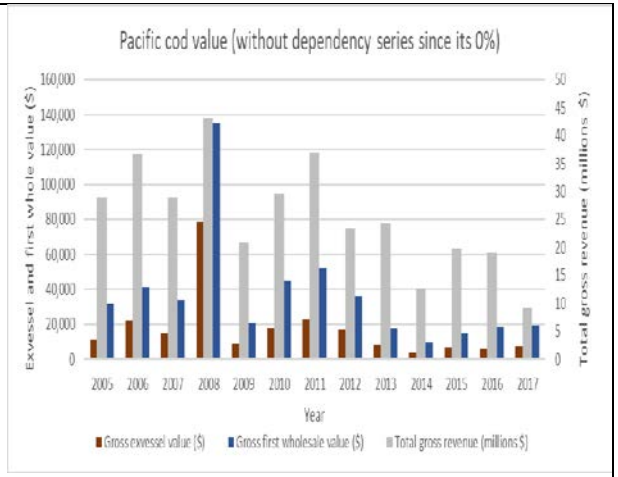
From a community perspective, the owner city indicator shown in Figure 4-2 notes a gradual concentration of reported trawl CV ownership by community. In 2005, there were 109 reported trawl CV owners in eight different communities, while in 2018 there were 105 owners in five different communities. The shift in residency could be in part due to some consolidation in the AFA trawl CV fleet and the non-AFA trawl CV fleet. Communities with no reported trawl CV residency since 2011 include Girdwood, Unalaska/Dutch Harbor, Sand Point, Anchorage, and Petersburg. Another community that has also seen a sharp decline in the number of trawl CV owners is Oregon. In 2005, 21 trawl CV owners reported Oregon as their residence, while in 2018, 12 trawl CV owners reported Oregon as their residence.

Overall, the sector's vessel counts and harvest performance prior to the implementation of Amendment 85 and after its implementation in 2008 has not changed much. What has changed for the sector in recent years is pace of the A-season fishery (see Table 4-11) and the growth in deliveries to Amendment 80 C/Ps acting as motherships in the BS. The A-season fishery in the BS has been reduced from an approximately 40-50 day plus fishery through 2016 to a 12-day fishery in 2019, all while maintaining the same level of harvest capacity. Simultaneously, the percent of BS Pacific cod harvested by the sector and delivered to trawl C/Ps acting as a mothership for processing has increased from an average 4.3 percent during the 2008 through 2016 time period, to a high of 30.5 percent in 2019. Both AFA and non-AFA trawl CVs have contributed to the growth offshore deliveries by the sector. Also, the addition of the AI Pacific cod set-aside for AI shoreplants (Amendment 113) restricted the trawl CV BS A-season Pacific cod by 5,000 mt in the 2018 and 2019 fishery and shortened the BS A-season Pacific cod fishery for the sector in the 2018 and 2019 fishing seasons. Overall, the combination of these factors in addition to the reduced BS Pacific cod TAC has compressed a nearly two-month fishery into an almost two-week fishery. Some of the potential consequences of a compressed fishery are increased halibut PSC, reduced safety, and reduced harvesting and processing efficiency. In addition, with the recent U.S. District Court ruling on the Amendment 113 in March 2019, there is a strong likelihood the trawl CV sector could harvest its entire A-season allocation in the BS, which would prevent trawl CVs from targeting AI Pacific cod during their A-season which will negatively impact AI shoreplants that rely on the trawl CV sector for deliveries during this crucial period of the fishing year.

4.2.2 HAL CV ≥ 60 ft

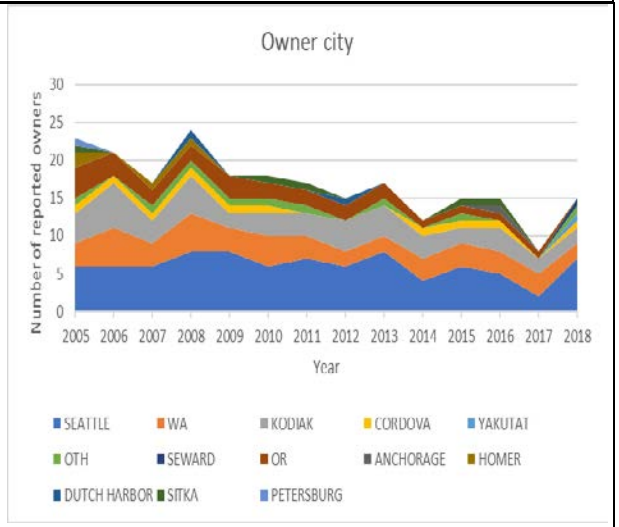






PSC for target BSAI Pacific cod is confidential therefore cannot be reported

Delivery data for target BSAI Pacific cod is confidential and therefore cannot be reported



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-3 BSAI Pacific cod indicators for the HALCV ≥ 60 ft sector from 2005 through 2018

The HAL CV ≥ 60 ft sector includes all vessels ≥ 60 ft LOA operating as CVs using HAL gear. Most of these vessels fish almost exclusively for sablefish in the individual fishing quota (IFQ) fishery, but also retain rockfish and Pacific cod as required for IFQ sablefish participants. Beginning in 2003, HAL CVs ≥ 60 ft must have a Pacific cod HAL CV endorsement on their LLP license to conduct directed fishing for Pacific cod in the BS or AI with HAL gear.

Table 4-10 shows that in 2019, there were a total of eight LLP licenses with a Pacific cod HAL cod CV endorsement for the BS. Of those eight LLP licenses, seven licenses also had an AI endorsement, while one license has a BS pot endorsement and one license has an AI pot endorsement.

The HAL CV ≥ 60 ft sector is currently allocated 0.2 percent of the BSAI Pacific cod TAC. Using an initial allocation,[9] the catch indicators of Figure 4-3 and Table 8-6, the sector never harvested more 11 percent of their allocation with the exception of 2008 when they harvested 21 percent of their allocation. On average, the sector harvested 7 percent of its BSAI Pacific cod initial allocation from 2005 through 2007, and 6 percent of their allocation since Amendment 85 was implemented in 2008. The remaining unharvested BSAI Pacific cod from the sector was reallocated throughout the fishing year to other sectors and has ranged from a low of 0 mt in 2006 and 2007 to a high of 450 mt in 2013.

In the federal BSAI Pacific cod target fishery, the number of participating HAL CVs ≥ 60 ft ranged from no CVs in many years to a high of three CVs in 2005. Since 2012, no HAL CVs ≥ 60 ft has targeted BSAI Pacific cod. Factoring in incidental catch of BSAI Pacific cod from their other target fisheries, the number of vessels catching BSAI Pacific cod is shown in Table 8-6. The reason the vessel count is greater than the available Pacific cod HAL cod CV endorsed LLP licenses is because an LLP license is not needed to participate in the halibut and sablefish individual fishery quota (IFQ) fisheries. Activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector is limited with some minor activity in the CDQ fishery in 2005 and 2006.

The HAL CV ≥ 60 ft sector is one of several sectors that harvests AI Pacific cod on a regular basis. However, as noted above, very little of the BSAI Pacific cod harvested by the sector is from directed fishing for Pacific cod. Of the BSAI Pacific cod harvested since 2005, approximately 52 percent is from the AI, of which most is incidental to their IFQ sablefish fishery.

Provided in Figure 4-3 and Table 8-7 are HAL CV ≥ 60 ft sector annual estimates of gross exvessel value for BSAI Pacific cod, gross exvessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and total gross revenue of all fisheries (state and federal). The exvessel value of the BSAI Pacific cod fishery has ranged from a low of slightly less than $4 thousand in 2014 to a high of $79 thousand in 2006. Gross first wholesale value has ranged from a low of $9 thousand in 2014 to a high of $135 thousand in 2006. Looking at that value of the BSAI Pacific cod fishery for the HAL CV sector relative to the total gross revenue, the fishery accounted for less than zero percent of the total revenue on average from 2005 to 2017 and is thus not included in the value indicator in Figure 4-3. The largest contributor to the sector's total gross revenue was the IFQ sablefish fishery.

Given the limited number of HAL CV ≥ 60 ft CVs participating in the BSAI Pacific cod target fishery, PSC data for the sector is confidential and therefore cannot be reported.

Given the limited participation by the HAL CV ≥ 60 ft sector in the BSAI Pacific cod fishery, the sector has not experienced a compressed fishing season like some sectors have. The fishery opens on January 1 for directed fishing and is usually open until the fall when any remaining unharvested Pacific cod is reallocated to other sectors.

[9] A portion of the initial allocation for the fixed gear sectors is used for the HAL/pot incidental catch allowance, so the initial allocation utilized in this report includes the ICA allowance.

All data on port deliveries for the HAL CV ≥ 60 ft sector is confidential. In general, the limited participation by the sector in the target BSAI Pacific cod fishery, the sector made very few deliveries over allocation review period. Ports of delivery were Unalaska/Dutch Harbor, Adak St. Paul, Akutan, and Ninilchik.

From a community perspective, the owner city indicator shown in Figure 4-3 notes a gradual decline in the number of reported HAL CV ≥ 60 ft vessel owners' residency and a modest concentration of reported residency all since Amendment 85 implementation. In 2005, there were 23 reported HAL CV ≥ 60 ft owners, while in 2018 there were 15 reported owners. In 2018, six HAL CV ≥ 60 ft owners reported Seattle as their residency, which is a gain of one when compared to 2005. Washington, other than Seattle, and Kodiak each reported lower HAL CV ≥ 60 ft residency counts for 2018 at two compared to 2005 data which reported three and four owners, respectively. Other communities that had a lower residency count since 2005 were Oregon at four and Homer at two, while Yakutat and Seward each reported a gain of one compared to 2005.

Overall the HAL CV ≥ 60 ft sector has had little participation in BSAI Pacific cod fishery since implement of the Amendment 85 in 2008. Prior to the implementation of Amendment 85, two to three CVs participated in the target fishery harvesting between six and nine percent of the initial allocation. Since implementation, one CV participated in the target fishery in 2008, 2010, and 2011. The sector on average harvests six percent of their initial allocation since 2008 (incidental catch included). Given the limited participation in the BSAI Pacific cod fishery by the sector, nearly 90 percent of the sectors allocation has been reallocated to other sectors in the fall since 2008.

4.2.3 Pot CV ≥ 60

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-4 BSAI Pacific cod indicators for the pot CV ≥ 60 ft sector from 2005 through 2018

The pot CV ≥ 60 sector includes all vessels ≥ 60 ft operating as CVs using pot gear. As of January 1, 2003, pot CVs ≥ 60 ft must have a Pacific cod pot CV endorsement on their LLP license to target BS and AI Pacific cod with pot gear.

Table 4-10 shows that in 2019, there were a total of 49 LLP licenses with a Pacific cod pot CV endorsement for the BS. Of those 49 LLP licenses, two licenses also had an AI endorsement and one license has BS CV HAL endorsement.

The pot CV ≥ 60 ft sector is allocated 8.4 percent of the BSAI Pacific cod TAC. Looking at the catch indicators of Figure 4-4 and Table 8-10, the sector on average harvested 91 percent of their initial allocation[10] from 2005 to 2007, and 73 percent since Amendment 85. On few occasions, the sector has harvested at or near 100 percent of their initial allocation. The remaining unharvested BSAI Pacific cod from the sector was reallocated throughout the fishing year to other sectors and has ranged from a low of 0 mt in 2011 when the sector's Pacific cod allocation was reallocated to a high of 6,750 mt in 2015.

In the federal BSAI Pacific cod target fishery, the number of participating pot CVs ≥ 60 ft has declined since implementation of Amendment 85. Overall, vessel numbers in the federal BSAI Pacific cod target fishery has ranged from a low of 23 CVs in 2015 to a high of 48 CVs in 2006. Nearly all its sector allocation is harvested in the BS. Since the sector only targets Pacific cod and some sablefish IFQ, they do not catch Pacific cod as incidental catch in other groundfish fisheries. Fishing activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector is very limited. There were between two to seven CVs participating in the AI GHL fishery from 2006 through 2008 and between one to two CVs participating in the CDQ fishery from 2005 through 2009. Other fisheries the sector participates in are sablefish IFQ and crab fisheries.

Provided in Figure 4-4 and Table 8-11 are pot CV ≥ 60 ft sector annual gross exvessel value for BSAI Pacific cod, gross exvessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and total gross revenue of all fisheries (state and federal). The exvessel value of the BSAI Pacific cod fishery has ranged from a low of slightly less than $4 million in 2009 to a high of $15 million in 2008. Gross first wholesale value has ranged from a low of $7 million in 2009 to a high of $28 million in 2011. Looking at the BSAI Pacific cod exvessel value for the sector relative to the total gross revenue, the fishery accounted for less than 12 percent of the total revenue on average from 2005 to 2017.

For the pot CV ≥ 60 ft sector, there are no PSC limits for halibut, crab, and salmon for the sector. Provided in Figure 4-4 is annual halibut mortality for the sector, while Table 8-12 provides data showing annual halibut mortality, and catch of red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook salmon for the sector while targeting BSAI Pacific cod from 2005 through 2018. Halibut mortality for the sector ranges from a low of less than one mt in most years to a high of slightly over three mt in 2011. As for crab bycatch, Table 8-12 shows the sector had some of the highest crab bycatch of all the sectors.

There are two BSAI Pacific cod seasons for the pot CV ≥ 60 ft sector: A-season which is January 1 to June 10 and B-season which is September 1 to December 31. Typically, the sector has a short A-season closing at the end of January or beginning of February, while the B-season, tends to remain open throughout the season, but on few occasions has closed in October or November.

The port delivery indicator provided in Figure 4-4 and the port delivery data provided in Table 8-13 show the total number of deliveries of targeted BSAI Pacific cod for the pot CV ≥ 60 ft sector and the number of ports to include floating processors. Overall, the total number of delivery ports has remained relatively consistent since 2009 at 5. The total number of deliveries has fluctuated between 118 deliveries in 2009 to

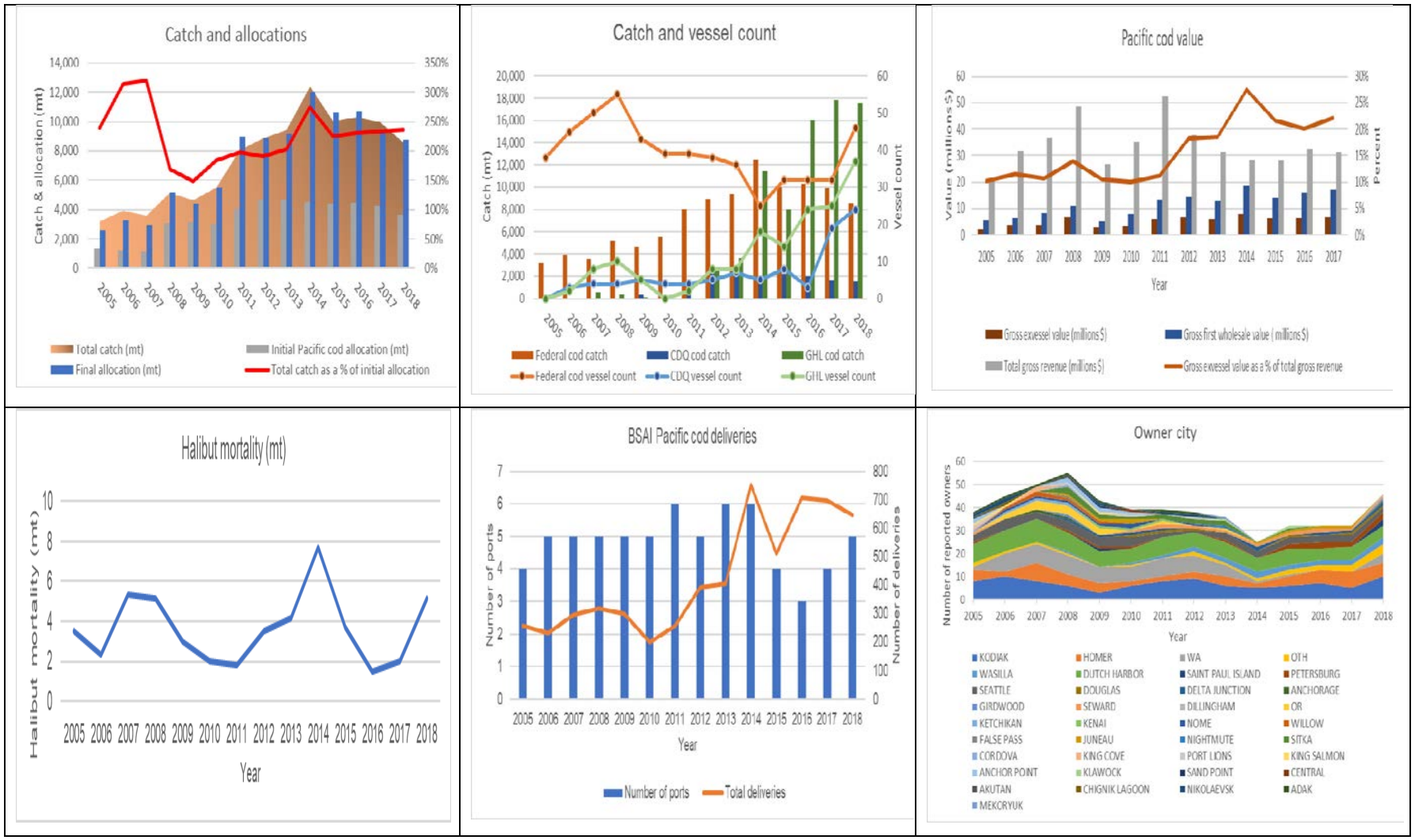
[10] A portion of the initial allocation for the fixed gear sectors is used for the HAL/pot incidental catch allowance, so the initial allocation utilized in this report includes the ICA allowance.

308 deliveries in 2005. Of the delivery ports, Unalaska/Dutch Harbor has routinely had the most deliveries throughout the 2005-2018 period.

From a community perspective, the owner city indicator shown in Figure 4-4 and data in Table 8-14 denote a modest decline in the total number of reported pot CV ≥ 60 ft owners and a modest concentration of reported residency all since Amendment 85 implementation. In 2005, there were 47 reported pot CV ≥ 60 ft owners, while in 2018 there were 34 reported owners. The biggest change in residency for the sector was Seattle, which in 2018 had 13 reported pot CV ≥ 60 ft owners, while in 2007 there were 26 sector owners reporting Seattle as their residency. Other communities that had reported residency greater than one on an annual basis for the pot CV ≥ 60 ft sector were Washington (other than Seattle), Oregon, Homer, and Kodiak.

Overall the pot CV ≥ 60 ft sector has experienced a modest decline in the number of CVs participating in the BSAI Pacific cod fishery since the implementation of Amendment 85. The sector routinely harvests its entire A-season allocation by the end of January or early February thereby closing directed fishing, while the B-season is a slower fishery which in the past has often resulted in a reallocation of a third of their initial allocation to other sectors. However, in 2018, the sector harvested its entire initial allocation, which is a first during the 2005 through 2018 period.

4.2.4 HAL/Pot CV < 60 ft



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Figure 4-5 BSAI Pacific cod indicators for the HAL/pot CV < 60 ft sector from 2005 through 2018

The HAL/Pot CV < 60 ft sector includes all CVs that are < 60 ft LOA using pot or HAL gear. Vessels in this sector need a non-trawl LLP to participate in the Federal fisheries. As of April 2019, 129 non-trawl licenses were issued to < 60 ft CVs with BS and/or AI area endorsements.

These vessels focus on salmon, halibut, and higher priced groundfish using a mix of gear types. The length of these vessels means they can participate in all Alaskan salmon fisheries (to participate in the Bristol Bay salmon drift gillnet fishery vessels must be 32 ft. or less). In recent years, Pacific cod has been the primary revenue source. This sector has a 2 percent BSAI Pacific cod allocation since Amendment 85 in 2008.

Looking at the catch indicators of Figure 4-5 and Table 8-15, the sector routinely harvests their entire initial allocation[11] in addition to a significant portion of BSAI Pacific cod reallocated from other sectors in April and later in the year. On average, the sector harvested 226 percent of their initial allocation from 2005 to 2007, and 209 percent since Amendment 85. Reallocation amounts have ranged from a low of 1,247 mt in 2005 to high of 7,500 mt in 2014. Including the reallocated Pacific cod, the sector on average has harvested all of their final allocation of Pacific cod on an annual basis.

In the federal BSAI Pacific cod target fishery, the number of participating HAL/Pot CVs < 60 ft has varied only by 11 CVs in the last 14 years, ranging from a low of 20 CVs in 2014 to high of 31 CVs in 2007 and 2008. Some sector vessels participate in the AI Pacific cod fishery, but as a percent of their total BSAI Pacific cod activity, this active is relatively small.

Vessel length for the HAL/Pot CVs < 60 ft has in general ranged from between 28 ft to 58 ft. Based on vessel size data in the BSAI Pacific cod fishery for the HAL/Pot CV < 60 ft sector, the number of participating 58 ft vessels has remained fairly consistent during the 2004 through 2018 period. The number of 58 ft. CVs participating in the target BSAI Pacific cod allocation has ranged from a low 15 CVs in 2005 and 2013 to a high of 25 CVs in 2007 and 2018.

As noted in the catch and vessel count indicator (Figure 4-5), fishing activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector has increased significantly. In the CDQ fishery, the number of participating sector vessels has increased from a low of three CVs in 2006 to a high of 24 CVs in 2018. The amount of harvested BSAI Pacific cod CDQ has ranged from a low of one mt in 2006 to a high of 2,531 mt in 2013. In the GHL fisheries, there has also been significant increase in the number of active CVs and the amount harvested, most of which is in the DHS GHL fishery for pot CVs which started in 2014. Prior to 2014, the number of participating sector CVs ranged from two to 10 harvesting between 111 mt and 562 mt, all of which was in the AI GHL fishery since that was the only GHL fishery in the BSAI. Starting in 2014 with the implementation of a DHS GHL fishery, the number of sector CVs increased to 18 which harvested 11,401 mt of Pacific cod. In 2018, 37 sector CVs harvested over 17,000 mt of DHS GHL.

Provided in Pacific cod value indicator (Figure 4-5) and Table 8-16 are HAL/Pot CV < 60 ft sector annual gross exvessel value for BSAI Pacific cod, gross exvessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and total gross revenue of all fisheries (state and federal). The exvessel value of the BSAI Pacific cod fishery has ranged from a low of $2 million in 2005 to a high of $8 million in 2014. Gross first wholesale value has ranged from a low of $6 million in 2005 and 2006 to a high of $18 million in 2014. Looking at the BSAI Pacific cod exvessel value for the sector relative to the total gross revenue, the fishery accounted for less than 16 percent of the total revenue on average from 2005 to 2017.

There are no PSC limits for halibut, crab, and salmon for the HAL/Pot CV < 60 ft sector. Nevertheless, the sector does show high crab bycatch. Provided in Figure 4-5 is annual halibut mortality for the sector,

[11] A portion of the initial allocation for the fixed gear sectors is used for the HAL/pot incidental catch allowance, so the initial allocation utilized in this report includes the ICA allowance.

while Table 8-17 provides data showing annual halibut mortality, and red king crab, C. bairdi, C. opilio, Chinook salmon PSC, and non-Chinook salmon PSC for the sector while targeting BSAI Pacific cod from 2005 through 2018. Halibut mortality for the sector ranges from a low of one mt to a high of 8 mt in 2014.

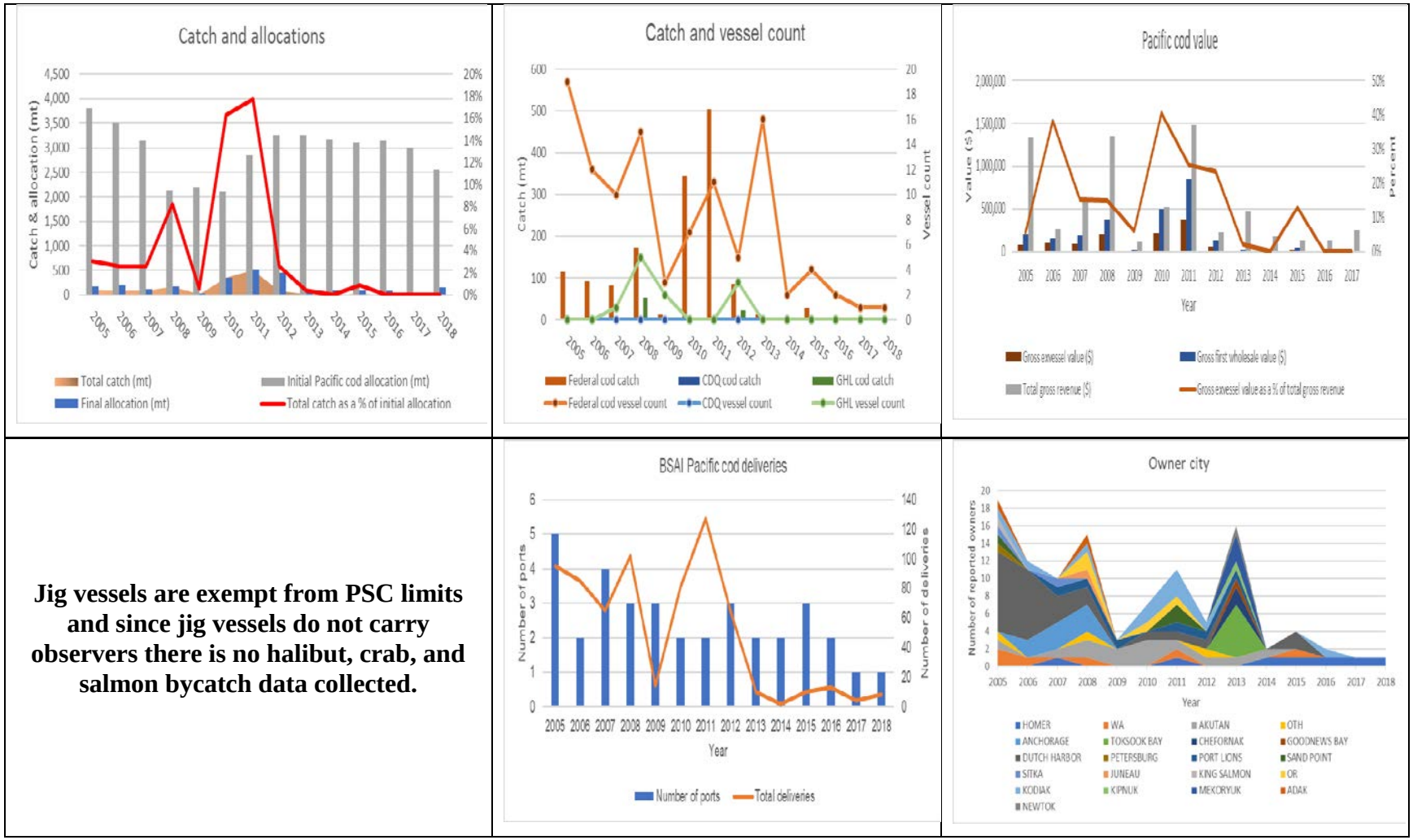
The HAL/Pot CV < 60 ft sector does not have seasonal allowances. Nevertheless, there appears to be a gradual shortening of the initial fishing period when the sector harvests its initial allocation. In 2005 and 2006, the sector did not have its first closer before April. Between 2007 and 2011, the sector's first fishery closure occurred in March. Since 2014, the sectors first closure now occurs in early February. Once the sector has harvested its initial allocation, reallocations from other sectors can open the fishery as early as late April or early May. Another typically period of reallocations that can allow the sector to target Pacific cod is mid-August to early September. Typically, the fall reallocation is sufficient to allow the fishery to remain open for the sector during the remainder of the year.

The port delivery indicator provided in Figure 4-5 and the port delivery data provided in Table 8-18 show the total number of deliveries of targeted BSAI Pacific cod for the HAL/Pot CV < 60 ft sector and the number of ports including floating processors. The number of ports the sector has delivered BSAI Pacific cod has ranged from between four and six. The total number of deliveries has fluctuated between 199 deliveries in 2010 to 707 deliveries in 2016. Of the delivery ports, Unalaska/Dutch Harbor has routinely had the most deliveries throughout the 2005-2018 period.

From a community perspective, the owner city indicator shown in Figure 4-5 and data in Table 8-19 denotes a highly diversified fleet, but there has been some concentration of reported residency since implementation of Amendment 85. Kodiak has the largest number of HAL/Pot CV < 60 ft vessel owners nine out of 14 years. Other communities include Homer, Washington (other than Seattle), Unalaska, Unalaska/Dutch Harbor, and Seattle.

In summary, the sector is showing signs their BSAI Pacific cod fishery is getting more competitive. The number of days needed to harvest its initial allocation has been reduced from nearly 75 to a little of 30 days. However, the number of CVs within the sector participating in the Federal BSAI Pacific cod fishery has not increased. In fact, the number of participating CVs in the Federal fishery has declined from its high of 31 in 2007 and 2008. Unlike the Federal fishery though, the CDQ and GHL fisheries in the BSAI have shown significant increases in the number of participating CVs and the amount of Pacific cod harvested. Despite the growth in the CDQ and GHL fisheries, since 2010, the exvessel value of the Federal BSAI Pacific cod fishery has increased relatively to the sector's total gross revenue.

4.2.5 Jig



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-6 BSAI Pacific cod indicators for the jig sector from 2005 through 2018

The jig sector includes all vessels (CVs and C/Ps) using jig gear. Vessels in this sector do not need an LLP license in the BSAI if they are < 60 ft LOA and are using no more than five jig machines, one line per machine, and 15 hooks per line. Note that all vessels, ≤ 32 ft LOA operating in the BS and AI are not subject to the LLP requirements.

Vessels using jig gear typically target Pacific cod and rockfish but also catch IFQ halibut and sablefish. Groundfish catches can be important to the financial health of jig vessels, but non-groundfish species such as salmon account for the majority of the total earnings for a large portion of the fleet.

Looking at the catch indicators of Figure 4-6 and Table 8-20, the number of jig vessels participating in the directed BSAI Pacific cod fishery ranged from a low of one in the 2017 and 2018 to a high of 18 vessels in 2005. The sector, in most years, harvested less than five percent of its initial BSAI Pacific cod allocation, and therefore, as required by Amendment 85 regulations, a significant portion of its initial allocation is reallocated to the < 60 ft HAL/pot sector early in the year. The three years of higher initial allocation that was utilized were 2008 at eight percent, 2010 at 16 percent, and 2011 at 18 percent. On average, the sector harvested three percent of its BSAI Pacific cod initial allocation from 2005 through 2007, and five percent of their initial allocation since Amendment 85 was implemented in 2008. The remaining unharvested BSAI Pacific cod from the sector was reallocated to other sectors and has ranged from a low of 1,760 mt in 2010 to a high of over 3,000 mt in several different years throughout the 2005 to 2018 years. Activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector is limited with some minor activity in the AI GHL fishery from 2007 through 2009 and in 2012.

Provided in the Pacific cod value indicator (Figure 4-6) and Table 8-21 are jig sector annual gross exvessel value for BSAI Pacific cod, gross exvessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and total gross revenue of all fisheries (state and federal). The exvessel value of the BSAI Pacific cod fishery has ranged from a low of $9 thousand in 2013 to a high of $375 thousand in 2011. Gross first wholesale value has ranged from a low of $14 thousand in 2009 to a high of $849 thousand in 2011. Looking at the BSAI Pacific cod exvessel value for the sector relative to the total gross revenue, the fishery accounted for between 2 percent and 40 percent of the total revenue on average from 2005 to 2017.

The jig sector is exempt from PSC limits and no data is available on the annual halibut, crab, and salmon PSC since jig gear is not observed.

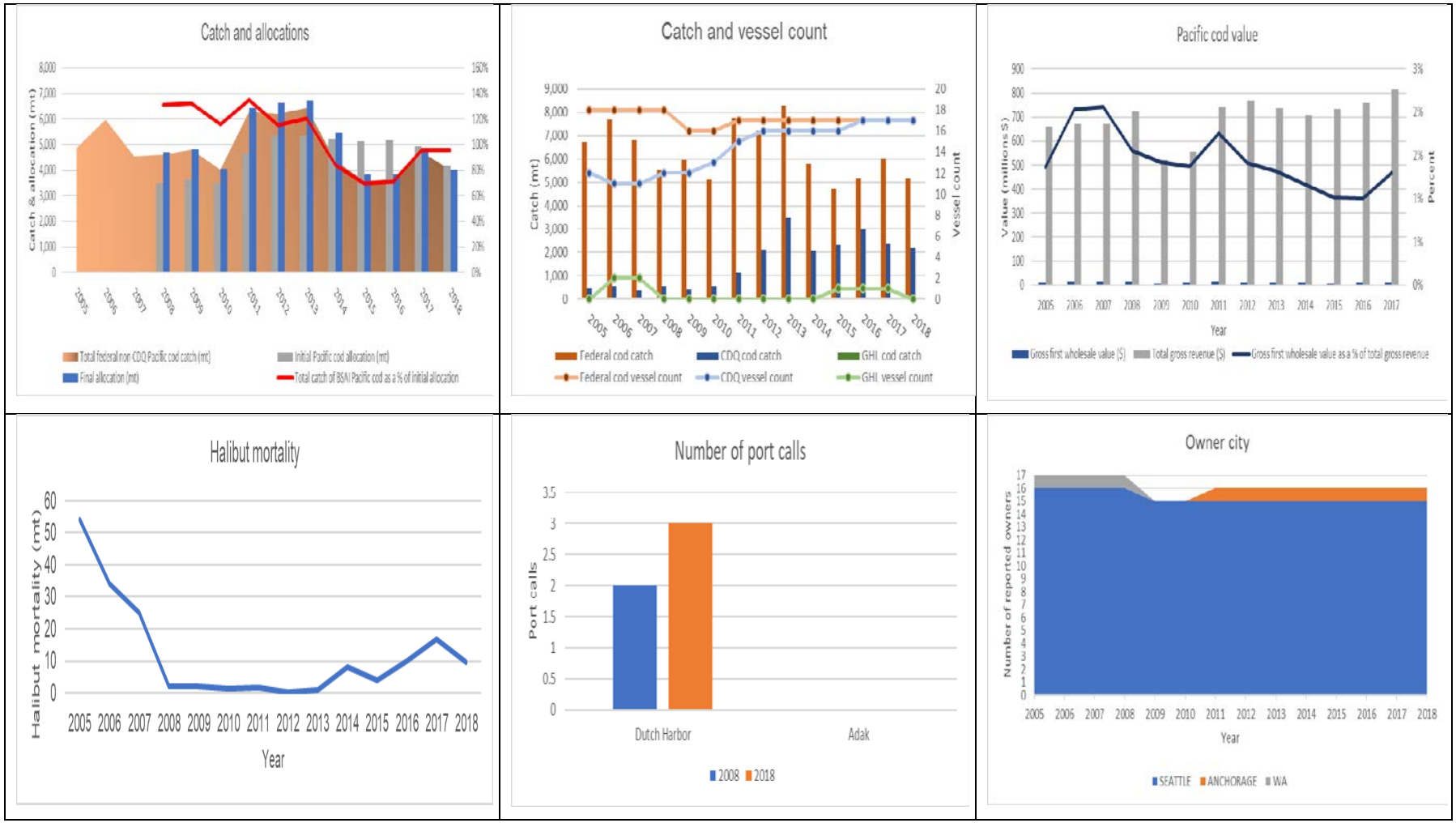
The jig sector has three season allowances; Jan 1 – Apr 30 (60%); Apr 30 – Aug 31 (20%), and Aug 31 –Dec 31 (20%). The sector has generally remained open throughout the entire year during the 2005 through 2018 period.

The port delivery indicator provided in Figure 4-6 and the port delivery data provided in Table 8-22 shows on an annual basis the total number of deliveries of targeted BSAI Pacific cod for the jig sector and the total number of ports. Since 2012, the number of delivery ports and total deliveries has declined. The number of ports the sector has delivered BSAI Pacific cod to has ranged from between one in 2017 and 2018 and five in 2005. The total number of deliveries has fluctuated between 4 deliveries in 2017 to 127 deliveries in 2011. Of the delivery ports, Unalaska/Dutch Harbor has routinely had the most deliveries by the sector throughout the 2005 – 2018 period.

From a community perspective, the owner city indicator shown in Figure 4-6 and the data in Table 8-23 shows a decline in jig ownership in recent years. In 2005, the number of jig owners reporting their residence was 19, while in 2017 and 2018 the number of jig owners reporting their residence was one. Residency of jig ownership is diverse. Some of the communities that consistently had jig ownership residency included Unalaska/Dutch Harbor, Akutan, Homer, Washington (other than Seattle), Kodiak, Homer, and Port Lions.

In summary, the jig sector has had little participation in BSAI Pacific cod fishery. The sector on average harvests six percent of their initial allocation during the 2005 through 2018 time period. Given the limited participation in the BSAI Pacific cod fishery by the jig sector, with the exception of 2010 – 2012, over 90 percent of the sector's allocation was reallocated to other sectors.

4.2.6 AFA trawl C/P



Source: AKFIN, May 2019, and PSC data is from
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Figure 4-7 BSAI Pacific cod indicators for the AFA trawl C/P sector from 2005 through 2018

The AFA trawl C/P sector includes 20 vessels listed by name in the AFA as eligible to harvest BSAI pollock in the directed fishery.[12]The Consolidated Appropriations Act of 2005 (Section 219(a)(1)) defines eligibility in the AFA trawl C/P sector as the owners of each C/P listed in paragraphs (1) through (20) of Section 208(e) of the AFA. On January 21, 1999, the formed the Pollock Conservation Cooperative (PCC) to coordinate pollock harvest under the AFA.

These large factory trawlers have the processing equipment to produce surimi and/or fillets from pollock, Pacific cod, and other groundfish. These vessels also have room for equipment to produce fishmeal, minced product, and other product forms. This sector operates in a pollock cooperative under AFA, which allows them to modify operations in terms of when they fish and what the process to account for changing weather, markets, and management restrictions. Pollock is the primary species harvested by this sector, but two or three vessels have targeted Pacific cod, while several vessels target yellowfin sole. The Amendment 85 final rule removed the sideboard limit for BSAI Pacific cod for the AFA trawl C/Ps. The establishment of a separate BSAI Pacific cod allocation to this sector negates the need for the BSAI Pacific cod sideboard which protects the historic share of the non-AFA trawl C/P sector from being eroded by the AFA trawl C/P vessels.

Table 4-10 shows that in 2019, there were a total of 27 AFA derived LLP licenses with a trawl C/P endorsement for the BS. Of those 27 AFA derived LLP licenses, 25 licenses had an AI endorsement.

Prior to the implementation of Amendment 85 in 2008, the AFA C/P sector shared a 23.5 percent BSAI Pacific cod allocation with the Amendment 80 sector, so initial and final allocations and the associated percent of harvested allocation for the AFA C/P sector is not available. Upon implementation of Amendment 85, the PCC coordinate its 2.3 percent allocation of BSAI Pacific cod.

Looking at the catch indicators of Figure 4-7 and Table 8-24, the sector on average harvested 106 percent of its BSAI Pacific cod allocation since the implementation of Amendment 85 in 2008. From 2008 through 2013, the AFA C/P sector harvested on average 125 percent of their allocation, while since 2014, the sector has harvested on average 64 percent of their allocation. Some portion of the unharvested BSAI Pacific cod allocation starting in 2015 was reallocated to other sectors. The largest reapportionment was 1,350 mt in 2016, while the reapportionment was 158 mt in 2018.

In the federal BSAI Pacific cod target fishery, the number of AFA C/Ps ranged from a low of two to a high of four. However, from the annual cooperative report, it is generally understood that only two AFA C/Ps routinely target BSAI Pacific cod. Factoring in incidental Pacific cod, the total number of vessels in the sector that harvested any BSAI Pacific cod has ranged from a low 16 to high of 18. Most of the incidental catch of Pacific cod was from AFA C/Ps targeting mostly yellowfin sole. Activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector were minimal in the GHL, while in the CDQ fishery the sector has increased their vessel count and harvest relative to the 2005-2010 period.

The AFA C/P sector is one of the sectors that participates in the AI Pacific cod fishery on an annual basis. As a percent of total non-CDQ BSAI Pacific cod catch for the sector, the AI fishery has declined since its highs in 2004. The number of AFA C/Ps during 2005 through 2018 that participate in the AI Pacific cod fishery has remained relatively constant with one AFA C/P actively targeting AI Pacific cod. Given there is only one AFA C/P actively targeting AI Pacific cod, catch data for that one vessel is confidential and therefore cannot be reported.

Provided in Figure 4-7 and Table 8-25 are annual estimates the AFA C/P sector's estimated gross first wholesale value for BSAI Pacific cod, gross first wholesale value as a percent of total gross revenue, and

[12] One additional trawl C/P qualifies under 208(e)(21) of the AFA and is limited to a small percentage of the AFA C/P allocation of pollock and is not sideboarded in other fisheries. However, only the 20 listed AFA C/Ps are considered part of this sector for purposes of this review. The additional trawl C/P that qualifies under 208(e)(21) would be considered part of the Amendment 80 sector for purposes of this review.

total gross revenue of all fisheries (state and federal). Gross first wholesale value for the sector has ranged from a low of $7 million in 2009 and 2015 to a high of $14 million in 2006 and 2007. Looking at the value of the BSAI Pacific cod fishery for the AFA C/P sector relative to the total gross revenue, the fishery on average contributed approximately one percent of the total revenue from 2005 to 2017. The largest contributor to the total gross revenue for the sector was the BS pollock fishery.

There are three BSAI Pacific cod seasons for the AFA C/P sector: A-season which is January 20 to April 1, B-season which is April 1 to June 10, and C-season June 10 – November 1. Since the implementation of Amendment 85, the AFA C/P sector allocation of Pacific cod is apportioned only to the A and B seasons and not to the C season. With regards to directed fishing closures for the sector, in general, directed fishing has closed prior to the sector's regulated closure date. For example, during the A-season, the BSAI Pacific cod fishery tended to close between mid-February to mid-March, while the B-season for most the years was only open for one day. Starting in 2014, the fishery for the sector was generally open for the entire regulated period in the BS, while the AI tended closed in February and March for all non-CDQ Pacific cod sectors due to Steller sea lion protection measures.

Provided Table 8-26 are halibut, red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook salmon PSC by the AFA C/P sector while targeting BSAI Pacific cod from 2005 through 2018. Most PSC levels since implementation of Amendment 85 in 2008 have declined. Halibut, as noted in Figure 4-7, has declined from a high of 54 mt in 2005 to a low of 1 mt in 2010 and 2013. Crab PSC has also declined since implementation of Amendment 85 and salmon bycatch has declined which is likely the result of the utilization of salmon avoidance measures.

Using observer data, the port call indicator in Figure 4-7 and Table 8-27 depicts the annual number of port calls by port for those AFA C/Ps that target BSAI Pacific cod. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Most of the port calls over the 2008 through 2018 period were to Unalaska/Dutch Harbor.

From a community perspective, the owner city indicator shown in Figure 4-7 notes that nearly all of the AFA C/P owners report Seattle as their residence. One AFA C/P owner reported Anchorage as their residence between 2011 and 2018, while from 2005 through 2008, an AFA C/P owner reported Washington (other than Seattle) as their residence.

In summary, the AFA C/P sector while utilizing its BSAI allocation has been stable since implementation Amendment 85 in 2008. The number of AFA C/Ps targeting BSAI Pacific cod has remained constant throughout the 2008 through 2018 period and the season length has, in recent years, increased in length due to more effective management by the Pollock Conservation Cooperative. The sector has routinely harvested all of its initial allocation and all reallocations of BSAI Pacific cod to the sector. The sector has also been successful in lowering its PSC for halibut, crab, and salmon since implementation of Amendment 85.

4.2.7 Amendment 80

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

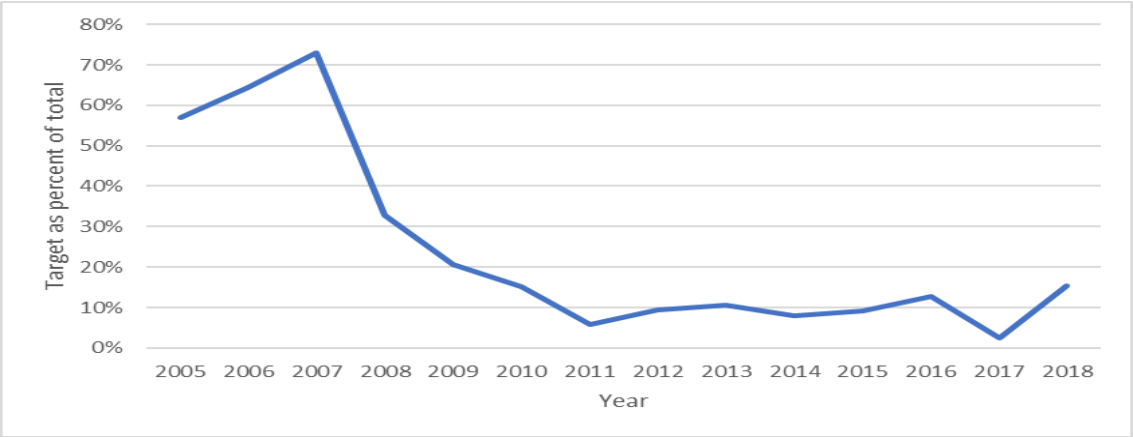
Figure 4-8 BSAI Pacific cod indicators for the Amendment 80 sector from 2005 through 2018

The Amendment 80 Program, implemented in 2008, initial qualified 28 C/Ps. The Amendment 80 Program allocates a portion of the TAC for Pacific ocean perch in the AI, Atka mackerel, yellowfin sole, rock sole, and flathead sole in the BSAI, along with an allowance of PSC quota for halibut and crab to the sector. In addition, Amendment 85 allocated the sector a 13.4 percent allocation of the BSAI Pacific cod.

Table 4-10 shows that in 2019, there were a total of 26 LLP licenses with an attached Amendment 80 endorsement. Of those 26 LLP licenses, 19 LLP licenses had an AI endorsement, leaving 7 LLP licenses with a BS only endorsement. From 2008 to 2010, eight of the Amendment 80 endorsed LLP licenses were in the Amendment 80 limited access sector. From 2011 and 2017, the Amendment 80 endorsed LLP licenses were in two cooperatives until, in 2018, when all the Amendment 80 endorsed LLP licenses were in one cooperative.

Prior to the implementation of Amendment 85 in 2008, the Amendment 80 sector shared a BSAI Pacific cod allocation with the AFA C/P sector of 23.5 percent, so initial and final allocation data and the associated total BSAI Pacific cod catch as a percent of the initial allocation for the Amendment 80 sector is not available. Figure 4-8 and Table 8-29 show the sector on average harvested 92 percent of its initial BSAI Pacific cod allocation since the implementation of Amendment 85. The sector fully harvested its initial allocation in 2009, 2010, and 2013, while in five other years the sector harvested 90 percent or more of their initial allocation. Since implementation of Amendment 85, NMFS, as required by regulation, reallocated Pacific cod to the sector seven out the past 11 years. The largest reapportionment was 6,100 mt in 2013.

As noted in Figure 4-9, since implementation of Amendment 85 in 2008, a large portion of the sector's Pacific cod catch is incidental to their primary Amendment 80 fisheries. Since 2008, on average, 13 percent of the total BSAI Pacific cod harvested by the Amendment 80 sector is accounted for as targeted catch. Most of the targeted Pacific cod originates from test tows for Amendment 80 species that were not intended as Pacific cod target tows, but there were a few intended Pacific cod target tows to assist in facilitating a vessel's mothership processing activity.



Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-9 BSAI Pacific cod target as a percent of total BSAI Pacific cod by the Amendment 80 sector

One of the primary reasons the Amendment 80 sector does not harvest their entire BSAI Pacific cod allocation is likely due to how the Amendment 80 cooperative allocation is managed. Unlike the other Pacific cod sectors (except CDQ), Pacific cod for an Amendment 80 cooperative is managed as a hard cap. Under a hard cap, a cooperative is prohibited from exceeding any cooperative allocation. If a cooperative has harvested its entire cooperative allocation of a species, the cooperative is restricted from any directed fishing that caught that species. Although a hard cap is considered an appropriate management tool when a sector is rationalized, hard cap management does have the potential to result in a

cooperative's catch of one species constraining the cooperative's directed fishing for other species. Recognizing this hard cap limitation and the importance of BSAI Pacific cod as a bycatch species while targeting its Amendment 80 species, the Amendment 80 sector manages its BSAI Pacific cod allocation so as not to lose its opportunity to harvest its primary Amendment 80 species since Pacific cod incidental catch can be variable. This is likely a primary reason for BSAI Pacific cod remaining unharvested at the end of the year.

In the federal BSAI Pacific cod target fishery, the number of Amendment 80 vessels ranged from a low of 10 in 2017 to a high of 22 in 2007. Factoring in incidental Pacific cod, the total number of vessels in the sector that harvested any BSAI Pacific cod has ranged from a low of 18 to high of 22. Most of the incidental catch of Pacific cod was from Amendment 80 vessels targeting mostly their flatfish allocations. Activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector were limited to mostly the CDQ fishery. On average, six Amendment 80 vessels participated in the CDQ fishery with catch ranging from between 400 mt to 600 mt prior to Amendment 85 to generally over 3,600 mt after 2013.

The Amendment 80 sector also harvests AI Pacific cod on an annual basis. The number of Amendment 80 vessels during 2005 through 2018 that have harvested AI Pacific cod has fluctuated between a low of seven vessels in 2016 to a high of 15 vessels in 2007. As a percent of total non-CDQ BSAI Pacific cod catch for the sector, the AI fishery has declined since in 2008. From 2004 through 2007, on average the AI accounted for 29 percent of the total non-CDQ BSAI Pacific cod catch. Since 2008, the AI on average has accounted for 12 percent of total non-CDQ BSAI Pacific cod catch.

Provided in Figure 4-8 and Table 8-30 are annual estimates the Amendment 80 sector's estimated gross first wholesale value for BSAI Pacific cod, gross first wholesale value as a percent of total gross revenue, and total gross revenue of all fisheries (state and federal). As seen in the figure and table, the estimated gross first wholesale value for the sector has declined since implementation of Amendment 85 in 2008. Overall, gross first wholesale value has ranged from a low of $26 million in 2009 to a high of $67 million in 2007. Looking at the value of the BSAI Pacific cod fishery for the Amendment 80 sector relative to the total gross revenue, the fishery on average contributed approximately 11 percent of the total revenue from 2008 to 2017, whereas in the three years prior to the implementation of Amendment 85, Pacific cod contributed 21 percent of the total gross revenue for the sector.

There are three BSAI Pacific cod seasons for the Amendment 80 sector: A-season which is January 20 to April 1, B-season which is April 1 to June 10, and C-season June 10 – December 31 (changed from November 1 in 2015). By regulation, the Amendment 80 sector allocation of Pacific cod is apportioned only to the A and B seasons and not to the C season. NMFS does not issue directed fishing closures specific to the Amendment 80 allocation species. NMFS directed fishing closures for the overall AI non-CDQ Pacific cod does apply to an Amendment 80 cooperative.

Provided in Table 8-31 are halibut, red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook salmon PSC by the Amendment 80 sector while targeting BSAI Pacific cod from 2005 through 2018. Most PSC levels since implementation of Amendment 85 have declined. Halibut, as noted in Figure 4-8 , has declined from a high of 786 mt in 2005 to a low of less than 8 mt in 2017.

Using observer data, the port calls indicator in Figure 4-8 and Table 8-32 depicts the annual number of port calls by port for those Amendment 80 vessels that target BSAI Pacific cod. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Most of the port calls over the 2008 through 2018 period were to Unalaska/Dutch Harbor, but other communities for port calls were Adak, St. Paul, Togiak, Sand Point and other unknown communities.

From a community perspective, the owner city indicator shown in Figure 4-8 notes that nearly all the Amendment 80 vessel owners report Seattle as their residence. In 2018, two Amendment 80 vessel

owners reported their residency as Washington other than Seattle and five owners report other unknown communities as their residence.

In summary, the Amendment 80 sector has shown stability in the BSAI Pacific cod fishery since Amendment 85 implementation in 2008. The number of Amendment 80 vessels active in the directed BSAI Pacific cod fishery decline significantly starting in 2008, which was likely a result of the Amendment 85 allocation and the implementation of Amendment 80 cooperative structure. The sector has, on average, harvested 92 percent of its initial Pacific cod allocation even though the primary usage of the allocation is for incidental catch while fishing for their Amendment 80 species. The sector's BSAI Pacific cod season has remained open for the entire regulation period since implementation of Amendment 85, which is likely due in part to the effective cooperative management of the Pacific cod allocation by the sector. The sector has also been successful in lowering its halibut mortality and crab, Chinook salmon, and non-Chinook salmon PSC while targeting BSAI Pacific cod since implementation of Amendment 85.

4.2.8 Pot C/Ps

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-10 BSAI Pacific cod indicators for the pot C/P sector from 2005 through 2018

The pot C/P sector includes vessels operating as C/Ps using pot gear. As of January 1, 2003, pot C/Ps must have a Pacific cod pot C/P endorsement on their LLP license to target BS and AI Pacific cod with pot gear and process it onboard. These are large and medium-sized C/Ps that focus on crab fisheries in the BS and produce headed and gutted products principally from Pacific cod harvested in the BSAI and GOA.

Table 4-10 shows that in 2019, there were a total of eight LLP licenses with a Pacific cod pot C/P endorsement for the BS. Of those eight LLP licenses, five LLP licenses had an AI endorsement, three LLP licenses had a BS Pacific cod HAL C/P endorsement, and three LLP licenses had an AI Pacific cod HAL C/P endorsement.

The pot C/P sector is allocated 1.5 percent of the BSAI Pacific cod TAC. Looking at the catch indicators of Figure 4-10 and Table 8-34, the sector on average harvested 106 percent of their initial allocation[13] from 2005 to 2007, and 149 percent since implement of Amendment 85 in 2008. Reallocation amounts have ranged from a low of none in 2011 and 2018 to a high of 4,500 mt in 2015. Including the reallocated Pacific cod, the sector on average has harvested all their final allocation of Pacific cod on an annual basis.

In the federal BSAI Pacific cod target fishery, the number of participating pot C/Ps has remained fairly consistent since implementation of Amendment 85. Overall, vessel numbers in the federal BSAI Pacific cod target fishery has ranged from a low of two C/Ps in 2005 to a high of 6 C/Ps in 2008. Nearly all its sector allocation is harvested in the BS, but in 2008, the sector harvested more Pacific cod from the AI then the BS. Similar to the pot CV ≥ 60 ft sector, the pot C/P sector only targets Pacific cod, they do not catch Pacific cod as incidental catch in other groundfish fisheries. Fishing activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector is very limited. There were between one to four C/Ps participating in the AI GHL fishery from 2008 through 2011 and one C/P in 2018. In the CDQ fishery, one to two C/Ps participating for most years.

Provided in Figure 4-10 and Table 8-35 are pot C/P sector annual gross first wholesale value for BSAI Pacific cod, gross wholesale value of BSAI Pacific cod as a percent of total gross revenue, and total gross revenue of all fisheries (state and federal). Looking at the BSAI Pacific cod wholesale value for the sector relative to the total gross revenue, the fishery accounted for 41 percent of the total revenue on average from 2005 to 2017. The wholesale value of the BSAI Pacific cod fishery for the pot C/P sector has ranged from a low of $4 million in 2009 to a high of $10 million in 2015.

Looking at PSC for the pot C/P sector, there are no PSC limits for halibut, crab, and salmon for the sector. Provided in Figure 4-10 is annual halibut mortality for the sector, while Table 8-36 provides data showing annual halibut, red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook salmon PSC for the sector while targeting BSAI Pacific cod from 2005 through 2018. Halibut mortality for the sector ranges from a low of less than one mt in most years to a high of slightly over one mt in 2011.

There are two BSAI Pacific cod seasons for the pot C/P sector: A-season which is January 1 to June 10 and B-season which is September 1 to December 31. Typically, the sector has a short A-season closing at the end of January or beginning of February, while the B-season generally has closed in October or November.

Using observer data, the port call indicator in Figure 4-10 and Table 8-37 depicts the annual number of port calls by port for those pot C/Ps that target BSAI Pacific cod. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Most of the port calls over the 2008 through 2018 period were to Unalaska/Dutch Harbor, Akutan, and St. Paul but other communities for port calls were Adak, Port Moller, King Cove,

[13] A portion of the initial allocation for the fixed gear sectors is used for the HAL/pot incidental catch allowance, so the initial allocation utilized in this report includes the ICA allowance.

and other unknown communities. On average, the pot C/P sector, with directed BSAI Pacific cod onboard, made 17 port calls per year over the 2008 through 2018 period.

Looking at the owner city indicator shown in Figure 4-10 and in Table 8-38 that nearly all the pot C/P owners report Washington (other than Seattle) and Seattle as their residence. In 2018, two pot C/P owners reported their residency as Washington (other than Seattle) and two reported Seattle as their residency. Other communities with reported residency of pot C/Ps was Anchorage starting in 2012 and Kodiak only in 2005.

Overall the pot C/P sector has remained relatively stable during 2008 through 2018 period. In general, four to five pot C/Ps are active in the BSAI Pacific cod fishery annually harvesting all their initial allocation and generally all the Pacific cod reallocated to the sector later in the fishing year. Season length has generally remained consistent since implementation of Amendment 85 but does close prior to the regulatory date for both A and B season. Finally, the value of the BSAI Pacific cod fishery for the sector relative to the total gross revenue for all fisheries for the sector has remained relatively stable throughout the 2005 through 2017 period.

4.2.9 HAL C/P

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Figure 4-11 BSAI Pacific cod indicators for the HAL C/P sector from 2005 through 2018

The HAL C/P sector includes vessels operating as C/Ps using HAL gear. As of January 1, 2003, HAL C/Ps must have a 'Pacific cod HAL C/P' endorsement on their LLP license to target BSAI Pacific cod with HAL gear and process it onboard. These vessels, also known as freezer longliners, focus their effort on BSAI Pacific cod. Sablefish and Greenland turbot are secondary targets for some C/Ps.

Table 4-10 shows that in 2019, there were a total of 36 LLP licenses with a Pacific cod HAL C/P endorsement for the BS. Of those 36 LLP licenses, 34 LLP licenses had an AI endorsement, three LLP licenses had a BS Pacific cod pot C/P endorsement, and three LLP licenses had an AI Pacific cod pot C/P endorsement.

Since 2006, most of the holders of LLP licenses endorsed as Pacific cod HAL C/Ps in the BSAI have been members of the voluntary Freezer Longline Conservation Cooperative (FLCC). In June 2010, the remaining LLP holders joined the cooperative, so that with the start of the 2010 B-season on August 15, all holders of LLP licenses authorizing the use of these C/Ps were members of the cooperative. Each year, the FLCC issues quota shares to members in proportion to historical fishing activity associated with each LLP of the BSAI HAL C/P sector allocation. FLCC members are free to exchange their quota shares among themselves, and to stack quota shares on individual HAL C/Ps.

The HAL C/P sector is allocated 48.7 percent of the BSAI Pacific cod TAC. Looking at the catch indicators of Figure 4-11 and Table 8-39, the sector on average harvested 118 percent of its initial allocation[14] from 2005 to 2007, and 100 percent since implement of Amendment 85 in 2008. Reallocation amounts to this sector have ranged from a low of none in 2018 to a high of 22,175 mt in 2005. Since implement of Amendment 85, the largest reallocation to the HAL C/P sector was in 2015 at 10,800 mt. Including the reallocated Pacific cod, the sector on average has harvested 97 percent of final allocation of Pacific cod on an annual basis since implementation of Amendment 85.

In the federal BSAI Pacific cod target fishery, the number of participating HAL C/Ps directed fishing for BSAI Pacific cod has averaged 31, The number of participating C/Ps in the directed BSAI Pacific cod fishery has ranged from a low of 25 C/Ps in 2018 to a high of 39 C/Ps in 2005, 2006, and 2008. On average, 97 percent of the sector allocation was harvested in the BS. As noted in Table 8-39, the HAL C/P sector utilizes their allocation primarily for Pacific cod directed fishing. Fishing activity in other BSAI Pacific cod fisheries (i.e., GHL and CDQ) for the sector is primarily limited to the CDQ fishery. There were between 17 and 11 HAL C/Ps participating in the CDQ fishery on annual basis from 2005 through 2018. Participation in the GHL fishery has been limited with some participation in the AI GHL fishery from 2006 through 2011.

Provided in Figure 4-11 and Table 8-40 are HAL C/P sector annual gross first wholesale value for BSAI Pacific cod, gross wholesale value of BSAI Pacific cod as a percent of total gross revenue, and total gross revenue of all fisheries (state and federal). Looking at the BSAI Pacific cod wholesale value for the sector relative to the total gross revenue, the fishery on average accounted for 67 percent of the total revenue from 2005 to 2017, which indicates the BSAI Pacific fishery contributes a large share of sector's total combined gross revenue. The wholesale value of the BSAI Pacific cod fishery for the HAL C/P sector has ranged from a low of $103 million in 2009 to a high of $187 million in 2017.

Looking at PSC for the HAL C/P sector, there are no PSC limits for crab, and salmon for the sector. Provided in Figure 4-11 is annual halibut mortality for the sector, while Table 8-41 provides data showing annual halibut mortality, red king crab, C. bairdi, C. opilio, Chinook salmon, and non-Chinook salmon PSC for the sector while targeting BSAI Pacific cod from 2005 through 2018. Halibut mortality for the sector has declined since 2012, from a high of 556 mt in 2009 to a low of 126 mt in 2018.

[14] A portion of the initial allocation for the fixed gear sectors is used for the HAL/pot incidental catch allowance, so the initial allocation utilized in this report includes the ICA allowance.

The BSAI target fishery is divided into two regulatory seasons, January 1 to June 10, and June 10 to December 31. In past years, the HAL C/Ps generally began fishing for Pacific cod on January 1 and continued until the allocation was fully harvested by February, March, or April. They then started fishing Pacific cod again from August 15, when the next halibut PSC allowance became available, through November or December. Since the implementation of the voluntary fishery cooperative, beginning with the "B" season in 2010, the seasons have remained open throughout the regulatory period, presumably because the cooperative allows vessels to spread out harvests.

Using observer data, the port call indicator in Figure 4-11 and Table 8-42 depicts the annual number of port calls by port for those HAL C/Ps that target BSAI Pacific cod. In general, vessels during a port call could conduct crew transfers, purchase provisions and fuel, offload product, and purchase other local goods and services. Most of the port calls over the 2008 through 2018 period were primarily to Unalaska/Dutch Harbor, but St. Paul also had a modest number of port calls by the HAL C/P sector. On average, the HAL C/P sector, with directed BSAI Pacific cod onboard, made 247 port calls per year over the 2008 through 2018 period.

Looking at the owner city indicator shown in Figure 4-11 and in Table 8-43 that nearly all the HAL C/P owners report Seattle and Washington (other than Seattle) as their residence. The number of HAL C/Ps owners reporting Seattle as their residence has declined from a high of 31 in 2005 and 2006 to a low of 15 in 2018 and Petersburg saw a decline from a high five in 2010 and 2011 to none starting 2016. Washington (other than Seattle), Anchorage, Oregon, and Kodiak all had an increase in the number of HAL C/Ps owners in the last five years.

Overall the HAL C/P sector has successfully extended its BSAI Pacific cod fishery to a year-round fishery all while harvesting all of its initial BSAI Pacific cod allocation and nearly all the Pacific cod reallocated to the sector. The sector has seen a modest reduction in the number of active C/Ps in the BSAI Pacific cod fishery which is likely due to the formation of the voluntary FLCC. This reduction in the number of active HAL C/Ps all while maintaining the same level of fishing capacity has likely resulted in some increase in harvesting and processing efficiency by the sector. The success of the voluntary FLCC combined with the Amendment 85 allocation has also likely contributed to the success of the sector in reducing its halibut mortality.

5 Future Council Action

As noted in Section 2 there are three steps in the allocation review process. Step one identified the trigger for an Amendment 85 allocation review, which was established as every 10-years. Step two is the Amendment 85 allocation review. If, during that review, Amendment 85 and the appropriate BSAI groundfish FMP objectives are being met and no major changes have occurred within the fishery, then the allocation review is complete, and the time trigger for BSAI Pacific cod fishery allocation review is reset. If, however, the objectives of Amendment 85 and those appropriate BSAI groundfish FMP objectives are not being met and/or major changes have occurred in the fishery, then the standard Council process for an FMP amendment is initiated, which is step three.

Overall, the allocation review notes that some sectors do not fully harvest all their BSAI Pacific cod allocations, which may result in unharvested BSAI Pacific cod on annual basis. In addition, there have been changes in the BSAI Pacific cod fishery, which, in part, could be due to new management regulations (i.e., BS and AI Pacific cod split starting in 2014, new Steller sea lion protection measures implemented in 2015, and the addition of the BS GHL fishery starting in 2014) and changes in the BSAI Pacific cod population and environmental/ecosystem (see Section 3). Given these issues, the Council could initiate a process to consider whether an FMP amendment to develop new sector allocations and/or modify objectives. Whether these changes in management, population, and environmental/ecosystem along with Amendment 85 challenges for some sectors are sufficient to develop a new allocation program is a policy decision by the Council.

Nevertheless, the Council recognizing the changes in the fishery since implementation of Amendment 85 has not been idle in managing the fishery. The Council has taken two BSAI Pacific cod actions: 1) Amendment 113 which set-aside a portion of AI Pacific cod for harvest by CVs delivering to shoreplants in the AI, and 2) Amendment 119 to limit certain Amendment 80 and AFA C/Ps acting as motherships when receiving BSAI non-CDQ Pacific cod deliveries from trawl CVs. In addition, the Council has recently tasked staff to prepare several documents for future Council meetings: 1) an RIR to limit access to the parallel BSAI Pacific cod fishery for Federal fishery participants, 2) a scoping paper on the BSAI Pacific cod trawl CV management, 3) a discussion paper on the BSAI Pacific cod pot CV management, 4) a discussion paper on BS Pacific cod pot C/P participation, and 5) a discussion paper on solutions for reducing stranded BSAI Pacific cod. Recognizing these changes in the fishery, the Council has responded by continuing to modify the management of the BSAI Pacific cod fishery to promote sustainable fisheries and communities as well as promote equitable and efficient use of the BSAI Pacific cod resource.

In general, it is likely an extremely challenging task to design a new BSAI Pacific cod allocation program that would guarantee a fully harvested TAC each year due to the dynamic nature of the BSAI Pacific cod fishery and the Council's intended goals of Amendment 85. Despite these challenges, the Council in 2008 created an allocation program that provides the framework, when conditions are right, to harvest nearly all the BSAI Pacific cod allocations. Recognizing there are factors that will continue to hamper fully harvesting all of the BSAI Pacific cod TAC, the sector allocations combined with the framework for reallocating Pacific cod between sectors provides stability for many of the sectors which assisted in reducing disruptions in their BSAI Pacific cod fishery that ultimate improved social and economic structures for those sectors all while also balancing the Council's intent to provide entry level and local opportunities for small vessels and improve optimum yield of the BSAI Pacific cod resource.

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8 Appendix

Table 8-1 Trawl CV BSAI Pacific cod allocation and catch data

Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total catch (mt)	Total catch as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
2005	44,779	35,847	-8,932	80%	64	109	30,920	35,625	80%	99%	-	-	107	6
2006	41,251	33,824	-7,427	82%	56	103	29,576	33,367	81%	99%	2,864	19	99	8
2007	37,110	34,110	-3,000	92%	64	112	28,666	31,480	85%	92%	2,796	18	198	9
2008	33,692	30,842	-2,850	92%	65	108	27,528	30,784	91%	100%	2,530	22	62	7
2009	34,841	29,740	-5,101	85%	54	110	25,727	29,390	84%	99%	544	16	114	5
2010	33,309	28,175	-5,134	85%	48	103	25,178	28,010	84%	99%	2,064	13	*	2
2011	44,987	39,897	-5,090	89%	50	104	34,545	39,669	88%	99%	*	2	*	2
2012	51,509	47,749	-3,760	93%	55	105	39,870	46,323	90%	97%	2,351	14	1,376	3
2013	51,312	43,812	-7,500	85%	53	101	38,792	43,427	85%	99%	1,117	5	99	3
2014	50,107	43,107	-7,000	86%	48	98	38,727	41,878	84%	97%	1,049	4	113	3
2015	49,224	37,854	-11,370	77%	48	99	31,561	37,474	76%	99%	*	2	72	4
2016	49,638	45,138	-4,500	91%	56	101	40,807	44,812	90%	99%	871	6	814	5
2017	47,246	44,163	-3,083	93%	61	102	37,449	43,394	92%	98%	-	-	1,148	5
2018	40,227	38,027	-2,200	95%	65	105	33,675	37,656	94%	99%	887	6	729	5

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-2 Trawl CV BSAI Pacific cod exvessel price, BSAI Pacific cod gross exvessel value (millions $), BSAI Pacific cod gross exvessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million $), and total gross revenue (millions $)

Year	Exvessel price ($ per lbs.)	Gross exvessel value (million $)	Gross exvessel value as a % of total gross revenue	Gross first wholesale value (million $)	Total gross revenue (millions $)
2005	0.23	18	7%	60	266
2006	0.34	25	9%	55	280
2007	0.42	29	11%	70	267
2008	0.53	36	11%	65	315
2009	0.22	14	7%	34	216
2010	0.22	14	7%	41	207
2011	0.26	23	7%	67	310
2012	0.30	31	9%	75	330
2013	0.23	22	7%	60	301
2014	0.25	23	7%	62	307
2015	0.22	18	6%	53	284
2016	0.25	24	9%	70	279
2017	0.28	26	9%	75	291

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-3 Halibut and crab PSC along with salmon catch for the trawl CV sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	596	586	427	291	181	255	238	429	309	281	236	294	221	205
Red King crab	2,963	22	25	1,249	475	437	2,109	316	2	587	60	585	361	200
C. bairdi	57,138	56,284	28,355	34,632	6,778	21,714	12,206	8,035	6,313	8,304	10,247	11,069	9,201	1,945
C. opilio PSC (COBLZ)	59	12	89	349	251	14	42	0	321	2,291	71	5	0	
Other C. opilio	6,485	18,274	8,406	17,657	8,144	4,003	5,702	5,902	4,814	1,640	1,072	30	701	760
Chinook	1,867	1,421	3,577	1,609	904	1,045	404	775	862	1,243	1,164	1,902	1,550	385
Non-chinook	556	1,409	720	69	53	17	84	5	143	546	294	136	84	1

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-4 Total number of deliveries of targeted BSAI Pacific cod and total number of ports of delivery for the trawl CV sector from 2005 through 2018

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of ports	7	7	6	7	7	5	8	6	8	6	6	5	5	7
Total deliveries	505	539	611	644	478	498	625	667	592	600	529	603	502	522

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-5 Reported ownership address for trawl CVs from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	65	67	72	73	70	69	68	72	74	74	75	77	76	73
OR	21	18	16	16	17	17	18	17	13	12	11	12	13	12
WA	9	9	13	10	12	8	9	6	8	7	7	7	6	11
KODIAK	6	4	5	5	5	5	7	7	6	5	5	5	7	8
OTH	4	3	3	3	2	3	2	3			1			1
GIRDWOOD	1	1	1											
DUTCH HARBOR			1											
SAND POINT	2	1	1	1	3									
ANCHORAGE	1													
PETERSBURG					1	1								
Total	109	103	112	108	110	103	104	105	101	98	99	101	102	105

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-6 HAL CVs ≥ 60 ft sector BSAI Pacific cod allocations and catch data

Sector	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total catch (mt)	Total catch as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
HAL CV≥60	2005	290	230	-60	79%	3	23	4	19	6%	8%	-	-	*	2
	2006	267	267	0	100%	2	21	*	25	9%	9%	-	-	*	2
	2007	240	240	0	100%	2	17	*	15	6%	6%	-	-	-	-
	2008	303	0	-303	0%	1	24	*	64	21%		-	-	-	-
	2009	314	2	-312	1%	0	18	0	18	6%	925%	-	-	-	-
	2010	300	1	-299	0%	1	18	*	31	10%	3081%	-	-	-	-
	2011	405	15	-390	4%	1	17	*	31	8%	207%	-	-	-	-
	2012	465	30	-435	6%	0	15	0	22	5%	74%	-	-	-	-
	2013	463	13	-450	3%	0	17	0	13	3%	98%	-	-	-	-
	2014	452	25	-427	6%	0	12	0	7	1%	26%	-	-	-	-
	2015	444	20	-424	5%	0	15	0	11	2%	55%	-	-	-	-
	2016	448	0	-448	0%	0	15	0	12	3%		-	-	-	-
	2017	426	0	-426	0%	0	8	0	11	3%		-	-	-	-
	2018	363	0	-363	0%	0	15	0	8	2%		-	-	-	-

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-7 HAL CVs ≥ 60 ft sector BSAI Pacific cod exvessel price, BSAI Pacific cod gross exvessel value (millions $), BSAI Pacific cod gross exvessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million $), and total gross revenue (millions $)

Year	Exvessel price ($ per lbs.)	Gross exvessel value ($)	Gross exvessel value as a % of total gross revenue	Gross first wholesale value ($)	Total gross revenue (millions $)
2005	0.28	11,371	0%	31,923	29
2006	0.40	22,033	0%	41,444	37
2007	0.46	15,034	0%	33,648	29
2008	0.56	78,931	0%	135,226	43
2009	0.21	8,750	0%	21,145	21
2010	0.26	17,835	0%	44,887	30
2011	0.33	22,574	0%	52,221	37
2012	0.35	17,130	0%	36,399	23
2013	0.28	7,918	0%	17,752	24
2014	0.27	3,964	0%	9,772	13
2015	0.29	7,078	0%	15,311	20
2016	0.23	6,046	0%	18,653	19
2017	0.32	7,847	0%	19,393	9

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-8 Halibut PSC and crab and salmon catch by the HAL CVs ≥ 60 ft sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	0.09	*	*	*	*	*	*	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Red King crab	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. bairdi	0	0	*	*	0	0	0	0	0	0	0	0	0	0
C. opilio PSC (COBLZ)	1	0	0	0	0	0	*	0	0	0	0	0	0	0
Other C. opilio	1	*	*	*	0	0	0	0	0	0	0	0	0	0
Chinook	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-chinook	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-9 Reported ownership address for HAL CVs ≥ 60 ft vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	6	6	6	8	8	6	7	6	8	4	6	5	2	7
WA	3	5	3	5	3	4	3	2	2	3	3	3	3	2
KODIAK	4	6	3	5	2	3	3	4	4	3	2	3	2	2
CORDOVA	1	1	1	1	1	1				1	1	1		1
YAKUTAT														1
OTH	1		1	1	1	1	1		1		1			1
SEWARD														1
OR	4	3	2	2	3	2	2	2	2	1	1	1	1	
ANCHORAGE												1		
HOMER	2		1	1										
DUTCH HARBOR				1				1						
SITKA	1					1	1				1	1		
PETERSBURG	1													
Total	23	21	17	24	18	18	17	15	17	12	15	15	8	15

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-10 Pot CVs ≥ 60 ft sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Non-CDQ Pacific cod federal target catch (mt)	Total federal non-CDQ Pacific cod catch (mt)	Total catch of BSAI Pacific cod as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
Pot CV≥60	2005	14,502	12,828	-1,674	88%	46	47	11,548	11,548	80%	90%	-	-	*	2
	2006	13,354	13,880	526	104%	48	48	12,836	12,842	96%	93%	*	2	*	1
	2007	12,006	12,129	123	101%	45	45	11,525	11,525	96%	95%	567	7	*	1
	2008	12,737	11,422	-1,315	90%	41	42	11,227	11,228	88%	98%	340	5	-	-
	2009	13,173	6,373	-6,800	48%	26	27	6,476	6,476	49%	102%	-	-	*	1
	2010	12,591	11,576	-1,015	92%	30	31	11,572	11,572	92%	100%	-	-	-	-
	2011	17,030	17,030	0	100%	33	33	16,378	16,378	96%	96%	-	-	-	-
	2012	19,509	13,209	-6,300	68%	29	29	12,709	12,709	65%	96%	-	-	-	-
	2013	19,434	13,434	-6,000	69%	31	31	12,411	12,411	64%	92%	-	-	-	-
	2014	18,976	14,476	-4,500	76%	31	31	11,123	11,123	59%	77%	-	-	-	-
	2015	18,641	11,891	-6,750	64%	23	23	10,385	10,385	56%	87%	-	-	-	-
	2016	18,798	12,098	-6,700	64%	25	25	11,018	11,018	59%	91%	-	-	-	-
	2017	17,889	13,889	-4,000	78%	34	34	13,720	13,720	77%	99%	-	-	-	-
	2018	15,235	15,235	0	100%	34	34	15,223	15,223	100%	100%	*	1	-	-

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-11 Pot CVs ≥ 60 ft sector BSAI Pacific cod exvessel price, BSAI Pacific cod gross exvessel value (millions $), BSAI Pacific cod gross exvessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million $), and total gross revenue (millions $)

Year	Exvessel price ($ per lbs.)	Gross exvessel value (millions$)	Gross exvessel value as a % of total gross revenue	Gross first wholesale value (millions $)	Total gross revenue (millions $)
2005	0.29	7	14%	20	52
2006	0.41	12	20%	21	59
2007	0.49	12	16%	26	77
2008	0.59	15	15%	24	97
2009	0.28	4	8%	7	51
2010	0.31	8	11%	17	74
2011	0.33	12	12%	28	98
2012	0.35	10	11%	21	88
2013	0.28	8	10%	17	80
2014	0.28	7	9%	17	78
2015	0.27	6	10%	14	65
2016	0.28	7	11%	17	64
2017	0.31	9	16%	24	57

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-12 Halibut, crab, and salmon morality for pot CVs ≥ 60 ft sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	1.65	1.71	0.21	2.23	0.09	1.20	3.29	2.15	0.61	0.43	0.47	0.70	0.62	0.17
Red King crab	2,994	3,652	22,733	20,358	1,437	1,069	7,866	1,834	22,430	19,061	19,875	309	8,716	242,567
C. bairdi	92,528	211,226	430,990	839,641	267,264	198,074	114,981	43,355	62,215	108,234	148,669	48,736	133,249	154,486
C. opilio PSC (COBLZ)	7,377	7,120	229,603	51,793	6,520	17,333	258	1	0	0	0	0	1,396	25
Other C. opilio	76,200	189,097	556,794	235,668	61,927	261,829	41,494	7,363	4,744	29,101	35,710	1,334	27,631	2,579
Chinook	0	0	8	0	0	0	0	0	0	0	0	0	0	0
Non-chinook	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-13 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for the pot CVs ≥ 60 ft sector from 2005 through 2018

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of ports	5	7	6	6	5	5	5	4	5	5	5	5	5	5
Total deliveries	308	425	349	317	118	215	293	208	176	186	167	200	267	236

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-14 Reported ownership address for Pot CVs ≥ 60 ft vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	22	22	26	26	17	16	18	15	15	13	12	13	14	13
WA	5	4	4	3	1		1	1	3	4	3	3	5	7
OR	8	6	6	5	4	4	5	5	7	7	4	4	6	5
HOMER	1	1		1	1	3	4	4	3	3	4	2	3	3
KODIAK	6	7	4	4	3	4	2		1			2	3	3
OTH	1	1	1	1		1	1	1	1	1				2
SELDOVIA		1	1	1			1	1		1		1	1	1
KING COVE		2												
KETCHIKAN	1	1	1											
KENAI								1		1			1	
ANCHORAGE	2	1	1	1	1	2	1	1	1	1			1	
DUTCH HARBOR	1	2	1			1								
Total	47	48	45	42	27	31	33	29	31	31	23	25	34	34

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-15 HAL/Pot CVs ≤ 60 ft sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total catch (mt)	Total catch as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
Pot & HAL CV<60	2005	1,354	2,601	1,247	192%	28	38	3,219	3,231	239%	124%	-	-		-
	2006	1,246	3,242	1,996	260%	28	45	3,900	3,924	315%	121%	*	2	1	3
	2007	1,121	2,928	1,807	261%	31	50	3,566	3,595	321%	123%	562	8	2	4
	2008	3,033	5,210	2,177	172%	31	55	5,085	5,132	169%	98%	388	10	4	4
	2009	3,137	4,434	1,297	141%	28	43	4,649	4,657	148%	105%	111	5	294	5
	2010	2,998	5,509	2,511	184%	23	39	5,511	5,527	184%	100%	-	-	230	4
	2011	4,055	9,005	4,950	222%	21	39	8,014	8,043	198%	89%	*	2	928	4
	2012	4,645	8,880	4,235	191%	24	38	8,871	8,888	191%	100%	2,821	8	2,311	5
	2013	4,627	9,177	4,550	198%	26	36	9,432	9,435	204%	103%	3,660	8	2,531	7
	2014	4,518	12,018	7,500	266%	20	25	12,411	12,412	275%	103%	11,401	18	2,016	5
	2015	4,438	10,630	6,192	240%	25	32	10,016	10,019	226%	94%	7,974	14	2,218	8
	2016	4,476	10,674	6,198	238%	22	32	10,296	10,303	230%	97%	16,053	24	2,020	3
	2017	4,259	9,271	5,012	218%	24	32	9,945	9,950	234%	107%	17,859	25	1,661	19
	2018	3,627	8,748	5,121	241%	29	46	8,552	8,579	237%	98%	17,533	37	1,554	24

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-16 HAL/Pot CVs ≤ 60 ft sector BSAI Pacific cod exvessel price, BSAI Pacific cod gross exvessel value (millions $), BSAI Pacific cod gross exvessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million $), and total gross revenue (millions $)

Year	Exvessel price ($ per lbs.)	Gross exvessel value (millions $)	Gross exvessel value as a % of total gross revenue	Gross first wholesale value (millions $)	Total gross revenue (millions $)
2005	0.30	2	10%	6	21
2006	0.43	4	12%	6	32
2007	0.49	4	11%	8	36
2008	0.60	7	14%	11	48
2009	0.27	3	11%	5	27
2010	0.29	4	10%	8	35
2011	0.33	6	11%	14	52
2012	0.35	7	18%	14	38
2013	0.28	6	19%	13	32
2014	0.28	8	27%	18	28
2015	0.27	6	22%	14	28
2016	0.29	6	20%	16	32
2017	0.31	7	22%	17	31

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-17 Halibut, crab, and salmon mortality for HAL/Pot CVs ≤ 60 ft sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	3	2	5	5	3	2	2	3	4	8	4	1	2	5
Red King crab	236	1,827	9,008	9,063	957	407	1,535	1,611	26,726	44,181	62,530	562	18,954	75,500
C. bairdi	33,556	56,191	125,930	340,701	151,108	66,444	69,718	40,604	63,933	235,063	230,399	115,826	188,181	85,461
C. opilio PSC (COBLZ)	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Other C. opilio	19,950	23,787	236,199	144,745	60,900	91,921	38,443	5,237	3,353	28,089	45,414	2,703	59,608	7,023
Chinook	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Non-chinook	0	0	1	0	0	0					0	0	0	0

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-18 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for the HAL/Pot CVs ≤ 60 ft sector from 2005 through 2018

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of ports	4	5	5	5	5	5	6	5	6	6	4	3	4	5
Total deliveries	257	233	295	318	300	199	257	391	406	752	511	707	696	645

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-19 Reported ownership address for HAL/Pot CVs ≤ 60 ft vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
KODIAK	**8**	**10**	**8**	**6**	**3**	**6**	**8**	**9**	**6**	**5**	**6**	**7**	**5**	**10**
HOMER	5	2	8	5	4	2	2	3	4	2	4	6	7	6
WA	1	8	8	8	7	6	8	7	5	1	1			4
OTH	2	1	1	1		1		2	1	1	2	2	3	4
WASILLA				1		1	1	2	2	3	2	2	2	3
DUTCH HARBOR	8	9	10	8	7	6	8	6	7	6	7	5	6	5
SAINT PAUL ISLAND					1									3
PETERSBURG	1			1	1	1			1		2	3	2	3
SEATTLE	3	5	3	4	4	4	2	1	3	3	3	3	3	2
DOUGLAS						1	1	1			1		1	1
DELTA JUNCTION				1	1	1	1			2		1	1	1
ANCHORAGE			1	1										1
GIRDWOOD				1										1
SEWARD	1					1	2	1	1	1	1	2	1	1
DILLINGHAM														1
OR		2	4	4	3		1		1					
KETCHIKAN		1	1	1										
KENAI					1	1	1							
NOME		1	1	1	1	2		1						
WILLOW		1	2	1	1									
FALSE PASS				1										
JUNEAU				1	1	2				1	1	1	1	
NIGHTMUTE									1					
SITKA				3	2	1	2	2	2		1			
CORDOVA	1			1										
KING COVE	1		2											
PORT LIONS	1			1		1		1						
KING SALMON	1	1			1									
ANCHOR POINT	2			2	2	1								
KLAWOCK									1		1			
SAND POINT					1									
CENTRAL						1								
AKUTAN	1			1										
CHIGNIK LAGOON		1												
NIKOLAEVSK	1	2			1		1	1						
ADAK	1	1	1	1	1		1	1						
MEKORYUK									1					
Total	38	45	50	55	43	39	39	38	36	25	32	32	32	46

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-20 Jig sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total catch (mt)	Total catch as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
JIG	2005	3,811	166	-3,645	4%	18	19	117	117	3%	71%	-	-	-	-
	2006	3,510	214	-3,296	6%	12	12	91	91	3%	43%	-	-	-	-
	2007	3,158	126	-3,032	4%	10	10	82	83	3%	66%	*	1	-	-
	2008	2,134	180	-1,954	8%	15	15	174	176	8%	98%	53	5	-	-
	2009	2,207	25	-2,182	1%	3	3	13	13	1%	50%	*	2	-	-
	2010	2,110	350	-1,760	17%	7	7	344	344	16%	98%	-	-	-	-
	2011	2,850	510	-2,340	18%	11	11	504	505	18%	99%	-	-	-	-
	2012	3,263	463	-2,800	14%	5	5	85	85	3%	18%	22	3	-	-
	2013	3,251	51	-3,200	2%	6	16	12	15	0%	29%	-	-	-	-
	2014	3,174	101	-3,073	3%	2	2	*	*	*	*	-	-	-	-
	2015	3,118	100	-3,018	3%	4	4	28	28	1%	28%	-	-	-	-
	2016	3,144	94	-3,050	3%	2	2	*	*	*	*	-	-	-	-
	2017	2,993	13	-2,980	0%	1	1	*	*	*	*	-	-	-	-
	2018	2,549	149	-2,400	6%	1	1	*	*	*	*	-	-	-	-

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-21 Jig sector BSAI Pacific cod exvessel price, BSAI Pacific cod gross exvessel value (millions $), BSAI Pacific cod gross exvessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million $), and total gross revenue (millions $)

Year	Exvessel price ($ per lbs.)	Gross exvessel value ($)	Gross exvessel value as a % of total gross revenue	Gross first wholesale value ($)	Total gross revenue ($)
2005	0.29	74,189	6%	199,970	1,335,763
2006	0.48	96,920	38%	150,181	252,865
2007	0.49	90,091	15%	185,818	598,984
2008	0.52	202,302	15%	373,203	1,349,211
2009	0.24	6,731	6%	14,360	114,011
2010	0.28	209,782	40%	501,823	519,540
2011	0.34	375,088	25%	849,102	1,475,746
2012	0.28	51,707	23%	135,650	221,325
2013	0.29	9,293	2%	20,606	467,904
2014	0.29	*	*	*	173,168
2015	0.28	17,031	13%	38,965	133,038
2016	0.31	*	*	*	128,203
2017	0.32	*	*	*	242,364

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-22 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for the jig sector from 2005 through 2018

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of ports	5	2	4	3	3	2	2	3	2	2	3	2	1	1
Total deliveries	95	85	65	102	14	81	127	64	10	2	10	13	4	8

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-23 Reported ownership address for jig vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
HOMER			1				1			1	1	1	1	1
WA	2	1		1			1				1			
AKUTAN	1		1	2	2	3	1	1	1	1				
OTH	1			1				1						
ANCHORAGE		2	3	3										
TOKSOOK BAY									6					
CHEFORNAK									2					
GOODNEWS BAY									1					
DUTCH HARBOR	9	8	3	2		1	1	1			2			
PETERSBURG	1													
PORT LIONS			1	1	1		1	1	1					
SAND POINT	1						2							
SITKA	1		1											
JUNEAU				1										
KING SALMON	1													
OR				2		1	1							
KODIAK	1	1		1		2	3	1				1		
KIPNUK									1					
MEKORYUK									3					
ADAK	1			1										
NEWTOK									1					
Total	19	12	10	15	3	7	11	5	16	2	4	2	1	1

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-24 AFA C/P sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Non-CDQ Pacific cod federal target catch (mt)	Total federal non-CDQ Pacific cod catch (mt)	Total catch of BSAI Pacific cod as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
AFA CP	2005					1	18	*	4,877			-	-	458	12
	2006					1	18	*	5,964			*	2	550	11
	2007					3	18	1,844	4,554			*	2	394	11
	2008	3,506	4,706	1,200	134%	1	18	*	4,599	131%	98%	-	-	563	12
	2009	3,626	4,826	1,200	133%	2	16	*	4,790	132%	99%	-	-	418	12
	2010	3,467	4,041	574	117%	2	16	*	4,023	116%	100%	-	-	580	13
	2011	4,682	6,432	1,750	137%	2	17	*	6,299	135%	98%	-	-	1,165	15
	2012	5,361	6,621	1,260	124%	4	17	94	6,190	115%	93%	-	-	2,103	16
	2013	5,340	6,740	1,400	126%	1	17	*	6,438	121%	96%	-	-	3,495	16
	2014	5,215	5,465	250	105%	1	17	*	4,380	84%	80%	-	-	2,095	16
	2015	5,123	3,823	-1,300	75%	2	17	*	3,571	70%	93%	*	1	2,322	16
	2016	5,166	3,816	-1,350	74%	2	17	*	3,675	71%	96%	*	1	2,976	17
	2017	4,917	4,712	-205	96%	2	17	*	4,700	96%	100%	*	1	2,364	17
	2018	4,186	4,028	-158	96%	2	17	*	4,004	96%	99%	-	-	2,195	17

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-25 AFA C/P sector BSAI Pacific cod gross first wholesale value (million $), gross first wholesale value as a percent of total gross revenue, and total gross revenue (millions $)

Year	Gross first wholesale value (millions $)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions $)
2005	9	1%	657
2006	14	2%	673
2007	14	2%	673
2008	11	2%	723
2009	7	1%	519
2010	8	1%	555
2011	13	2%	740
2012	11	1%	767
2013	10	1%	738
2014	8	1%	710
2015	7	1%	735
2016	8	1%	760
2017	11	1%	814

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-26 Halibut PSC along with crab and salmon catch for AFA C/P sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	54	34	25	2	2	1	2	0	1	8	4	10	17	10
Red King crab	75	7	21	60	0	25	51	0	0	0	0	13	0	0
C. bairdi	919	2,803	1,360	324	79	5	380	0	80	1,016	30	0	148	148
C. opilio PSC (COBLZ)														
C. opilio	116	996	681	0	0	0		0	0	207	0	15	0	0
Chinook	288	257	335	352	60	84	0	0	0	4	80	55	131	42
Non-chinook	12	7	80	1	7	1	0	0	0	0	0	304	0	0

Source: Pollock Conservation Cooperative Reports and AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-27 Port calls for AFA C/Ps with targeted BSAI Pacific cod from 2005 through 2018

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dutch Harbor	2	1	1		1	1	3	1	6	3	3
Adak									1		
Total number of port calls	2	1	1	0	1	1	3	1	7	3	3

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-28 Reported ownership address for AFA C/Ps from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	16	16	16	16	15	15	15	15	15	15	15	15	15	15
ANCHORAGE							1	1	1	1	1	1	1	1
WA	1	1	1	1										
Total	17	17	17	17	15	15	16	16	16	16	16	16	16	16

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-29 Amendment 80 sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Non-CDQ Pacific cod federal target catch (mt)	Total federal non-CDQ Pacific cod catch (mt)	Total catch of BSAI Pacific cod as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
AM80	2005					18	22	17,120	30,010			-	-	552	5
	2006					18	22	18,545	28,759			*	2	537	3
	2007					22	22	24,232	33,246			64	3	609	4
	2008	20,429	20,429	0	100%	11	22	5,079	15,437	76%	76%	-	-	819	4
	2009	21,125	24,125	3,000	114%	15	21	4,399	21,323	101%	88%	-	-	573	5
	2010	20,197	24,028	3,831	119%	16	20	3,459	22,980	114%	96%	*	1	1,067	7
	2011	27,277	27,277	0	100%	16	20	1,433	24,503	90%	90%	-	-	1,052	8
	2012	31,232	33,232	2,000	106%	14	19	2,607	27,510	88%	83%	-	-	1,100	7
	2013	31,112	37,212	6,100	120%	16	18	3,317	31,325	101%	84%	-	-	3,604	6
	2014	30,381	33,631	3,250	111%	13	18	2,193	27,368	90%	81%	-	-	2,129	6
	2015	29,846	32,216	2,370	108%	13	18	2,453	26,897	90%	83%	-	-	2,096	4
	2016	30,097	31,397	1,300	104%	15	19	3,644	28,536	95%	91%	*	1	2,244	6
	2017	28,647	28,647	0	100%	10	19	544	23,062	81%	81%	-	-	1,932	7
	2018	24,391	24,391	0	100%	16	19	3,458	22,390	92%	92%	-	-	1,842	8

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-30 Amendment 80 sector BSAI Pacific cod gross first wholesale value (million $), gross first wholesale value as a percent of total gross revenue, and total gross revenue (millions $)

Year	Gross first wholesale value (millions $)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions $)
2005	42	18%	237
2006	51	20%	257
2007	67	24%	275
2008	31	10%	301
2009	26	10%	261
2010	34	11%	317
2011	41	10%	423
2012	41	10%	429
2013	37	12%	319
2014	39	11%	354
2015	42	13%	324
2016	42	12%	352
2017	40	9%	437

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-31 Halibut PSC along with crab and salmon catch for Amendment 80 sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	786	801	613	42	75	35	19	39	48	33	36	28	8	36
Red King crab	1,753	3,796	1,565	116	1,339	427	135	30	396	0	257	164	53	18
C. bairdi	98,690	132,911	111,358	2,776	8,639	5,944	2,407	1,566	5,965	11,213	2,463	1,385	946	498
C. opilio PSC (COBLZ)	31,829	68,898	258,127	4,117	6,064	102	3,888	343	6,391	3,963	2,760	318	900	6
Other C. opilio	1,408	6,432	5,086	26	296	478	0	288	0	66	0	0	7	78
Chinook	1,649	1,952	2,605	76	232	123	0	152	2	57	112	527	19	856
Non-chinook	323	5,903	823	133	3	0	60	0	190	0	0	45	0	0

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-32 Port calls for Amendment 80 vessels with targeted BSAI Pacific cod from 2005 through 2018

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dutch Harbor	7	10	12	9	7	24	13	20	24	17	18
Other	1	2	4	4	2	2					1
Adak	2	4		1				2	5	1	
St Paul	1	1				1					
Togiak								1			
Sand Point					1						
Total number of port calls	11	17	16	14	10	27	13	23	29	18	19

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Other = Other unknow ports

Table 8-33 Reported ownership address for Amendment 80 vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	16	17	17	19	17	16	14	12	9	9	9	10	10	12
OTH	3	3	3	3	3	3	3	3	3	3	3	3	5	5
WA	3	2	2		1	1	3	4	6	6	6	6	4	2
Total	22	22	22	22	21	20	20	19	18	18	18	19	19	19

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city

Table 8-34 Pot C/P sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total catch (mt)	Total catch as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
Pot CP	2005	3,190	3,352	162	105%	2	2	*	*	*	*	-	-	-	-
	2006	2,938	3,053	115	104%	4	4	3,148	3,148	107%	103%	-	-	*	1
	2007	2,641	2,668	27	101%	3	3	2,755	2,755	104%	103%	-	-	*	1
	2008	2,274	3,089	815	136%	6	6	3,671	3,671	161%	119%	912	4	-	-
	2009	2,352	3,550	1,198	151%	4	4	3,513	3,513	149%	99%	*	2	-	-
	2010	2,248	3,350	1,102	149%	5	5	3,358	3,358	149%	100%	1,753	3	-	-
	2011	3,041	3,041	0	100%	4	4	3,098	3,098	102%	102%	*	1	-	-
	2012	3,484	4,284	800	123%	5	5	4,173	4,173	120%	97%	-	-	*	2
	2013	3,470	6,070	2,600	175%	3	3	6,332	6,332	182%	104%	-	-	*	1
	2014	3,389	5,889	2,500	174%	4	4	5,477	5,477	162%	93%	-	-	*	2
	2015	3,329	6,829	3,500	205%	4	4	6,166	6,166	185%	90%	-	-	*	2
	2016	3,357	6,607	3,250	197%	4	4	5,698	5,698	170%	86%	-	-	*	2
	2017	3,194	4,999	1,805	157%	4	5	4,921	4,921	154%	98%	-	-	*	1
	2018	2,720	2,720	0	100%	5	5	2,810	2,810	103%	103%	*	1	1,295	3

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-35 Pot C/P sector BSAI Pacific cod gross first wholesale value (million $), gross first wholesale value as a percent of total gross revenue, and total gross revenue (millions $)

Year	Gross first wholesale value (millions $)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions $)
2005	*	*	6
2006	6	45%	12
2007	6	57%	10
2008	7	36%	21
2009	4	37%	12
2010	5	26%	19
2011	5	29%	18
2012	6	31%	20
2013	7	49%	15
2014	8	39%	20
2015	10	53%	18
2016	8	47%	18
2017	9	39%	22

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-36 Halibut, crab, and salmon mortality for pot C/P sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	*	0.05	0.04	0.80	0.21	0.60	1.36	0.79	0.75	0.90	0.57	0.54	0.41	0.28
Red King crab	*	1,268	8,393	5,356	210	86	9,236	4,123	51,913	72,552	94,632	13,479	3,968	12,289
C. bairdi	*	26,539	134,457	225,788	115,137	24,420	26,888	18,090	100,697	179,499	217,500	99,345	15,944	19,223
C. opilio PSC (COBLZ)	*	0	36,696	0	0	0	0	0	0	0	0	0	0	0
Other C. opilio	*	0	0	38,278	53,317	8,978	621	0	3,949	346	967	147	242	19
Chinook	*	0	1	0	0	0	0	0	0	0	0	0	0	0
Non-chinook	*	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
*Denotes confidential data

Table 8-37 Port calls for the pot C/P sector with targeted BSAI Pacific cod from 2005 through 2018

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dutch Harbor	1	5	7	12	9	23	15	24	17	20	10
Akutan		1	1	3	1	4	5	5	2	2	1
St Paul	5		1	3					3	1	2
Adak			3	1							1
Other				1							
Port Moller											1
King Cove										1	
Total number of port calls	6	6	12	20	10	27	20	29	22	24	15

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTHER = other unknown port

Table 8-38 Reported ownership address for pot C/P vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
WA		2	1	1	1	2	2	2	2	2	2	2	2	2
SEATTLE	1	2	2	5	3	3	2	2	1	1	1	1	2	2
ANCHORAGE								1		1	1	1	1	1
KODIAK	1													
Total	2	4	3	6	4	5	4	5	3	4	4	4	5	5

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-39 HAL C/P sector BSAI Pacific cod allocations and catch data

	Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Vessel count for target fishery	Vessel count for all Pacific cod catch	Non-CDQ Pacific cod federal target catch (mt)	Total federal non-CDQ Pacific cod catch (mt)	Total catch of BSAI Pacific cod as a % of initial allocation	Total Pacific cod catch as a % of final allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
HAL CP	2005	77,344	99,519	22,175	129%	39	39	98,709	98,744	128%	99%	-	-	13,383	17
	2006	71,218	84,709	13,491	119%	39	39	84,514	84,599	119%	100%	417	7	12,756	18
	2007	64,030	68,105	4,075	106%	37	37	67,963	68,042	106%	100%	89	3	11,296	17
	2008	73,844	76,074	2,230	103%	39	39	75,492	75,543	102%	99%	*	1	16,414	17
	2009	76,375	84,075	7,700	110%	38	38	83,117	83,154	109%	99%	160	3	16,702	17
	2010	73,000	73,190	190	100%	36	36	71,486	71,546	98%	98%	*	2	15,734	15
	2011	98,733	99,853	1,120	101%	30	31	96,235	96,317	98%	96%	*	1	19,285	13
	2012	113,106	118,106	5,000	104%	31	33	112,902	112,983	100%	96%	-	-	16,270	11
	2013	112,671	115,171	2,500	102%	29	31	105,648	105,665	94%	92%	-	-	16,368	13
	2014	110,016	111,516	1,500	101%	29	30	105,595	105,603	96%	95%	-	-	16,827	15
	2015	108,071	118,871	10,800	110%	29	31	112,039	112,089	104%	94%	-	-	15,853	15
	2016	108,983	114,283	5,300	105%	30	31	110,560	110,621	102%	97%	-	-	16,276	12
	2017	103,712	107,589	3,877	104%	28	29	107,079	107,113	103%	100%	*	1	17,122	13
	2018	88,324	88,324	0	100%	25	26	87,596	87,668	99%	99%	-	-	13,136	11

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-40 HAL C/P sector BSAI Pacific cod gross first wholesale value (million $), gross first wholesale value as a percent of total gross revenue, and total gross revenue (millions $)

Year	Gross first wholesale value (millions $)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions $)
2005	137	69%	199
2006	150	68%	222
2007	138	67%	208
2008	153	64%	238
2009	103	62%	165
2010	107	59%	182
2011	162	63%	258
2012	170	70%	244
2013	124	68%	184
2014	150	66%	226
2015	176	71%	248
2016	164	73%	226
2017	187	71%	265

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-41 Halibut, crab, and salmon mortality for HAL C/P sector while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	551	400	444	564	556	471	477	549	470	406	295	194	169	115
Red King crab	14,499	6,887	6,196	5,055	4,146	1,026	2,636	2,956	5,434	7,245	3,646	4,060	2,745	6,217
C. bairdi	12,970	12,493	12,211	16,938	18,749	10,279	12,401	13,343	15,396	19,082	21,149	17,692	14,997	6,489
C. opilio PSC (COBLZ)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other C. opilio	370	649	738	934	2,574	306	1,428	348	599	50	9	31	57	50
Chinook	34	25	17	18	11	11	44	46	0	33	42	44	28	69
Non-chinook	52	86	83	55	19	21	0	0	0	0	93	168	165	171

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-42 Port calls for the HAL C/P sector with targeted BSAI Pacific cod from 2005 through 2018

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dutch Harbor	121	168	141	203	234	272	278	278	277	246	196
St Paul	50	30	25	13	9	11	29	27	20	18	5
Adak	5	7	4	2		1		1	1	5	4
Other	3	1	1		4	1	1	1	2	1	
Akutan			1	2		1		1			
Kodiak	3	1	1								
Sand Point		1	3	1							
Transfer at Sea	1					1					
Nome											2
King Cove	1										
Yakutat				1							
Total number of port calls	184	208	176	222	247	287	308	308	300	270	207

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Other = other unknown port

Table 8-43 Reported ownership address for HAL C/P vessels from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	31	31	29	27	29	25	19	18	16	16	15	20	18	15
WA	5	5	5	8	5	5	5	7	7	6	7	7	7	7
ANCHORAGE							2	3	3	2	3	2	2	2
OR										1	1	1	1	1
KODIAK								1	1	1	1	1	1	1
OTH				1	1	1								
PETERSBURG	3	3	3	3	3	5	5	4	4	4	4			
Total	39	39	37	39	38	36	31	33	31	30	31	31	29	26

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-44 BSAI Pacific cod allocations and catch data for all BSAI Pacific cod sectors combined

Sector	Year	Total allocation (mt)	Total reallocation (mt)	Vessel count for target fishery	Vessel count for all Pacific cod catch	Pacific cod federal target catch (mt)	Total Pacific cod catch (mt) non-CDQ	Difference between total allocation and total catch (mt)	Total catch as a % of total allocation	GHL total catch (mt)	Vessel count in GHL fisheries	CDQ Pacific cod total catch (mt)	Vessel count in the Pacific cod CDQ fishery
Total	2005	190,049	23,529	212	307	167,511	187,507	2,542	99%	n/a	n/a	14,416	43
	2006	175,035	10,723	202	304	155,488	172,661	2,374	99%	3,691	34	13,946	47
	2007	157,416	6,032	216	311	141,250	155,230	2,186	99%	4,113	42	12,501	47
	2008	151,952	6,422	210	325	128,036	146,635	5,317	97%	4,314	47	17,861	44
	2009	157,150	14,395	171	280	128,155	153,335	3,815	98%	2,059	28	18,101	45
	2010	150,220	8,208	164	269	121,284	147,343	2,877	98%	3,966	19	17,608	40
	2011	203,060	7,820	168	271	160,676	194,844	8,216	96%	266	6	22,496	42
	2012	232,574	13,295	174	268	180,971	218,884	13,690	94%	5,194	25	24,152	43
	2013	231,680	17,150	170	274	175,950	215,060	16,620	93%	4,778	13	25,270	45
	2014	226,228	15,000	155	242	176,263	208,250	17,978	92%	12,450	22	24,707	46
	2015	222,234	22,862	148	239	172,790	206,642	15,592	93%	8,135	17	24,152	48
	2016	224,107	16,496	162	250	182,840	214,715	9,392	96%	16,930	31	25,943	44
	2017	213,283	10,694	167	247	175,004	206,885	6,398	97%	17,951	27	25,026	61
	2018	181,621	5,120	188	275	152,842	178,393	3,228	98%	18,766	45	20,654	67

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-45 BSAI Pacific cod exvessel price, estimated gross exvessel value, gross first wholesale value (million $), gross first wholesale value as a percent of total gross revenue, and total gross revenue (millions $) for all BSAI Pacific cod sectors combined from 2005 through 2017

Year	Estimated exvessel price ($ per lbs.)	Estimated gross exvessel value (millions $)	Gross first wholesale value (millions $)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions $)
2005	0.17	70	276	19%	1,450
2006	0.26	98	300	19%	1,558
2007	0.34	117	325	21%	1,562
2008	0.47	152	301	17%	1,768
2009	0.18	61	187	15%	1,254
2010	0.27	89	218	16%	1,398
2011	0.22	95	328	17%	1,914
2012	0.21	101	337	18%	1,911
2013	0.28	132	267	16%	1,667
2014	0.17	78	300	18%	1,706
2015	0.24	108	316	19%	1,694
2016	0.26	124	323	19%	1,718
2017	0.29	131	360	19%	1,885

Source: AKFIN, May 2019

Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-46 Halibut, crab, and salmon PSC for all BSAI Pacific cod sectors combined except jig while targeting BSAI Pacific cod from 2005 through 2018

Species	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Halibut mortality (mt)	1,992	1,822	1,510	908	817	766	741	1,024	832	738	577	529	417	371
Red King crab	23,426	17,452	47,941	41,206	8,564	3,477	23,517	10,870	106,901	143,626	181,000	19,172	34,796	336,792
C. bairdi	337,845	497,083	844,676	1,460,802	567,754	326,881	238,601	124,993	254,519	562,411	630,457	294,401	362,666	268,249
C. opilio PSC (COBLZ)	39,378	76,181	524,515	56,258	12,834	17,449	4,189	359	6,712	6,341	2,831	1,247	2,296	31
Other C. opilio	104,415	238,427	807,760	437,316	187,158	367,516	87,689	19,138	17,459	59,291	83,172	4,245	88,247	10,508
Chinook	3,809	3,665	6,365	2,055	1,208	1,268	447	973	864	1,338	1,399	2,588	1,727	1,352
Non-chinook	943	7,406	1,659	258	82	39	144	5	332	546	387	654	249	172

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-47 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for all BSAI Pacific cod CV sectors combined from 2005 through 2018

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of ports	10	9	7	8	7	7	10	7	8	8	8	7	7	7
Total number of deliveries	1,168	1,284	1,322	1,382	910	994	1,303	1,330	1,184	1,540	1,217	1,523	1,470	1,411

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019

Table 8-48 Port calls for all BSAI Pacific cod C/P sectors combined with targeted BSAI Pacific cod from 2005 through 2018

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Dutch Harbor	131	184	161	224	251	320	309	323	324	286	227
St Paul	56	31	26	16	9	12	29	27	23	19	7
Adak	7	11	7	4		1		3	7	6	5
Other	4	3	5	5	6	3	1	1	2	1	1
Akutan		1	2	5	1	5	5	6	2	2	1
Sand Point		1	3	1	1						
Kodiak	3	1	1								
Nome											2
Transfer at Sea	1					1					
King Cove	1									1	
Togiak								1			
Yakutat				1							
Port Moller											1
Total	203	232	205	256	268	342	344	361	358	315	244

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
Other = other unknown port

Table 8-49 Reported ownership address for all BSAI Pacific cod sectors combined from 2005 through 2018

CITY	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SEATTLE	160	166	171	178	163	154	145	141	141	135	136	144	140	139
WA	29	37	37	37	30	26	32	29	33	29	30	28	27	35
KODIAK	26	28	20	21	13	20	23	22	18	14	14	19	18	24
OR	33	29	28	29	27	24	27	24	23	21	17	18	21	18
OTH	12	8	9	11	7	10	7	10	6	5	7	5	8	13
HOMER	8	3	10	7	5	5	7	7	7	6	9	9	11	10
ANCHORAGE	3	3	5	5	1	2	4	6	5	5	5	5	5	5
WASILLA				1		1	1	2	2	3	2	2	2	3
DUTCH HARBOR	18	19	15	11	7	8	9	8	5	6	9	5	6	6
SAINT PAUL ISLAND					1									3
PETERSBURG	6	3	3	4	5	7	5	4	5	4	6	3	2	3
SEWARD	1					1	2	1	1	1	1	2	1	2
YAKUTAT														1
DOUGLAS						1	1	1			1		1	1
DILLINGHAM														1
CORDOVA	2	1	1	2	1	1				1	1	1		1
GIRDWOOD	1	1	1	1										1
DELTA JUNCTION				1	1	1	1			2		1	1	1
SELDOVIA		1	1	1			1	1		1		1	1	1
KING SALMON	2	1			1									
AKUTAN	2		1	3	2	3	1	1	1	1				
GOODNEWS BAY									1					
NIKOLAEVSK	1	2			1		1	1						
WILLOW		1	2	1	1									
ADAK	2	1	1	2	1		1	1						
FALSE PASS				1										
PORT LIONS	1		1	2	1	1	1	2	1					
KIPNUK									1					
CHEFORNAK									2					
NEWTOK									1					
SAND POINT	3	1	1	1	4		2							
KING COVE	1	2	2											
CHIGNIK LAGOON		1												
NOME		1	1	1	1	2		1						
ANCHOR POINT	2			2	2	1								
CENTRAL						1								
JUNEAU				2	1	2				1	1	1	1	
NIGHTMUTE									1					
SITKA	2		1	3	2	2	3	2	2		2	1		
KLAWOCK									1		1			
TOKSOOK BAY									6					
MEKORYUK									4					
KENAI					1	1	1	1		1			1	
KETCHIKAN	1	2	2	1										
Total	316	311	313	328	279	274	275	265	269	236	242	245	246	267

Source: AKFIN, May 2019
Table originates from Excel file Tables and Figures for BSAI cod Allocation Review June 2019
OTH = other unknown city