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**Regulatory Impact Review/Environmental Assessment
for Proposed Amendment 122
to the Fishery Management Plan for Groundfish of the Bering Sea and
Aleutian Islands Management Area**

**BSAI PACIFIC COD TRAWL
COOPERATIVE PROGRAM**

November 2022

Lead Agency: National Marine Fisheries Service, Alaska Region
National Oceanic and Atmospheric Administration

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Abstract: This Environmental Assessment and Regulatory Impact Review analyzes a proposed Pacific cod trawl catcher vessel program and considers allocations of quota shares to groundfish License Limitation Program licenses based on the harvest of targeted Bering Sea and Aleutian Islands Pacific cod during the qualifying years. The action also considers allocating harvest shares to a processor permit based on processing history of BSAI Pacific cod during the qualifying years. This would yield an exclusive harvest privilege allocation for use in a BSAI trawl CV Pacific cod catch share program cooperative. The purpose of this action is to improve the prosecution of the fishery by promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, minimizing bycatch to the extent practicable, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning	Acronym or Abbreviation	Meaning
AAC	Alaska Administrative Code	GHL	Guideline Harvest Level
ABC	acceptable biological catch	GOA	Gulf of Alaska
ADF&G	Alaska Department of Fish and Game	HAL	Hook-and-Line
ADP	Annual Deployment Plan	IAD	Initial Administrative Determination
AFA	American Fisheries Act	ICA	Incidental catch allowance
AFSC	Alaska Fisheries Science Center	ICE	Inter-Cooperative Exchange
AI	Aleutian Islands	IRFA	Initial Regulatory Flexibility Analysis
AKFIN	Alaska Fisheries Information Network	IPA	Incentive Plan Agreement
AMP	Adaptive management program	ITAC	Initial Total Allowable Catch
AP	Advisory Panel	JAM	jeopardy or adverse modification
APA	Administrative Procedure Act	LAPP	Limited Access Privilege Program
APICDA	Aleutian Pribilof Island Development Association	lb(s)	pound(s)
BBEDC	Bristol Bay Economic Development Corporation	LEI	long-term effect index
BOF	Alaska Board of Fisheries	LLP	license limitation program
BS	Bering Sea	LOA	length overall
BSAI	Bering Sea and Aleutian Islands	m	meter or meters
CAS	Catch Accounting System	MSA or	Magnuson-Stevens Fishery Conservation and
CBSFA	Central Bering Sea Fishermen's Association	Magnuson-	Management Act
CDQ	Community Development Quota	Stevens Act	
CEQ	Council on Environmental Quality	MMPA	Marine Mammal Protection Act
CFEC	Commercial Fisheries Entry Commission	MS	Mothership
CFID	Commercial Fishing Incident Database	MSST	minimum stock size threshold
CFR	Code of Federal Regulations	mt	Metric ton
CMCP	Catch Monitoring and Control Plan	NAICS	North American Industry Classification System
COAR	Commercial Operators Annual Report	NAO	NOAA Administrative Order
COBLZ	C. <i>opilio</i> Bycatch Limitation Zone	NEPA	National Environmental Policy Act
Council	North Pacific Fishery Management Council	NIOSH	National Institute for Occupational Safety and Health
C/P or CP	catcher/processor	NMFS	National Marine Fishery Service
CPUE	Catch per unit effort	NMFS NAO	National Appeals Office
CQ	Cooperative quota	NOAA	National Oceanic and Atmospheric Administration
CR	Crab Rationalization	NPFMC	North Pacific Fishery Management Council
CV	catcher vessel	NPPSD	North Pacific Pelagic Seabird Database
CVRF	Coastal Villages Region Fund	NSEDC	Norton Sound Economic Development Corporation
DFA	Directed fishing allowance	Observer Program	North Pacific Observer Program
DPS	distinct population segment	OFL	Over Fishing Level
DFL	Daily Fishing Logbook	OMB	Office of Management and Budget
EA	Environmental Assessment	PBR	potential biological removal
EBS	Eastern Bering Sea	PCTC	Pacific Cod Trawl Cooperative
EDR	Economic Data Report	PFMC	Pacific Fishery Management Council
EEZ	Exclusive Economic Zone	POP	Pacific ocean perch
EFH	essential fish habitat	PSC	prohibited species catch
EFP	Exempted Fishing Permit	PA	Preferred alternative
EIS	Environmental Impact Statement	PPA	Preliminary preferred alternative
ELB	Electronic Logbook	PRA	Paperwork Reduction Act
EM	Electronic Monitoring	PSEIS	Programmatic Supplemental Environmental Impact
E.O.	Executive Order	QS	Statement Quota share
ESA	Endangered Species Act	RFA	Regulatory Flexibility Act
ESU	endangered species unit	RFFA	reasonably foreseeable future action
FCMA	Fishermen's Collective Marketing Act	RIR	Regulatory Impact Review
FFP	Federal Fisheries Permit	RPA	reasonable and prudent alternative
FLPR	Floating processor	SAFE	Stock Assessment and Fishery Evaluation
FMA	Fisheries Monitoring and Analysis	SAR	stock assessment report
FMP	fishery management plan	SBA	Small Business Act
FPP	Federal Processor Permit	SBPR	Shore-based processor
FONSI	Finding of No Significant Impact	Secretary	Secretary of Commerce
FR	<i>Federal Register</i>	SIA	Social Impact Assessment
FRFA	Final Regulatory Flexibility Analysis	SPLASH	Structure of Populations, Levels of Abundance, and
ft	foot or feet	SRKW	Status of Humpbacks Southern Resident killer whales
		TAC	total allowable catch
		TLAS	Trawl Limited Access Sector

Acronym or Abbreviation	Meaning	Acronym or Abbreviation	Meaning
U.S.	United States	VMS	vessel monitoring system
USCG	United States Coast Guard	YDFDA	Yukon Delta Fisheries Development Association
USFWS	United States Fish and Wildlife Service		

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Executive Summary

This Environmental Assessment (EA) and Regulatory Impact Review (RIR) analyzes a proposed Pacific Cod Trawl catcher vessel (CV) Program (PCTC Program) considers allocations of quota shares (QS) to groundfish License Limitation Program (LLP) licenses based on the harvest of targeted Bering Sea and Aleutian Islands (BSAI) Pacific cod during the qualifying years. From this point forward, all references to LLP licenses throughout the document refer to groundfish LLP licenses, unless otherwise noted. The action also considers allocating harvest shares to a processor permit based on processing history of BSAI Pacific cod during the qualifying years. Those harvest shares would yield an exclusive harvest privilege for use in a BSAI trawl CV Pacific cod catch cooperative(s). The intent of this action is to improve the prosecution of the fishery by promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, minimizing bycatch to the extent practicable, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.¹

Purpose and Need

It is generally understood that current regulations that limit harvest directly through limitations on total allowable harvest and input controls can make the harvesting and processor sectors less efficient. However, management that relies on catch share programs is expected to result in improved technical efficiency through retirement of redundant capital, more efficient use of retained capital and other inputs, and quota transfers from less efficient to more efficient trawl CVs (Marine Policy, 2015).

Recognizing the benefits of a catch share program in addressing increasing inefficiency in the BSAI trawl CV Pacific cod fishery, the Council at its February 2019 meeting adopted a purpose and need statement as part of a request for a scoping paper that considers development of a cooperative based program for the BSAI Pacific cod trawl CV fishery.² At the October 2019 meeting, the Council, while conducting a review of the scoping paper, adjusted the purpose and need statement to reflect the Council's intent to provide stability in the harvesting and processing sectors and to provide for sustained participation of fishery dependent communities while ensuring the sustainability and viability of the BSAI Pacific cod resource. In December 2020, the Council further modified the purpose and need statement to include minimizing bycatch to the extent practicable. The Council noted that participants with exclusive shares of BSAI Pacific cod will have time to be more selective in determining when, where, and how to harvest their allocation and thereby potentially reduce their halibut and crab prohibited species catch (PSC) usage and rates. Recognizing the increased opportunity to minimize bycatch as a benefit of catch share programs, the Council included minimizing bycatch to the extent practicable as part of the purpose and need statement. Provided below is the revised purpose and need statement:

Over the last several years, total allowable catch for Pacific cod in the Bering Sea Aleutian Islands has steadily decreased. The pace of the fishery has contributed to an increasingly compressed season, resulting in decreased ability to maximize the value of the fishery and negatively impacting all fishery participants (catcher vessels, motherships, shoreside processors, and communities). This race for fish also discourages fishing practices that can minimize bycatch and threatens the sustained viability of the fishery. The Council is considering the development of

¹ This EA is being prepared using the 1978 CEQ NEPA Regulations. NEPA reviews initiated prior to the effective date of the 2020 CEQ regulations may be conducted using the 1978 version of the regulations. The effective date of the 2020 CEQ NEPA Regulations was September 9, 2020. This review began on [insert DATE prior to September 14, 2020] and the agency has decided to proceed under the 1978 regulations.

² Motion from February 2019: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=68547653-a558-4b6e-8318-70444670bca5.pdf&fileName=C4%20MOTION%20BSAI%20Pcod%20Trawl%20CV%20Scoping%20Document.pdf>

a cooperative-based program to improve the prosecution of the fishery, with the intent of promoting safety and stability in the harvesting and processing sectors, minimizing bycatch to the extent practicable, increasing the value of the fishery, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

The Council's October 2021 preferred alternative (PA) addresses the stated purpose and need to improve the prosecution of the fishery by slowing the pace of the fishery and increase the season length as harvesters will no longer be competing for a share of the fishery and processors will not need to add capacity to keep up with a frenzied pace of deliveries. The pace of the derby fishery puts economic pressures to fish in weather conditions that could be unsafe, but this economic pressure can be reduced or avoided in a rationalized fishery. Safety in the fishery is also improved by reducing overcrowding on the fishing grounds which reduces the potential for gear interactions.

Stability: Catch share programs in Alaska have resulted in stable harvesting and processing sectors, especially as the programs have matured. We anticipate similar results will occur under the Council's PA, which meets the goal of providing stability to sector participants. Several components of the PA are designed to promote stability including allocations to harvesters and processors to balance market power, cooperative-style management which allows transfers between cooperatives to ensure that full harvest of Pacific cod cooperative quota (CQ) can occur, and ownership and use caps that limit consolidation and prevent acquisition of excessive shares.

Some components of the PA result in tradeoffs between the goals and objectives in the purpose and need. For example, reducing PSC levels could result in greater instability for the sectors but may better achieve the objective of minimizing bycatch to the extent practicable. Limitations on the catcher/processor (C/P) sector action as motherships may be slightly more disruptive to their operations creating more uncertainty for the C/Ps and the CVs that have traditionally delivered offshore, but this slight C/P disruption will provide for the sustained participation of fishery dependent communities.

Minimize bycatch: The objective to minimize bycatch, consistent with the purpose and need and MSA National Standard 9, is met by individual and cooperative accountability of PSC usage which will increase incentives to avoid PSC to the extent practicable. PSC apportionments within cooperatives and across cooperatives will have a high value as the limited availability of those species could constrain the value derived from the Pacific cod fishery and result in enforcement actions and associated fines if exceeded. Reduction in the PSC limits available to the sector/cooperatives will help ensure that harvesters utilize fishing practices that minimize bycatch to the extent practicable.

Increased value: The objective to increase the value of the fishery is expected to be met by slowing the pace of the fishery and allowing harvesters to deliver higher quality Pacific cod to the processors. Processors also have the ability under the PA to slow throughput at the plants and produce higher quality fillets or value-added products.

Sustained participation: Providing for the sustained participation of fishing communities objective is met in a few ways. Gulf of Alaska (GOA) sideboards are designed to protect Gulf community fleets from increased competition resulting from rationalization of the BSAI trawl CV fishery. Limits on C/P processing and processor allocations could serve to stabilize landings in communities that have historically depended on BSAI Pacific cod processing. Additionally, the Aleutian Islands (AI) processor provisions under Element 6 could have beneficial impacts to communities in the western AI region (and potentially have adverse impacts to communities in other regions). Finally, the inability to sever catch histories from LLP licenses and setting ownership and use caps helps to limit consolidation of harvesting and processing activity between communities.

Sustainability and viability of the resource: NMFS and the Council will continue to utilize the best science available to establish harvest levels in the BSAI Pacific cod fishery. Individuals and cooperatives will need to ensure they do not exceed their available quota or risk being subject to fines by the

cooperatives or Office of Law Enforcement (OLE) enforcement actions. Together these will help ensure that the trawl CV sector apportionment is not exceeded on an annual basis.

Description of Alternatives, Elements, and Options

To address the problem statement, the Council selected a PA that includes a suite of elements, and options to manage the BSAI trawl CV Pacific cod sector. The alternatives proposed included no action (Alternative 1) and implement a cooperative style LAPP for the BSAI Pacific cod trawl CV sector (Alternatives 2a and 2b and Alternative 3 which is the Council's PA) that are described in Table 2-1. In general, the preferred cooperative style LAPP considers allocations of QS to groundfish LLP licenses based on the legal landings of targeted BSAI Pacific cod in a federal fishery during a range of qualifying years included in the options. The PA also considers allocating QS to a processor permit based on processing history of targeted BSAI Pacific cod harvested in a federal fishery and deducted from the BSAI trawl CV sector apportionment during the qualifying years. The PA would yield an exclusive harvest privilege for a portion of the trawl CV sector's BSAI Pacific cod initial total allowable catch (ITAC) allocation, after the deduction of any incidental catch allowance (ICA) required to support other directed fisheries, for use in a PCTC Program cooperative.

The preferred PCTC Program would be a voluntary harvester cooperative in association with a legally permitted processor (Element 1). Any vessel assigned to an LLP license that authorized the vessel's legal landings of targeted BSAI trawl CV Pacific cod during the qualifying years would be eligible to receive QS (Element 2.1).

To determine the amount of QS allocation to be assigned under the PA, the Council selected 2009 to 2019 (Option 2.2.2) with one drop year of targeted BSAI Pacific cod landings from a federal fishery that was deducted from the BSAI trawl CV sector apportionment. In December 2020, the Council clarified that catch history to determine QS will not be considered beyond December 31, 2019 (see Section 2.9.2). In the case of stacked LLP licenses that authorized qualifying catch history when no agreement is provided by the vessel owner/license holders at the time of application, qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch (Option 2.3.2). NMFS would issue CQ to cooperatives by season (Element 2.4), and the recommended program would allocate only A season and B season QS, leaving the C season (15 percent) as a limited access fishery available to any trawl CVs with an eligible groundfish LLP license and appropriate endorsements (Element 2.5).

The Council clarified in their PA that the annual halibut and crab PSC limits available to the BSAI trawl CV Pacific cod sector would be established through the annual specifications process. The Council recommended establishing a trawl CV BSAI halibut PSC apportionment for the Pacific cod fishery based on historical use of halibut between trawl CV sector and the AFA C/P sector, while for BSAI crab PSC, the apportionments would be based on the proportion of BSAI Pacific cod allocated to the two sectors (Element 3). The Council's PA would reduce the PSC apportionment to the BSAI trawl CV Pacific cod sector by 25 percent for halibut and 35 percent for crab (Element 3, Option 3.3). Any reduction of halibut and crab PSC associated with Option 3.3 would not be reapportioned to other Trawl Limited Access Sector (TLAS) fisheries. The reduction to the halibut PSC limit would be phased in over 2 years (Suboption 3.3.3). Element 3.4 would establish a separate C season halibut and crab PSC apportion of 5 percent before applying PSC limit reductions. Finally, PSC limits would be transferable between cooperatives.

The Council's PA includes GOA sideboard limits for PCTC Program qualified LLP licenses. Option 4.1 will change the AFA non-exempt GOA groundfish and halibut PSC sideboard limits for all non-exempt AFA LLP licenses and CVs based on 2009-2019 qualifying years (Option 2.2.2). AFA non-exempt GOA halibut PSC sideboard limits would be managed as an annual limit. Option 4.2 would restrict AFA CVs that are exempt from AFA GOA sideboards, non-AFA trawl CVs, and CVs assigned to LLP licenses endorsed for less than 60' length overall with an Aleutian Islands (AI) transferable endorsement from

leasing their BSAI Pacific cod CQ as a condition of being exempt from GOA sideboards in the proposed Pacific cod LAPP. Vessels assigned a qualified GOA exempt LLP license that does not fish in the GOA during the calendar years, except for the CGOA Rockfish Program, would be able to lease their BSAI Pacific cod CQ generated by the LLP license for that calendar year. In addition, vessels with LLP licenses less than 300 mt of average annual qualifying BSAI Pacific cod catch history would be able to lease their BSAI Pacific cod CQ.

Element 5 is included to address community and processing sector issues associated with the creation of the proposed LAPP. The PA allows all processors with an eligible Federal Processor Permit (FPP) or Federal Fisheries Permit (FFP) to process BSAI Pacific cod (subject to eligibility requirements under BSAI FMP Amendment 120 to limit catcher/processors acting as motherships (Element 5.1); limit the amount of trawl CV targeted BSAI Pacific cod that can be delivered to trawl C/Ps acting as a mothership (Element 5.2), and allocates harvest shares to eligible processors for use in a PCTC Program cooperative (Element 5.4). Under Element 5.4, the Council selected an allocation of 22.5 percent of total harvest QS to eligible processors based on their processing of qualifying deliveries (Options 5.4.5). The Council determined that processors that are no longer active (no longer hold an FPP) would not be issued QS. The processing history associated with these processors would be deducted from the total amount of eligible processing history.

The Council recommended PA includes Option 6.1 which would require cooperatives to reserve 12 percent of the BSAI A season trawl CV sector CQ as a set-aside for delivery to an AI shoreplant if the communities of Adak or Atka file a notice of intent to process that year (Option 6.1). The set-aside would be in effect during the A and B seasons and any remaining portion of the AI CQ reserve would be reallocated to cooperatives in the same proportion as the initial allocation if the intent to process is withdrawn during the A or B seasons by the AI shoreplant(s). The PA requires an intercooperative agreement that describes how the set-aside will be administered by the cooperatives to ensure that harvests from the Bering Sea (BS) and AI CQ reserve do not exceed the minimum set aside, how the cooperatives intend to harvest the set-aside, and how cooperatives would ensure that CVs less than 60 feet LOA assigned to an LLP license with a transferable AI trawl endorsement have the opportunity to harvest 10 percent of the AI set-aside for delivery to AI shoreplants. A cooperative intending to harvest any amount of the set-aside would be required to provide the cooperative's plan for coordinating harvest and delivery of the set-aside with an AI shoreplant in the annual cooperative application.

Element 7 defines the transferability provisions and states that QS are attached to the LLP license and are non-severable from the LLP license. Transfer of an LLP license eligible for this program would result in the transfer of any program eligibility, QS associated with the LLP, and sideboard limitations (Element 7.1). Included as part of the PA is a suboption to authorized holders of eligible LLP licenses that would authorize BSAI non-exempt AFA CVs the ability to transfer QS between LLP licenses to accommodate private lease agreements during the qualifying period. The window for transferring QS is 90 days from the publishing of the Final Rule. The 5 percent ownership cap from Element 8.1 would apply. Transfers of QS outside the 90-day period due to an operation of law would also be permitted. As part of that element, the newly created processor permits under the PCTC Program may only be transferred to another processor and shoreside processor permits could only be transferred to another shoreside processor that holds an FPP. Quota shares assigned to these processor permits would be non-severable except in the case of a transfer to another eligible processor results in exceeding the use cap under Option 8.3. The portion of QS over the use cap could be severed from permit and transferred to another eligible processor permit.

Element 8 of the Council's PA defines ownership and use caps. The Council included ownership and use caps of 5 percent for harvester-issued (Element 8.1) QS and processor-issued QS of 20 percent (Element 8.3), vessel use cap of 5 percent (Element 8.2), and a company level processing cap of 20 percent (Element 8.4). The PA will create a legacy provision for persons over the harvester-issued and processor-issued use caps, vessel use caps, and processing cap.

Element 9 addresses cooperative provisions. A cooperative shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of trawl CVs eligible to harvest a portion of that cooperative's CQ must be identified in the annual cooperative application.

The Council included in the PA elements to address share duration (Element 10), monitoring (Element 11), reporting and program review (Element 12), and cost recovery (Element 13). These elements are unchanged or have relatively minor changes from the analysis presented in October 2020.

Description of Alternatives

Given the myriad ways to combine the many elements and options in the proposed action to form an alternative, two alternatives (2a and 2b) were developed early in the process for purposes of analysis. These alternatives are supplemented with a Council developed PA selected during its October 2021 meeting. The combination of these action alternatives in addition to Alternative 1 represent a reasonable suite of alternatives to assess the impacts of the PA. Table 2-1 provides a summary of the current alternatives including the Council's PA. Each of the action alternatives in the analysis address the problem statement by providing an allocation of BSAI Pacific cod to the trawl CV sector and allow for the sector to form cooperatives, which are expected to facilitate a more reasonable paced fishery that would lengthen the seasons, resulting in an increased ability to maximize the value of the fishery and reduced the impacts of a compressed fishery on all fishery participants. The action alternatives would also likely encourage fishing practices to minimize bycatch and improve the sustained viability of the fishery.

Table ES-1 Comparison of the action Alternatives

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Cooperative Style (Element 1)	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with a licensed processor. Inter-cooperative formation is allowed.	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with a licensed processor. Inter-cooperative formation is allowed. Option: A minimum of three LLP licenses are needed to form a cooperative	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with licensed processor. Inter-cooperative formation is allowed. Option: A minimum of three LLP licenses are needed to form a cooperative.
Allocation to LLP Licenses (Element 2)	<p>Element 2.1 - No minimum threshold percentage for eligibility to receive harvest shares.</p> <p>Element 2.2 - Harvest allocation would be based on targeted BSAI Pacific cod catch history during 2014-2019 no dropped years (Option 2.2.1). Harvest allocation would be for the A and B seasons only (Element 2.5) with C season remaining as a limited access fishery.</p> <p>Option 2.2.4 – For AFA non-exempt BSAI Pacific cod sideboarded vessels, allocations are based on a 50/50 (Suboption 2.2.1) blend of 2014-2019 no dropped qualifying years and 1997 BSAI Pacific cod sideboard history.</p> <p>Option 2.3.2 – When multiple licenses authorized catch by one vessel qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch.</p>	<p>Element 2.1 Option - Establish a minimum threshold percentage of 1% by LLP license holder for eligibility to receive harvest shares. Does not apply to the 8 LLP licenses with a transferable AI endorsement.</p> <p>Element 2.2 - BSAI Pacific cod harvest allocation would be based on targeted BSAI Pacific cod catch history during 2004-2019 drop 2 years (Option 2.2.3). Harvest allocation would be for A, B, and C seasons.</p> <p>Option 2.3.1 When multiple licenses authorized catch by one vessel qualifying catch history would be divided equally between those licenses.</p>	<p>Element 2.1 - No minimum threshold percentage for eligibility to receive harvest shares.</p> <p>Element 2.2 - Harvest allocation would be based on targeted BSAI Pacific cod catch history during 2009-2019 with one drop year (Option 2.2.2). Harvest allocation would be for the A and B seasons only (Element 2.5) with C season remaining as a limited access fishery.</p> <p>Option 2.3.2 – When multiple licenses authorized catch by one vessel qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Prohibited Species Catch Limits (Element 3)	<p>Option 3.2 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2014-2019 qualifying years. Establish trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV and the AFA C/P sectors.</p> <p>Option 3.3 - Reduce halibut and crab PSC apportionment to BSAI trawl CV Pacific cod sector by 35% (Suboptions 3.3.1 & 3.3.2).</p> <p>Option 3.4 – Establish a separate C season halibut and crab PSC apportionment at 15% before applying PSC limit reduction.</p> <p>Halibut and crab PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>	<p>Option 3.1 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2004-2019 qualifying years. Crab PSC will be maintained at the BSAI TLAS level.</p> <p>Option 3.2 - Reduce halibut PSC apportionment to BSAI trawl CV cod sector by 10% (Suboption 3.3.1).</p> <p>Halibut PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>	<p>Option 3.2 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2009-2019 qualifying years. Establish separate trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV (90.6%) and the AFA C/P sectors (9.4%).</p> <p>Option 3.2 - Reduce halibut PSC apportionment to BSAI trawl CV Pacific cod sector by 25% (Suboption 3.3.1) and crab PSC apportionment by 35% (Suboption 3.3.2). Halibut PSC limit reduction will be phased in over 2 years (Suboption 3.3.3).</p> <p>Option 3.4 – Establish a separate C season halibut and crab PSC apportionment at 5% before applying PSC limit reduction.</p> <p>Halibut and crab PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Gulf of Alaska Sideboards (Element 4)	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new GOA groundfish sideboard limits based on 2014-2019 GOA aggregate retained catch divided by TAC. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels and non-AFA vessels are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs with LLP licenses initially assigned less than 200 mt of average annual qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new groundfish GOA sideboard limits based on 2004-2019 GOA aggregate retained catch divided by TAC. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels and non-AFA vessels are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs with LLP licenses initially assigned less than 600 mt of qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new GOA groundfish and halibut PSC sideboard limits based on 2009-2019 GOA aggregate retained catch divided by TAC. Halibut PSC limits will be managed at an annual level. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels, non-AFA vessels, and CVs assigned to under 60' LLP licenses with AI transferable endorsements are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs LLP licenses and CVs assigned to under 60' LLP licenses with AI transferable endorsements initially assigned less than 300 mt of average annual qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Processor and Community Provisions (Element 5)	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.2 - Limit BSAI Pacific cod processing for eligible C/Ps acting as a MS. Only C/Ps that are eligible may process BSAI Pacific cod as a MS that is harvested from the directed BSAI Pacific cod trawl CV fishery. Eligible trawl C/Ps processing limit when acting as a MS for BSAI Pacific cod is based on processing history under Element 2. Processor limits are established for each company.</p> <p>Element 5.4 - Allocate processors 30% of the harvest shares based on their processing history under Element 2. All processors with processing history under Element 2 will qualify. The processor allocation of BSAI Pacific cod harvest shares will be assigned to a newly created processor permit that is transferable.</p> <p>No restrictions on use of processor issued harvest shares by processor owned/controlled CVs.</p>	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.3 – Only CVs that are 75% owned by a C/P eligible for the offshore sector as of 12/31/2019 may delivery any or all of the CQ derived from the LLP assigned to the vessel to an eligible C/P acting as a MS. Council will develop qualification criteria for CVs that may deliver offshore if they are not 75% owned by a C/P eligible to act as a MS in the directed BSAI trawl CV sector.</p> <p>Element 5.4 - No initial allocation of harvest shares to processors.</p>	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.2 – Limit BSAI Pacific cod processing for eligible C/Ps acting as a MS to process up to 125% of the eligible C/P’s qualifying processing history.</p> <p>Element 5.4 - Allocate processors 22.5% of the harvest shares based on their processing history under Element 2. All processors with processing history under Element 2 will qualify except processors that are no longer active. The processor allocation of BSAI Pacific cod harvest shares will be assigned to a newly created processor permit that is transferable.</p> <p>A cooperative cannot assign a greater proportion of the harvest shares allocated to a processor to an LLP license owned by that processor than the LLP license would have brought into the cooperative absent any processor held shares.</p>
AI Processor Provisions (Element 6)	<p>Option 6.1 - 25% set-aside of BSAI A season harvest amount assigned to PCTC cooperatives that must be harvested from the AI and delivered to an AI shoreplant during the A season. Amount is reduced by any allocation they receive under Element 5.</p>	<p>Option 6.2 - Allocate 10% of the BSAI trawl CV sector allocation to an entity representing the AI community any year at least one community files an intent to process. Allocations are equally divided between qualified entities and are not transferable. A minimum of 25% of the AI shoreplant allocation will be set aside and may only be harvested by trawl CVs less than 60’ LOA with a valid LLP license assigned a transferable AI endorsement (Suboption 6.2.3).</p>	<p>Option 6.1 - 12% set-aside of BSAI A season harvest amount assigned to PCTC cooperatives that must be harvested from the AI and delivered to an AI shoreplant during the A and B seasons. Amount is reduced by any allocation the active processor(s) receive under Element 5.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Transferability (Element 7)	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Option 7.2 - Allocations based on processing history would be issued as separate permit. Allocations to processors may only be sold to another processor and the attached QS are only severable from the processor permit if the buyer of the permit would be over the ownership cap after purchasing the permit and all of the QS.</p> <p>Annual cooperative allocations (CQ) of Pacific cod, halibut, and crab PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers would be permitted through the end of the B season.</p>	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Annual allocations (CQ) of Pacific cod and halibut PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers of CQ are permitted, but must be completed by December 31 (i.e., prior to annual CQ expiring).</p>	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Suboption 7.1.1 – For the LLP licenses associated with the non-exempt AFA CVs, within 90 days of initial issuance of harvest quota shares (except for those transfers supported by an operation of law), the owners of the LLP licenses that are associated with AFA non-exempt CVs that had engaged in fish transfers agreements during the qualifying years may transfer the quota shares between other LLP licenses associated with AFA non-exempt vessels.</p> <p>Option 7.2 - Allocations based on processing history would be issued as separate permit. Allocations to processors may only be sold to another processor and the attached QS are only severable from the processor permit if the buyer of the permit would be over the ownership cap after purchasing the permit and all of the QS.</p> <p>Annual cooperative allocations (CQ) of Pacific cod, halibut, and crab PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers of CQ are permitted, but must be completed by August 1 (i.e., prior to annual CQ expiring).</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Ownership and Use Caps (Element 8)	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 7% of QS/CQ issued with grandfather provision set equal to initial allocation.</p> <p>Element 8.2 - Vessel use caps are 3% of CQ with a grandfather provision that is transferable if vessel is replaced.</p> <p>Element 8.3 - Processor issued cooperative shares have an ownership and use cap at the entity level of 20% with a grandfather provision equal to initial allocation. The cap will be calculated using the 10% ownership threshold rule.</p> <p>Element 8.4 - No processing facility may process more than 25% of the CQ allocated, with a grandfather provision</p>	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 10% of QS/CQ issued with grandfather provision set equal to initial allocation</p> <p>Element 8.2 - Vessel use caps are 5% of CQ and the grandfather provision is not transferable if vessel is replaced.</p> <p>Element 8.3 – Processors are not issued cooperative shares but have a use cap at the entity level of 10% with a grandfather provision equal to initial allocation. The cap will be calculated using the individual and collective rule.</p> <p>Element 8.4 - No processing facility may process more than 30% of the CQ allocated, with a grandfather provision.</p>	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 5% of QS/CQ issued with grandfather provision set equal to initial allocation.</p> <p>Element 8.2 - Vessel use caps are 5% of CQ with a grandfather provision that is transferable if vessel is replaced.</p> <p>Element 8.3 - Processor issued cooperative shares have an ownership and use cap at the entity level of 20% with a grandfather provision. Cap will be calculated using the individual and collective rule.</p> <p>Element 8.4 - No company may process more than 20% of the CQ allocated, with a grandfather provision.</p>
Cooperative Provisions (Element 9)	<p>Annual cooperative application must be filed on or before November 1 of the year prior. Cooperatives shall be formed by holders of qualified LLP license with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of trawl CVs eligible to harvest a portion of that cooperatives CQ must be identified in the annual cooperative application.</p> <p>Cooperatives are intended to conduct and coordinate harvest activities and are not FCMA cooperatives.</p> <p>Membership agreements will specify that processors affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws.</p>		
Share Duration (Element 10)	<p>All allocations and allowances under this program are revocable privileges that 1) may be revoked, limited, or modified any time, 2) shall not confer any right of compensation to the holder, if they are revoked, limited, or modified, and 3) shall not create or be construed to create any right, title, or interest in or to any fish before the fish is harvested by the holder.</p> <p>The duration of harvest shares and associated PSC is 10 years. Permits will be renewed before their expiration, unless revoked, limited, or modified.</p>		
Monitoring (Element 11)	<p>All vessels harvesting CQ will be in 100% observer coverage category except CVs delivering to a MS or the current at-sea observer data transmission requirements for non-AFA trawl CVs for the first 3 years after implementation. NMFS will develop monitoring and enforcement provisions necessary to track quota, harvest, and use caps.</p>		
Reporting and Program Review (Element 12)	<p>Cooperatives will annually produce a report to the Council describing its membership, cooperative management, and performance in the preceding year including use of processor issued harvest shares, if applicable.</p> <p>As per MSA, a formal detailed program shall be undertaken 5-years after implementation, with subsequent reviews each 7-years after.</p>		
Cost Recovery (Element 13)	<p>A fee, not to exceed 3% of the ex-vessel value, will be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.</p>		

Table ES-2 Summary of Effects of Alternative 1 and action alternatives

Effects on Harvesters	
Alternative 1 (No Action)	<p>Harvest participation and fishing practices in the BSAI Pacific cod fishery for the trawl CV sector are likely to be similar to current participation and fishing practices.</p> <p>In total, 110 LLP licenses and 115 trawl CVs reported targeted BSAI Pacific cod landings during the 2004 - April 10, 2020. Of the total catch of BSAI Pacific cod during that period, 88% was from target while 12% was from incidental. The pollock fishery had the highest incidental catch of Pacific cod.</p> <p>BS contributed 76% of the target catch, while the AI contributed 24% of the target catch during the 2004 through April 10, 2020. In total, 32 LLP licenses and 57 trawl CVs reported targeted AI Pacific cod, while 107 LLP licenses and 105 trawl CVs reported targeted BS Pacific cod during the 2004 - April 10, 2020 period.</p> <p>Of the total target catch during the 2004- April 10, 2020 period, 89% was from the A season, 10% from the B season, and 2 percent from C season.</p> <p>The length of the BSAI Pacific cod fishery for the trawl CV sector has compressed in recent years.</p> <p>Of the TLAS halibut PSC limit during 2004-2020, both trawl CV sector and the AFA C/P sector utilized 56%, with trawl CV sector accounting for 97% and the AFA C/P sector accounting for 3%. Halibut PSC limits could constrain the TLAS Pacific cod fishery if a race for fish were to continue in the future.</p> <p>Crab PSC limits were generally not a constraint for the TLAS sectors during 2004-2020 and would likely not be constraining in the future.</p>
Alternative 2a	<p>Like Alternatives 2b and 3, cooperative harvest privileges under this alternative would be expected to result in an incentive to reduce the “race for fish” and to optimize harvest of CQ. But this alternative relative to the other alternatives has the largest reduction of halibut PSC limit (35%) which could inhibit cooperatives from harvesting all their CQ. This alternative, as well Alternative 3, requires a 35% reduction in the crab PSC limits. Of the reduced crab PSC limits, red king crab (Zone 1) likely has the greatest potential to inhibit cooperatives from harvesting all their CQ.</p> <p>The total number of qualified LLP licenses based on 1997 sideboard history and 2014-2019 A and B seasons catch history would be 119, with 33 qualifying from 1997 sideboard history and 86 qualifying from 2014-2019 history. Also qualifying are 5 LLP licenses that have transferable AI endorsements.</p> <p>Members of cooperatives would have the flexibility of delivering to multiple cooperatives, but likely established relationships with processors will have an important influence on harvester delivery choices. The 30% allocation of harvester shares to processors under this alternative would also provide a stronger negotiating position for processors since these shares could be used as an incentive for harvester deliveries.</p> <p>Since each of the 2 qualified C/Ps acting as motherships would be restricted by processor limits unique to that C/P, they would need to determine which CVs could deliver to them while staying under their limit thus they would likely prioritize deliveries by vessels using LLP license held by the C/P firm.</p> <p>By prioritizing their own LLP licenses, the C/Ps may not be able to provide a market for all CVs that are designed for offshore deliveries which could result in those CV operators leasing out their CQ.</p> <p>Not allocating C season as CQ may reduce the impacts of trawl CV harvesting more of their allocation in the BS thus benefitting those sectors fishing in the Pacific cod fishery later in the year. However, requiring cooperatives to set aside 25% of their A season for AI shoreplants could negatively impact those sectors that historically fish Pacific cod in the AI greater than Alternative 3.</p> <p>Additionally, leaving C season as limited access fishery would likely result in some TAC and ICA being reallocated to other sectors later in the year.</p>
Alternative 2b	<p>Like Alternatives 2a and 3, cooperative harvest privileges are expected to result in less motivation to race for fish and to optimize harvest of CQ, but this alternative requires only a 10% reduction in the halibut PSC limit so the alternative likely provides the greatest opportunity for cooperatives to harvest all their CQ.</p> <p>No or minimal impact on cooperatives that could form that are similar in membership to AFA cooperatives. May negatively impact new LLP license holders that are unable to attract two additional LLP license to form a cooperative.</p> <p>Total qualified LLP licenses based on 2004-2019 history for all three seasons would be 108.</p>

Effects on Harvesters	
	<p>Alternative requires a person to hold LLP licenses in aggregate at least 1% of total QS, so of the 108 LLP licenses eligible, 41 of those LLP licenses do not meet the 1% threshold leaving 67 LLP licenses qualified not including the 8 LLP licenses with transferable AI endorsements that would also qualify.</p> <p>Members of cooperatives would have the flexibility of delivering to multiple cooperatives, but it is likely that established relationships with processors would have an important influence on harvester delivery choices. Unlike Alternative 2a and Alternative 3, this alternative provides processors less influence and market power since it does allocate harvester shares to processors.</p> <p>10 LLP licenses are held by three firms could qualify CVs to deliver to 2 qualified C/Ps acting as motherships. These LLP licenses accounted for 15.3% of the qualifying catch during 2004-2019 all of which could be delivered to these C/Ps. The alternative would allow these C/Ps firms to have greater control over the CQ and/or CVs they own. Alternative does not address concerns by CV operators whose vessels are not designed to deliver shoreside and are not 75% owned by a qualified C/P firm. Owners of these CVs/LLP licenses would likely need to lease their CQ.</p> <p>This alternative likely provides greater opportunity for specialization amongst the different groundfish fisheries relative to Alternatives 2a and 3 since ownership and use cap is 10% and vessel cap is 5%.</p> <p>Any increase in effort in the BS relative to status quo could increase the possibility that the BS will close on TAC.</p> <p>Allocating all three seasons as CQ would likely result in a smaller portion of any remaining cooperative CQ and ICA being reallocated to other sectors later in the year.</p>
Alternative 3 (PA)	<p>Like Alternatives 2a and 2b, cooperative harvest privileges are expected to reduce motivation to race for fish and to optimize harvest of CQ, but the halibut PSC limit reduction (25%) for this alternative is more favorable to PCTC harvesters than Alternative 2a but less than Alternative 2b. As a result, this alternative relative to Alternative 2a could provide more potential for cooperatives to harvest all their CQ. This alternative, as well as Alternative 2a, have a 35% reduction in the crab PSC limits. Of the reduced crab PSC limits, red king crab (Zone 1) likely has the greatest potential to inhibit cooperatives from harvesting all their CQ.</p> <p>Minimal impact on cooperatives that could form that are similar in membership to AFA cooperatives. May negatively impact new LLP license holders that are unable to attract two additional LLP license to form a cooperative.</p> <p>Total qualified LLP licenses based on 2009 – 2019 A and B seasons history would be 92 not including 7 LLP licenses with transferable AI endorsements that would also qualify.</p> <p>Members of cooperatives will have the flexibility of delivering to multiple processors, but likely established relationships with processors will have an important influence on harvester delivery choices. An allocation of harvester shares to processors under this alternative will provide a stronger negotiating position for processors since these shares could be used as an incentive for harvester deliveries.</p> <p>The alternative would limit BSAI Pacific cod processing for eligible C/Ps acting as a mothership. The Council selected the limit of 125 percent of each eligible C/Ps processing during the qualifying period as part of its PA. The impact of that limit is expected to fall within the range described under Alternative 2a and Alternative 2b.</p> <p>Leaving C season as a limited access fishery may reduce impact of trawl CV harvesting more of their allocation in the BS and potentially allowing other sectors to fish their allocation in the BS. However, requiring cooperatives to set aside 10% of their A season CQ for delivery to AI shoreplants could negatively impacts those sectors that historically fish Pacific cod in the AI but less than Alternative 2a. Additionally, leaving C season as limited access fishery would likely result in some TAC and ICA being reallocated to other sectors later in the year.</p> <p>The PA would allow for greater predictability for fishery participants and would provide for increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions. This flexibility has the potential for decreasing vulnerability to adverse conditions and increasing resilience following adverse events or accompanying adverse trends, including adverse effects of climate change, for involved individuals, entities, and communities.</p>

Effects on Processors

**Alternative 1
(No Action)**

Processors will continue to compete for deliveries but will not have the capacity to offer markets to all CVs that may want to deliver because of the compressed fishing season and the large deliveries by their traditional fleet. There may be entry or exit into the fishery, but the vast majority of the processing is expected to take place in Akutan or Dutch Harbor/Unalaska.

Processors will be allowed to enter the fishery if they can attract CV deliveries. The only limit would be on C/Ps that are allowed to act as a mothership. Eligible C/Ps are not limited in the amount of Pacific cod they may process as a mothership or which CVs may deliver to them. The vast majority of processing is expected to take place in Akutan and Dutch Harbor/Unalaska. Shifts in processing locations are determined by the processors with consultation and negotiation with the communities' leaders where they operate. The hurried pace of processing will create economic conditions that favor processing quickly and producing more H&G products and relatively less fillets.

Production quality is expected to be less than under the PCTC Program due to harvesting and delivery pace and the rush to process high volumes of Pacific cod by the plants.

Cost of production in the Pacific cod fishery is higher than necessary due to the need to have high levels of capacity to process peak delivery amounts.

Shorter processing season results in need to have more processing crew to handle peak processing levels.

Compliance costs are assumed to be about the same as past years and are determined by current and future monitoring and enforcement requirements.

Consolidation could occur due to low or negative profit margins in the fishery caused by the market, biological, and regulatory conditions.

AI deliveries to an AI shoreplant are less likely to occur without a set-aside or allocation to the community.

Processors will compete for deliveries of Pacific cod. The processors will compete on price and delivery terms and conditions, but the past relationships between harvesters and processors, especially those in AFA cooperatives, are expected to play a role in where CV operators deliver Pacific cod in the future.

Effects on Processors

Alternative 2a

Creates greater stability for processors by ensuring they have a certain amount of quota, and it allows them to offer incentives to their fleet that will help maintain deliveries from the fleet that had delivered to them during the qualifying years.

Most of the impacts of these elements will be the same as the No Action alternative with the exception of the impacts of the C/P processing limits on the various processing sectors and communities.

The two eligible C/Ps processing of Pacific cod as a mothership would be limited to their aggregate Pacific cod processing as a MS as a ratio of all Pacific cod processing of qualifying trawl CV deliveries. If a C/Ps allocation of QS results in a greater percentage, they would be allowed to process up to 125% of their calculated limit based on processing history. The C/P processing limit would constrain C/P to an average of their history meaning that they would not be allowed to process as great a percentage of the BSAI Pacific cod trawl CV sector apportionment as they did some years during the qualifying period, but more than other years during the period. The PCTC would eliminate their operational advantage of being close to the fishing grounds and allowing CVs to make relatively quick deliveries without being required to bleed the cod on the CV.

The C/P firm that would receive a larger limit based on processing history as opposed to LLP license QS the firms is allocated (Alternative 2b) would benefit more from this PCTC option but be worse off, in terms of a processing limit, than the No Action alternative.

Processors would be allocated 30 percent of the PCTC harvest QS. The allocation should result in more stability for processor's Pacific cod operations relative to the No Action Alternative or Alternative 2b.

Processor would hold 30 percent of the QS as a result of Element 5.4 and would hold the underlying asset value of those shares.

Processors would still need to offer sufficient CQ, a competitive ex-vessel price, or better delivery terms to retain CVs, since CVs are allowed to move between cooperatives annually.

At a 30 percent allocation to processors, processors will have difficulty offering sufficient compensation to entice additional CVs to deliver to it. The CV may determine that they can maximize profits by delivering to the old processor.

Not allocating the C season will have a minimal impact on processors overall. Processors will continue to be allowed to take deliveries from CVs that want to fish during the C season under a limited access fishery.

Past relationships between harvesters and processors, especially those in AFA cooperatives, are expected to continue to impact where CV operators deliver Pacific cod.

The ownership and use caps will not have a substantial impact on processing firms if the grandfather provision is included. Processors will be limited to the level of participation in the Pacific cod fishery they realized on average during in the recent past. A facility limit of 25 percent would be based on the total amount of CQ issued. It would allow four or fewer plants to process the entire sector allocation.

There is no processing limit at the firm level in the current suite of alternatives, so it is not included under Alternative 2a, Alternative 2b, or the PA. Not implementing a limit could allow a firm that has multiple plants to increase their processing of Pacific cod beyond historical levels, but it would be necessary to utilize plants that may be less efficient or further from the fishing grounds because of the facility cap.

Effects on Processors

Alternative 2b

Creates less stability for processors than the other alternatives in terms of Pacific cod deliveries. Processors will negotiate with harvesters and compete with each other for deliveries of Pacific cod. Harvesters, especially those with no ownership or affiliation linkage with their processor, will change cooperatives depending on who is able to offer the most attractive suite of benefits.

This option would provide processors less market power than they would have relative to either the No Action Alternative or Alternative 2a. Processors will still be allowed to enter the fishery, but only eligible C/Ps are allowed to act as a mothership. Eligible C/Ps are limited by the QS they owned 75% of as of December 31, 2019. This would allow one of the C/Ps to process more QS than they could under Alternative 2a and the two C/Ps combined to process more Pacific cod as motherships, and the C/Ps would have separate limits under both Alternative 2a and Alternative 2b.

Production quality is expected to be similar to Alternative 2a and the PA with shorebased processors focusing on fillet production for the domestic market. C/Ps will produce lower valued H&G or round products. Depending on the relative production costs the C/Ps acting as a MS may be less competitive on ex-vessel price than shorebased processors because of the lower first wholesale prices they receive. However, one firm would be unable to process all the Pacific cod CQ that is assigned to their LLP license and would not be in the market to attract additional deliveries. The other firm would hold CQ derived from LLP licenses they hold to attract deliveries.

Compliance costs are assumed to be higher than the No Action Alternative but about the same as Alternative 2a and the PA.

Processors would not be allocated QS based on their processing history. Some processors will be issued QS based on the LLP licenses they own. Ownership of LLP licenses varies by firm and ranges from firms owning no LLP licenses to owning up to the limit.

This alternative will provide processors less stability than either Alternative 2a or the PA. Processors will not be able to use a processor allocation of CQ to compensate harvesters for staying with their cooperative. As a result, ex-vessel price and other market incentives are expected to play a greater role in retaining vessels. The AFA linkages are expected to impact a CVs decision to deliver to a processor. However, the annual ability to move between cooperatives will require that a processor offer similar compensation to CVs for their Pacific cod or risk having them move to a different PCTC cooperative the following year.

AI shoreplants would have greater control over the use of a direct allocation of 10 percent of the CQ than a set-aside controlled by other cooperatives and would likely receive greater benefits. The requirement that CVs <60' LOA using a transferable AI endorsement harvest a minimum of 25 percent of the AI shoreplant allocation would reduce the benefits the plant receives from that portion of the allocation relative to allowing the plants to select the vessels that deliver.

Processors would not be issued QS so they would not be subject to an ownership/use cap under Element 8.3. Processors that own LLP licenses would still be subject to the smallest CQ ownership cap (10 percent of harvester CQ) and largest processing facility use cap (30 percent). The relatively small CQ ownership cap would not have a substantial impact if the grandfather provision is included.

The largest facility use cap would allow fewer and likely more efficient plants to process the deliveries to a single firm. Processors that operate a single plant would likely continue to take deliveries at that plant and not make arrangements for another plant to process Pacific cod harvested by members of the cooperative they are associated with unless the processors had or establish a close business relationship that would allow custom processing of their Pacific cod.

Effects on Processors

Alternative 3 (PA)

Any processors with an FPP or FFP take deliveries of CQ if they can attract CV deliveries, except C/Ps that are allowed to act as a mothership is limited under BSAI Amendment 120. The Council selected a processing limit of 125 percent of each C/Ps historical average during the qualifying period as part of its PA. The impact of that limit is expected to fall within the range described under Alternative 2a and Alternative 2b.

The Council selected 22.5 percent of harvest shares to be allocated to processors under its PA. The impact of allocating harvest shares to processors is expected to help provide stability to the harvesting and processing sectors and create incentives for both sectors to work together so they both benefit from the program. The allocation will grant the underlying long-term asset value of those QS to the processing sector. The CVs will still increase their underlying asset value based on the QS they are allocated as will the processors. Processors could use that asset value to obtain loans or to increase the value of their operation if they sell.

As discussed under Alternative 2a some processors will also benefit from owning LLP licenses that are assigned QS, but not all. Processors that do not hold LLP licenses may be more dependent on a processor allocation of harvest shares to compete with other processors. It may also create an incentive for greater vertical integration of firms as allowed under the MSA.

The percentage of QS allocated to processors will impact the ability of harvesters to be fully compensated for changing cooperatives. For example, if processors were compensating CVs at a percentage equal to the processor allocation, harvesters may be able to re-coop percent tied to a smaller processor allocation but have a more difficult time finding a processor that would make up the difference at the upper range considered. It may also be difficult for the new processor to make up that difference in ex-vessel price or cost saving.

The 30% allocation to processors would provide greater stability than the 5% allocation, but that stability could result from CVs having fewer options to move markets. The Council determined, based in part on an industry agreement, that 22.5 percent was the appropriate amount. The Council indicated its intent to monitor how well the program is meeting its objectives by requiring annual reports as well as the program reviews required under Section 303A of the MSA.

Larger percentage allocations of harvest shares to processors that have qualifying processing history may give them a market advantage relative to processors trying to enter the fishery. The relative size of the allocation will impact the extent of the barrier. The Council determined that the 22.5 percent allocation would not unduly limit entry.

The AI set-aside will benefit the AI shoreplant(s) during years the AI set-aside is in place if it (they) can offer a competitive ex-vessel price to attract deliveries from CVs associated with cooperatives formed around BS processors. If they are unable to compensate CVs to account for the higher costs of fishing in the AI, the CVs may choose not to deliver the CQ. However, because the set-aside covers both the A and B seasons, the CVs would need to forgo harvest of the CQ if they could not reach an agreement. Any deliveries to AI shoreplants will reduce the benefits of the program for the BS processors that are not associated with the AI shoreplants.

The ownership and use caps will not have a substantial impact on processing firms if the grandfather provision is included. Processors will be limited to the level of participation in the Pacific cod fishery they realized on average during in the recent past. However, a company limit of 20 percent, even with a grandfather provision, could prevent at least one firm from increasing their processing activity in the PCTC program. The PA would be more restrictive than Alternatives 2a or 2b, which considered the limits at the plant level.

Effects on Bycatch	
Alternative 1 (No Action)	<p>Halibut and crab PSC will continue to be apportioned at the TLAS level via regulations and at the fishery level during the harvest specification process.</p> <p>Given the importance of reducing halibut PSC, the trawl CV sector will likely continue to utilize halibut PSC avoidance measures in addition to continually seeking better ways to reduce halibut PSC.</p>
Alternative 2a	<p style="text-align: center;">96% of halibut PSC allocated to trawl CVs and 4% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 377 mt for Pacific cod, the C season limit would be 57 mt, while A and B seasons limit with the 35% reduction included would be 208 mt. The remaining 112 mt of halibut PSC would stay in the water. Despite the benefit of harvest specifications and the use of pot gear to reduce halibut PSC, there is a potential that a 35% halibut PSC reduction could limit cooperatives from harvesting all their CQ during periods of high TACs.</p> <p>Factoring in a 35% reduction for the red king crab (Zone 1) PSC limit would result in 1,479 animals for cooperative fishing during A and B seasons. The use of pot gear to harvest CQ could increase the risk of cooperatives being constrained by red king crab (Zone 1) PSC limit while fishing in Zone 1 crab savings area relative to 2b but the same as Alternative 3.</p> <p style="text-align: center;">The remaining crab PSC limits factoring in a 35% reduction are likely sufficient to not constrain cooperative fishing for Pacific cod in the associated crab savings areas.</p>
Alternative 2b	<p style="text-align: center;">97% of halibut PSC allocated to trawl CVs and 3% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 379 mt for Pacific cod, a 10% reduction would be 342 mt. The remaining 37 mt of halibut PSC would stay in the water. Under this alternative, relative to Alternatives 2a and 3, cooperatives are likely to adjust to the 10% reduction in halibut PSC using the benefits of cooperative management. However, there is some potential at very high Pacific cod TAC levels that the 10% reduction could constrain some cooperatives.</p> <p style="text-align: center;">Under this alternative, crab PSC limits would continue to be apportioned at the TLAS level and therefore would likely not constrain the BSAI Pacific cod fishery for the trawl CV sector or the AFA C/P sector.</p>
Alternative 3 (PA)	<p style="text-align: center;">98% of halibut PSC allocated to trawl CVs and 2% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 382 mt for Pacific cod, the C season limit would be 19 mt, while A and B seasons limit with the 25% reduction would be 272 mt. The remaining 91 mt of halibut PSC would stay in the water. Despite the benefit of harvest specifications and the use of pot gear to reduce halibut PSC, there is a potential that a 25% halibut PSC reduction could limit cooperatives from harvesting all their CQ during periods of high TACs.</p> <p>Factoring in a 35% reduction of red king crab (Zone 1) PSC would result in 1,652 animals for cooperative fishing during A and B seasons, which could constrain the sector to fish some portion of its CQ outside Zone 1 crab savings area but less than under Alternative 2a.</p> <p style="text-align: center;">The remaining crab PSC limits factoring in a 35% reduction are likely sufficient to not constrain cooperative fishing for Pacific cod in the associated crab savings areas.</p>

Effects on other groundfish fisheries

<p>Alternative 1 (No Action)</p>	<p>Sideboards are the primary management tool. Given the continued seasonal conflicts between BSAI Pacific cod fishery and the GOA groundfish fisheries. Given these continued seasonal conflicts, it is likely harvest of GOA AFA trawl CV sideboard fisheries would continue under this alternative.</p> <p>Harvest participation and fishing practices in the BSAI TLAS fisheries for the trawl CV sector are likely to be similar to current participation and fishing practices.</p>
<p>Alternatives 2a, 2b, 3 (PA)</p>	<p>Relatively to the existing GOA AFA sideboard limits, the revised GOA AFA sideboard limits for all three action alternatives are lower compared to the existing limits due to the limited fishing activity. Although not always the case, the narrower the set of years used to determine the revised sideboard limits the smaller the revised sideboard limit.</p> <p>The alternatives also prohibit AFA GOA sideboard exempt vessels and non-AFA vessels assigned to LLP licenses with QS from leasing their CQ on the condition from benefiting from GOA sideboard exemption unless the vessel did not fish in the GOA during the calendar year (except for the CGOA Rockfish Program). This provides greater flexibility for those GOA exempt vessels that are not designed to deliver Pacific cod shoreside and have a limited offshore market.</p> <p>An option is included to allow leasing of BSAI Pacific cod CQ for GOA exempt vessels assigned to LLP licenses with less than 200 mt of average annual qualifying BSAI Pacific cod catch history for Alternative 2a and less than 600 mt of average annual qualifying BSAI Pacific cod catch history for Alternative 2b. Alternative 3 would allow leasing if the LLP license has less than 300 mt average annual qualifying BSAI Pacific cod catch history. Under Alternative 2a, 8 GOA exempt vessels had LLP licenses with less than 200 mt of average annual qualifying BSAI Pacific cod catch history, while Alternative 2b had 23 GOA exempt vessels with less than 600 mt of average annual qualifying BSAI Pacific cod catch history. Alternative 3 had 18 GOA exempt vessels with less than 300 mt of average annual qualifying BSAI Pacific cod catch history. Note that the 1% minimum threshold option in Element 2.1 that is included in Alternative 2b would eliminate all 23 of the GOA exempt vessels with less than 600 mt of average annual qualifying BSAI Pacific cod catch history.</p> <p>For other TLAS fisheries, the yellowfin sole fishery was likely the only TLAS fishery that could be impacted from the PCTC Program. However, since AFA C/Ps are already cooperatively managed the 8 trawl CVs authorized to deliver BSAI yellowfin sole to C/Ps acting as motherships will be cooperatively managed once the PCTC Program is implemented, and there is no inshore yellowfin sole market at this time, sideboard limits for 8 PCTC Program qualified trawl CVs are likely not necessary.</p>

Effects on fishing communities

<p>Alternative 1 (No Action)</p>	<p>Existing patterns of community engagement in and dependency on the fishery are unlikely to fundamentally change under this alternative.</p> <p>LLP license and CV ownership would remain concentrated in the Seattle MSA, Newport, and Kodiak. Shore-based processing would remain concentrated in Unalaska/Dutch Harbor and Akutan, given their proximity to the Bering Sea fishing grounds; in Adak (when a local shore-based processor is operating), given its proximity to the AI fishing grounds; and, in more limited amounts and in some years, in King Cove and Sand Point.</p> <p>Private sector support services within the BSAI region itself would remain largely concentrated in Unalaska/Dutch Harbor.</p>
<p>Alternatives 2a, 2b, 3 (PA)</p>	<p>Consolidation of CV effort in the BSAI Pacific cod trawl fishery is expected to occur under any of the action alternatives, as not all vessels owned, operated, or controlled by cooperative members that fished during the historical qualification period would be needed to efficiently harvest the cooperative quota. It is likely, however, that consolidation of vessels themselves (that is, vessels exiting all commercial fishing) would be limited by catch history being attached to the LLP license and being non-severable under all three action alternatives. For a large majority of relevant CVs, BSAI Pacific cod represents a relatively modest proportion of their overall fishing portfolio and, from a community perspective, retention of active local vessels focused on other fisheries in their annual round portfolio would be a key to minimizing adverse effects of the consolidation of CV effort in the BSAI Pacific cod trawl fishery as crew would still be employed, fish would still be delivered, and support service businesses would still have those vessels as a part of their customer base. Harvester issued QS/CQ ownership and use caps and vessel use caps, included in each of the action alternatives, would also tend to reduce quota ownership and use consolidation across communities both in Alaska and in the Pacific Northwest. Alternatives 2a and Alternative 3 contain an option (2.2.4) and suboption (7.1.1), respectively, that would protect, at least in part, those CDQ entities with ownership interests in CVs that have as a practice leased their AFA sideboarded BSAI Pacific cod history during the respective qualification periods of these two alternatives.</p> <p>An important distinction for several Alaska local community fleets between the action alternatives is that under Alternatives 2a and 3, which do not include C season allocations, reallocations from the BSAI Pacific cod trawl sector to the <60' HAL and pot sector would be more likely to continue, more likely to continue at higher levels, and would occur earlier in the year than would be the case under Alternative 2b. These reallocations have accounted for a substantial portion of total reallocations received by the < 60' HAL and Pot sector and these have been particularly important for the Unalaska/Dutch Harbor community fleet. Alternatives 2a and 3 would also potentially provide more new entry opportunities than Alternative 2b. Conversely, under Alternative 2b, which includes C season allocations, those individuals, entities, and communities in Alaska and the Pacific Northwest directly engaged in BSAI Pacific cod trawl CV sector would have a greater chance to realize more of the full potential value of the existing overall sector allocation than has historically been the case under status quo conditions.</p> <p>Under Alternative 2a and Alternative 3, processors would be allocated a percentage of harvest shares based on their processing history that would function to promote stability for qualifying processors. For Unalaska/Dutch Harbor and Akutan, ownership and operation of the relevant plants have been relatively stable, so changes that may take place under a CV cooperative system at the plants in those communities would likely be minor (and beneficial) from the community perspective. The community of Adak, with a more complicated history of local shore-based processing operational ownership (and intermittent operations) is more at risk of experiencing adverse community impacts from an allocation based strictly on processing history, absent AI processor provisions under Element 6 (variations of which are included in each action alternative) that could benefit Adak, Atka, or both in any given year. Trawl-caught deliveries of BSAI Pacific cod made to the Sand Point plant during the various historical qualifying periods have been characterized by company management as occurring in relatively small amounts and typically only when their Akutan plant was otherwise at maximum capacity during peak race-for-fish conditions, circumstances that are not expected to occur under any of the action alternatives. Given the minor contribution of trawl-caught BSAI Pacific cod deliveries to the overall operations of the Sand Point plant, no adverse community level impacts are anticipated for Sand Point under any action alternatives, aside from a minor decline in city raw seafood tax and shared state fisheries business tax revenues, even if local deliveries were to be discontinued. Processing of trawl-caught BSAI Pacific cod has varied considerably from year to year during the historical qualifying periods, but in general the value of deliveries of trawl-caught BSAI Pacific cod were modest compared to other deliveries from other fisheries accepted at the King Cove plant. One of the potentially important</p>

differences between the action alternatives from the King Cove perspective, however, would be the “drop two years” feature of Alternative 2b, which would allow the dropping of 2010 and 2014, the only two years over the 2004-2019 span when no trawl-caught BSAI Pacific cod deliveries were made to the King Cove plant. The King Cove plant, unlike the Sand Point plant, is home base for one of the AFA cooperatives, which likely would provide additional impetus for the continuation of BSAI Pacific cod CV trawl landings in the community. There is no closed class of processors under any of the action alternatives and, while potential new entrants would likely be at a competitive disadvantage under Alternative 2a and Alternative 3, as qualifying processors would be allocated a percentage of harvest shares, under Alternative 2b there would be no initial allocation of harvest shares to processors. Interest has been expressed in recent years in increasing local fishery diversification into the BSAI Pacific cod fishery in multiple CDQ communities, including Atka, St. Paul, False Pass, Nome, and Savoonga in both local harvesting and processing sectors. These communities, to varying degrees, face a range of challenges to entry in the BSAI Pacific cod CV trawl shore-based processing sector unrelated to implementation of a BSAI trawl CV cooperative program and are at different stages in potentially addressing these challenges.

Fishery support service businesses could be adversely affected by CV and/or shore-based processor consolidation of effort under a cooperative system if vessels and/or processors formerly active in the BSAI Pacific cod CV trawl fishery do not increase their participation in alternate fisheries. While the amount of BSAI Pacific cod harvested would not be directly impacted, fewer vessels involved in the harvest and fewer plants involved in the processing would equate to a lower demand for some types of support services. Many support service suppliers are in the Seattle MSA as well as in and around Newport, Oregon, including suppliers of a range of services (and a scale of services) not available in Alaska. Support services in the BSAI region itself are largely concentrated in Unalaska/Dutch Harbor. Many of the same support service businesses in Unalaska/Dutch Harbor that support the BSAI Pacific cod trawl CV fleet also support the < 60' HAL/pot fleet and could experience adverse impacts from a loss of revenue by that fleet if reallocations from the trawl sector were to decrease in frequency or amount under a cooperative system. Similar decreases in service provision demand due to consolidation of the trawl fleet or adverse impacts to the < 60' HAL/pot fleet could impact municipalities through declines in sales tax revenues or usage fees for waterfront infrastructure-based services. Similarly, municipal harbor infrastructure fee-based public revenue may decline in relation to the fewer CVs participating in the BSAI Pacific cod trawl fishery but, like support service business private sector revenues in any given community, only to the extent that those vessels no longer active in the BSAI Pacific cod trawl CV fishery due to consolidation of harvesting effort within a cooperative system are not active in other fisheries in the same area.

Given the history-based nature of the initial allocations under each of the action alternatives, no substantial shifts in patterns of fishery landings between communities are anticipated, nor are substantial shifts in the accompanying patterns of revenue accruing to municipalities in Alaska from local raw fish taxes or shared state fishery business taxes. Overall, the management of the fishery under any of the action alternatives would allow for greater predictability for fishery participants and would provide for increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions. This flexibility has the potential for decreasing vulnerability to adverse conditions and increasing resilience following adverse events or accompanying adverse trends, including adverse effects of climate change, for involved individuals, entities, and communities.

Effects on crew	
Alternative 1 (No Action)	<p>Existing trends would continue. Short seasons on crowded fishing grounds under race-for-fish conditions would continue to yield variable results for fishing crew.</p> <p>Shore-based and floating processor crews are engaged in processing BSAI Pacific cod harvested by trawl CVs for a relatively short period of time at the end of January and the beginning of February.</p> <p>Because the BS Pacific cod fishery currently coincides with the BS pollock fishery, some plants must employ substantially larger crews that are juggled between lines/plants to process landings from both fisheries.</p> <p>Processing landings from non-rationalized fisheries hinder the ability of plants to develop employment schedules that require fewer processing crew being brought into Alaska communities for relatively short periods of time.</p>
Alternatives 2a, 2b, 3 (PA)	<p>Fewer vessels are expected to fish for Pacific cod and that would result in a decrease in captain and crew jobs in the BSAI Pacific cod trawl CV fishery, while those jobs that do remain are expected to result in more stable employment in the Pacific cod fishery at higher overall levels compensation per crew member per season than under status quo conditions. Vessels that leave the Pacific cod fishery would likely specialize in their other fisheries that they currently participate in during the year, especially the BS pollock and GOA fisheries.</p> <p>Crew would likely work longer seasons and crew compensation per unit effort could be negatively impacted if crew shares were adjusted to cover costs of leasing harvesting quota.</p> <p>The remaining crew jobs could feature better working conditions, be safer with a discontinuation of race-for-fish conditions, provide better season-to-season employment potential, and allow for compensation predictability.</p> <p>The non-severability of quota from the LLP licenses is expected to minimize overall crew job losses, especially aboard BSAI Pacific cod trawl CVs with Alaska ownership addresses, as those vessels are primarily focused on GOA fisheries.</p> <p>Crew members on Alaska ownership address vessels that no longer participate directly in the BSAI Pacific cod fishery may still participate in other fisheries in the GOA pursued by the vessels on which they work. These crew positions may also be perceived by a substantial portion of the crew as more desirable due to fishing closer to home.</p> <p>Although the Pacific cod fishery is a relatively small portion of the processing portfolio of most of the qualified processors, the cooperative program alternatives are likely to contribute to stability in processing crew employment. This increased stability could lead to fewer processing jobs at peak times, but the remaining jobs should provide more stable and consistent employment and allow workers to move between processing different species as needed. If similar hiring conditions remain in place after a cooperative program is implemented, overtime hours would likely continue to be available to processing workers.</p>

Effects on safety	
Alternative 1 (No Action)	<p>Current BSAI trawl CV Pacific cod fishery requires vessel operators to compete for a share of the BSAI trawl CV sector apportionment of Pacific cod during a brief A season and to a lesser extent the brief B season and the C season. This can result in vessel operators fishing when conditions are poor, if others are fishing, to avoid a reduction in harvest and income. BSAI weather conditions during the A season (the end of January and beginning of February) can be unpredictable and dangerous, especially for smaller CVs.</p>
Alternatives 2a, 2b, 3 (PA)	<p>Management of the BSAI trawl CV Pacific cod fishery under the PCTC Program is expected to extend the A season from about 2-weeks at the end of January and early February to fishing the second week in February through the end of March which could improve safety at-sea by allowing vessel operators to not fish in bad weather. The B season could also be selectively fished in better weather after the end of the A season. The C season will remain a limited access fishery, but the pace of that fishery has been slow and it should continue to allow vessel operators to avoid fishing during unsafe weather conditions.</p>

Effects on Monitoring and Enforcement	
Alternatives 2a, 2b, 3 (PA)	See Table 2-185 in Section 2.10.7 for a summary of the types of impacts of monitoring and enforcement requirements to implement the proposed PCTC Program.

Effects on net benefits to the Nation	
Alternatives 2a, 2b, 3 (PA)	It is expected that any PCTC Program action alternative will result in greater net benefits to the Nation compared to Alternative 1. The increase in net benefits is a result of increases in both producer and consumer surplus (see Section 2.10.11).

Summary of Environmental Assessment

Overall, the Environmental Assessment (EA) of the current alternatives did not identify any significant effects on the biological, physical, or human environment. The current fishery management program was analyzed in detail in the Groundfish Programmatic Supplemental Environmental Impact Statement.

The EA analyzes the cumulative effects of each alternative and the effects of past, present, and reasonably foreseeable future actions (RFFA). The cumulative effects on the other resources have been analyzed in numerous documents and the impacts of this proposed action and alternatives on those resources is minimal, therefore there is no need to conduct an additional cumulative impacts analysis for those resources.

The sections presented in this EA focus on Pacific cod (Section 3.2), Prohibited Species Catch (Section 3.3), incidental catch (Section 3.4), and marine mammals (Section 3.5). No significant effects are presumed for ecosystem component species, seabirds, habitat, or the ecosystem because harvest limits (TACs), habitat protections (such as closed areas), and current or proposed fishing regulations as described in previous documents (NMFS 2005; NPFMC and NMFS 2017; NPFMC 2018) would not be changed by any of the alternatives.

The alternatives, including the preferred alternative selected by the Council in October 2021, have the potential to affect BSAI groundfish, prohibited species, marine mammals, and social and economic components. For groundfish, increased seasonal flexibility is not likely to increase overall fishing pressure. The intensity of trawling would remain unchanged because current regulations define the methods that may be used, areas in which trawling is allowed, and restrict the maximum amount of trawling to TAC levels. Even if there is a redistribution of effort, the fishery will likely remain within the established footprint of the trawl fishing grounds. In addition, rationalized fisheries have been shown to be beneficial to resource components by reducing the race for fish. The fishery has been closing quickly due to race for fish and getting to the TAC limit very shortly after the season opens. However, the fishery season would remain the same, so therefore timing would remain the same. If the TAC increased substantially, the season would remain open for the duration.

PSC rates may decrease slightly from the status quo if fishing effort moves away from periods with relatively high PSC rates or the fleet implements fishing practices that are known to reduce PSC rates (i.e., eliminating night fishing and using halibut escapement devices in the fishing nets).

No change in the number of incidental takes for Steller sea lions (SSL) is expected under either alternative. As compared to the status quo, Alternatives 2a, 2b and 3 (PA) may have potential impacts on a portion of the western DPS of SSL in the BSAI due to any changes in availability of Pacific cod due to spreading catch over a longer period of time, but not in a way that may be measurable or discernable separate from all the other variables that affect fishery operations and natural variation.

Any effects to habitat continue to be limited by the amount of the groundfish TACs and by the existing habitat conservation and protection measures. Overall, the combination of the direct, indirect, and cumulative effects on habitat complexity for both living and non-living substrates, benthic biodiversity, and habitat suitability is not likely to be significant under any of the alternatives.

Relevant past and present actions are described in several documents and are incorporated by reference. These include the PSEIS (NMFS 2004), the EFH EIS (NMFS 2005), the harvest specifications EIS (NMFS 2007), and the EA/RIR/IRFA to implement Amendment 85 (72 FR 50787) to the BSAI FMP (NPFMC 2007). This analysis provides a brief review of the RFFAs that may affect environmental quality and result in cumulative effects. Future effects include harvest of federally managed fish species and current habitat protection from federal fishery management measures, harvests from state managed fisheries and their associated protection measures, efforts to protect endangered species by other federal agencies, and other non-fishing activities and natural events.

Considering the direct and indirect impacts of the proposed alternatives when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the RFFAs listed above, the cumulative impacts of the proposed alternatives are determined to be not significant.

1 Introduction

This Environmental Assessment (EA) and Regulatory Impact Review (RIR) analyzes a proposed Pacific Cod Trawl catcher vessel (CV) Program (PCTC Program) considers allocations of quota shares (QS) to groundfish License Limitation Program (LLP) licenses based on the harvest of targeted³ Bering Sea and Aleutian Islands (BSAI) Pacific cod during the qualifying years.⁴ From this point forward, all references to LLP licenses throughout the document refer to groundfish LLP licenses, unless otherwise noted. The action also considers allocating harvest shares to a processor permit based on processing history of BSAI Pacific cod during the qualifying years. This QS would yield an exclusive harvest privilege for use in a BSAI trawl CV Pacific cod catch cooperative. The intent of this action is to improve the prosecution of the fishery by promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, minimizing bycatch to the extent practicable, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

This RIR/EA addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (MSA), the National Environmental Policy Act (NEPA), Presidential Executive Order (E.O.) 12866, and some of the requirements of the Regulatory Flexibility Act (RFA). An RIR/EA is a standard document produced by the North Pacific Fishery Management Council (Council or NPFMC) and the National Marine Fisheries Service (NMFS) Alaska Region to provide the analytical background for decision-making. The RIR describes the benefits and costs of the alternatives, the distribution of impacts, and identification of the small entities that may be affected by the alternatives. This RIR also integrates an analysis of the social and fishing community impacts of the proposed action typically found in a Social Impact Assessment (SIA). The EA section of the document provides assessments of the environmental impacts of a proposed action and its reasonable alternatives. However, this integrated document as a whole is considered to be the EA prepared for this action, since some NEPA requirements for the EA are included in the RIR sections.

This EA is being prepared using the 1978 Council on Environmental Quality (CEQ) NEPA Regulations. NEPA reviews initiated prior to the effective date of the 2020 CEQ regulations may be conducted using the 1978 version of the regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020.⁵

³ The analysis includes a brief discussion of whether the initial allocation should include all BSAI Pacific cod trawl CV sector Pacific cod catch and not just targeted Pacific cod catch attributed to that sector. Impacts on incidental catch of Pacific cod in other directed fisheries and management considerations are the focus of those discussions.

⁴ The map provided in Figure 2-1 illustrates the BSAI reporting areas in which this action would occur.

⁵ This review began on prior to September 9, 2020 and the agency has decided to proceed under the 1978 regulations.

2 Regulatory Impact Review

This RIR examines the economic benefits and costs of a proposed regulatory amendment that authorizes the owners/operators of CVs targeting Pacific cod in the BSAI to develop harvesting cooperatives that are granted access to a specific amount of the sector's apportionment. This RIR also integrates an analysis of the social impacts and fishing community impacts of the proposed action typically found in an SIA. The purpose of this action is to improve the prosecution of the fishery with the intent of promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, minimizing bycatch to the extent practicable, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

The preparation of an RIR is required under E.O. 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the E.O.:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

2.1. Statutory Authority

Under the MSA (16 U.S.C. 1801, *et seq.*), the United States has exclusive fishery management authority over all marine fishery resources found within the exclusive economic zone (EEZ). The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing fishery management plans (FMPs) and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the Federal mandates of the Department of Commerce with regard to marine and anadromous fish.

The groundfish fisheries in the EEZ off Alaska are managed under the FMP for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP). The proposed action under consideration would amend both FMPs and Federal regulations at 50 CFR §679. Section 303A of the MSA (16 U.S.C. 1853a)

authorizes the creation of limited access privilege programs (LAPPs). Actions taken to amend FMPs or implement regulations governing these fisheries must meet the requirements of applicable Federal laws, regulations, and executive orders.

2.2. Purpose and Need

It is generally understood that current regulations that limit harvest directly through limitations on total allowable harvest and input controls can make the harvesting and processor sectors less efficient. However, management that relies on catch share programs is expected to result in improved technical efficiency through retirement of redundant capital, more efficient use of retained capital and other inputs, and quota transfers from less efficient to more efficient trawl CVs (Marine Policy, 2015).

Recognizing the benefits of a catch share program in addressing increasing inefficiency in the BSAI trawl CV Pacific cod fishery, the Council at its February 2019 meeting adopted a purpose and need statement as part of a request for a scoping paper that considered development of a cooperative based program for the BSAI Pacific cod trawl CV fishery.⁶ At the October 2019 meeting, the Council, while conducting a review of the scoping paper, adjusted the purpose and need statement to reflect the Council's intent to provide stability in the harvesting and processing sectors and to provide for sustained participation of fishery dependent communities while ensuring the sustainability and viability of the BSAI Pacific cod resource. In December 2020, the Council further modified the purpose and need statement to include minimizing bycatch to the extent practicable. The Council noted that participants with exclusive shares of BSAI Pacific cod will have time to be more selective in determining when, where, and how to harvest their allocation and thereby potentially reduce their halibut and crab prohibited species catch (PSC) usage and rates. Recognizing the increased opportunity to minimize bycatch as a benefit of catch share programs, the Council included minimizing bycatch to the extent practicable as part of the purpose and need statement. Provided below is the revised purpose and need statement:

Over the last several years, total allowable catch for Pacific cod in the Bering Sea-Aleutian Island has steadily decreased. The pace of the fishery has contributed to an increasingly compressed season, resulting in decreased ability to maximize the value of the fishery and negatively impacting all fishery participants (catcher vessels, motherships, shoreside processors, and communities). This race for fish also discourages fishing practices that can minimize bycatch and threatens the sustained viability of the fishery. The Council is considering the development of a cooperative-based program to improve the prosecution of the fishery, with the intent of promoting safety and stability in the harvesting and processing sectors, minimizing bycatch to the extent practicable, increasing the value of the fishery, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

The Council's October 2021 preferred alternative (PA) addresses the stated purpose and need to improve the prosecution of the fishery by slowing the pace of the fishery and increase the season length as harvesters will no longer be competing for a share of the fishery and processors will not need to add capacity to keep up with a frenzied pace of deliveries. The pace of the derby fishery puts economic pressures to fish in weather conditions that could be unsafe, but this economic pressure can be reduced or avoided in a rationalized fishery.⁷ Safety in the fishery is also improved by reducing overcrowding on the fishing grounds which reduces the potential for gear interactions.

Stability: Catch share programs in Alaska have resulted in stable harvesting and processing sectors, especially as the programs have matured, where stability means (predictable number of participants and fishery pace, for example). We anticipate similar results will occur under the Council's PA, which meets

⁶ Motion from February 2019: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=68547653-a558-4b6e-8318-70444670bca5.pdf&fileName=C4%20MOTION%20BSAI%20Pcod%20Trawl%20CV%20Scoping%20Document.pdf>

⁷ A rationalized fishery allocated fishery resources among participants like harvesters and processors through limiting access that balances the interests of several groups that depend on these fisheries.

the goal of providing stability to sector participants. Several components of the PA are designed to promote stability including allocations to harvesters and processors to balance market power, cooperative-style management which allows transfers between cooperatives so full harvest of Pacific cod cooperative quota (CQ) can occur, and ownership and use caps that limit consolidation and prevent acquisition of excessive shares.

Some components of the PA result in tradeoffs between the goals and objectives in the purpose and need. For example, reducing PSC levels could result in greater instability for the sectors but may better achieve the objective of minimizing bycatch to the extent practicable. Limitations on the catcher/processor (C/P) sector action as motherships may be slightly more disruptive to their operations creating more uncertainty for the C/Ps and the CVs that have traditionally delivered offshore, but this slight C/P disruption will provide for the sustained participation of fishery dependent communities.

Minimize bycatch: The objective to minimize bycatch consistent with the purpose and need and National Standard 9 is met by individual and cooperative accountability of PSC usage which will increase incentives to avoid PSC to the extent practicable. PSC apportionments within cooperatives and across cooperatives will have a high value as the limited availability of those species could constrain the value derived from the Pacific cod fishery and result in enforcement actions and associated fines if exceeded. Reduction in the PSC limits available to the sector/cooperatives will help ensure that harvesters utilize fishing practices that minimize bycatch to the extent practicable.

Increased value: The objective to increase the value of the fishery is expected to be met by slowing the pace of the fishery and allowing harvesters to deliver higher quality Pacific cod to the processors. Processors also have the ability under the PA to slow throughput at the plants and produce higher quality fillets or value-added products.

Sustained participation: Providing for the sustained participation of fishing communities objective is met in a few ways. Gulf of Alaska (GOA) sideboards are designed to protect Gulf community fleets from increased competition resulting from rationalization of the BSAI trawl CV fishery. Limits on C/P processing and processor allocations could serve to stabilize landings in communities the historically depend on BSAI Pacific cod processing. Additionally, the Aleutian Islands (AI) processor provisions under Element 6 could have beneficial impacts to communities in the western AI region (and potentially have adverse impacts to communities in other regions). Finally, the inability to sever catch histories from LLP licenses and setting ownership and use caps helps to limit consolidation of harvesting and processing activity between communities.

Sustainability and viability of the resource: NMFS and the Council will continue to utilize the best science available to establish harvest levels in the BSAI Pacific cod fishery. Individuals and cooperatives will need to ensure they do not exceed their available quota or risk being subject to fines by the cooperatives or Office of Law Enforcement (OLE) enforcement actions. Together these will help ensure that the trawl CV sector apportionment is not exceeded on an annual basis.

2.3. History of this Action

2.3.1. February 2019

The Council, while completing an initial review at their February 2019 meeting of an action to limit certain Amendment 80 and American Fisheries Act (AFA) C/Ps acting as motherships when receiving non-community development quota (CDQ) BSAI Pacific cod deliveries from trawl CVs, initiated the cooperative program analysis as a separate action. At that meeting, the Council bifurcated its action into two separate actions: 1) alternatives that would constrain when C/Ps can act as a mothership (implemented under the BSAI FMP Amendment 120) and 2) trawl CV management structure alternatives (the current alternatives under consideration are included in this proposed amendment). The Council noted that bifurcating the C/P mothership limitations from the trawl CV management alternatives was

necessary to control offshore processing activity to protect critical revenue streams and economic development in coastal Alaska communities. The Council also noted that the trawl CV management alternatives did not capture the full scope of the issues faced by the BSAI Pacific cod participants.

During the February 2019 meeting, the Council initiated an action to address the numerous concerns being encountered in the BSAI Pacific cod trawl CV fishery, which superseded the previous trawl CV management alternatives that were evaluated in the initial review document noted above. The Council requested the development of a scoping paper that considers methods to rationalize the BSAI Pacific cod trawl CV fishery.⁸ The Council requested a scoping document instead of a discussion paper, because it felt a scoping document indicates that the issue is farther along than the discussion paper stage. The Council also stated that this scoping paper signals that the Council has a greater intent to move forward on the issue. At the same time the Council approved development of the scoping document, it encouraged stake holders to begin a parallel process of working to develop approaches to developing a catch share program for the BSAI Pacific cod trawl CV fishery that address their concerns.

Specifically, the Council requested that staff address the following issues so they could be incorporated into a comprehensive BSAI cod trawl CV management program:

- allocation of BSAI Pacific cod quota share to BSAI LLP licenses
- establishing trawl CV cooperative(s) for Pacific cod
- recognition of historical AFA cooperative-based cod harvest arrangements since the implementation of pollock cooperatives under the AFA
- recognition of historical harvest of AFA cod exempt boats
- recognition of historical harvest of non-AFA boats
- protections for harvesters, processors, and communities
- use caps, transfer requirements, and other administrative requirements that apply to quota programs
- establishing sideboard limits to protect limited access GOA and BSAI fisheries
- consideration of management changes on CV crew; and
- implications for bycatch management, including halibut savings to benefit the health of halibut resource.

The Council also established a control date of February 7th, 2019, that may be used as reference for any future management action to address trawl CV participation in the BSAI Pacific cod fishery. For more discussion concerning the control date and its impacts, see the text immediately following the description of Element 2 in Section 2.9.2.

2.3.2. October 2019

At the October 2019 meeting, the Council received the scoping paper, revised its purpose and need statement, and provided alternatives, elements, and options for a proposed PCTC Program style LAPP. The Council is currently considering a cooperative program where any LLP license assigned to a vessel that authorized that vessel's legal landings of targeted BSAI trawl CV Pacific cod during the qualifying years is eligible to receive harvest shares.⁹

⁹ Motion from October 2019: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=8ec692b1-f98b-4195-808a-11ca5ded71f0.pdf&fileName=D2%20MOTION.pdf>

2.3.3. December 2020

At the December 2020 meeting, the Council completed an initial review of the PCTC Program. After reviewing the analysis, Advisory Panel (AP) recommendations, and listening to public testimony, the Council modified the purpose and need statement to include minimizing bycatch to the extent practicable and adjusted several of the elements and options under consideration. Section 2.4 provides a description of the elements and options as well as the complete motion.¹⁰

2.3.4. June 2021

At this meeting, the Council conducted a second initial review of an analysis for a BSAI Pacific cod trawl CV LAPP. After reviewing the analysis, Scientific and Statistical Committee (SSC) recommendations, AP recommendations, and listening to public testimony, the Council recommended releasing the analysis for final action during the October 2021 meeting after addressing comments from the SSC to the extent practicable. The Council selected a preliminary preferred alternative (PPA) and adjusted several of the elements and options. Section 2.4 provides a description of the elements and options as well as the complete PA.¹¹

2.3.5. October 2021

The Council reviewed the final analysis for a BSAI Pacific cod CV LAPP, SSC and AP recommendations, and listened to public testimony. After careful consideration of all the information presented, the Council selected its PA, which is described in Section 2.4.1. A copy of the final October 2021 Council motion is provided in Appendix 8.1.

2.4. Elements, Options, and Alternatives

2.4.1. Description of the Preferred Alternative

To address the problem statement, the Council selected a PA that includes a suite of elements and options to manage the BSAI trawl CV Pacific cod sector. The alternatives proposed include no action (Alternative 1) and implement a cooperative style LAPP for the BSAI Pacific cod trawl CV sector (Alternatives 2a and 2b and Alternative 3 which is the Council's PA) that are described in Table 2-1. In general, the preferred cooperative style LAPP considers allocations of QS to groundfish LLP licenses based on the legal landings of targeted BSAI Pacific cod in a federal fishery during a range of qualifying years included in the options. The PA also considers allocating QS to a processor permit based on processing history of targeted BSAI Pacific cod harvested in a federal fishery and deducted from the BSAI trawl CV sector apportionment during the qualifying years. The PA, if approved by the Secretary of Commerce, would yield an exclusive harvest privilege for a portion of the trawl CV sector's BSAI Pacific cod initial total allowable catch (ITAC) allocation, after the deduction of any incidental catch allowance (ICA) required to support other directed fisheries, for use in a PCTC Program cooperative.

The preferred PCTC Program would be a voluntary harvester cooperative in association with a legally permitted processor (Element 1). Any vessel assigned to an LLP license that authorized the vessel's legal landings of targeted BSAI trawl CV Pacific cod during the qualifying years would be eligible to receive QS (Element 2.1).

To determine the amount of QS allocation to be assigned under the PA, the Council selected 2009 to 2019 (Option 2.2.2) with one drop year of targeted BSAI Pacific cod landings from a federal fishery that was deducted from the BSAI trawl CV sector apportionment. In December 2020, the Council clarified that

¹⁰ Motion from December 2020: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=92f64c83-c2cd-4a56-b707-834ae92c3ab7.pdf&fileName=C5%20Motion.pdf>

¹¹ <https://meetings.npfmc.org/CommentReview/DownloadFile?p=3cb4fcde-cb4f-4fae-8256-c5ff230f8697.pdf&fileName=C4%20Council%20Motion.pdf>

catch history to determine QS will not be considered beyond December 31, 2019 (see Section 2.9.2). In the case of stacked LLP licenses that authorized qualifying catch history when no agreement is provided by the vessel owner/license holders at the time of application, qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch (Option 2.3.2). NMFS would issue CQ to cooperatives by season (Element 2.4), and the recommended program would allocate only A season and B season QS, leaving the C season (15 percent) as a limited access fishery available to any trawl CVs with an eligible groundfish LLP license and appropriate endorsements (Element 2.5).

The Council clarified in their PA that the annual halibut and crab PSC limits available to the BSAI trawl CV Pacific cod sector would be established through the annual specifications process. The Council recommended establishing a trawl CV BSAI halibut PSC apportionment for the Pacific cod fishery based on historical use of halibut between trawl CV sector and the AFA C/P sector, while for BSAI crab PSC, the apportionments would be based on the proportion of BSAI Pacific cod allocated to the two sectors (Element 3). The Council's PA would reduce the halibut PSC apportionment to the BSAI trawl CV Pacific cod sector by 25 percent for halibut and 35 percent for crab (Element 3, Option 3.3). Any reduction of halibut and crab PSC associated with Option 3.3 would not be reapportioned to other Trawl Limited Access Sector (TLAS) fisheries. The reduction to the halibut PSC limit would be phased over 2 years (Suboption 3.3.3). Element 3.4 would establish a separate C season halibut and crab PSC apportionment of 5 percent before applying PSC limit reductions. Finally, PSC limits would be transferable between cooperatives.

The Council's PA includes GOA sideboard limits for PCTC Program qualified LLP licenses. Option 4.1 would change the AFA non-exempt GOA groundfish and halibut PSC sideboard limits for all non-exempt AFA LLP licenses and CVs based on 2009-2019 qualifying years (Option 2.2.2). AFA non-exempt GOA halibut PSC sideboard limits would be managed as an annual limit. Option 4.2 would restrict AFA CVs that are exempt from AFA GOA sideboards, non-AFA trawl CVs, and CVs assigned to LLP licenses endorsed for less than 60' length overall with an Aleutian Islands (AI) transferable endorsement from leasing their BSAI Pacific cod CQ as a condition of being exempt from GOA sideboards in the proposed Pacific cod LAPP. Vessels assigned a qualified GOA exempt LLP license that does not fish in the GOA during the calendar years, except for the CGOA Rockfish Program, would be able to lease their BSAI Pacific cod CQ generated by the LLP license for that calendar year. In addition, vessels with LLP licenses less than 300 mt of average annual qualifying BSAI Pacific cod catch history would be able to lease their BSAI Pacific cod CQ.

Element 5 is included to address community and processing sector issues associated with the creation of the proposed LAPP. The PA allows all processors with an eligible Federal Processor Permit (FPP) or Federal Fisheries Permit (FFP) to process BSAI Pacific cod (subject to eligibility requirements under BSAI FMP Amendment 120 to limit catcher/processors acting as motherships (Element 5.1); limit the amount of trawl CV targeted BSAI Pacific cod that can be delivered to trawl C/Ps acting as a mothership (Element 5.2), and allocates harvest shares to eligible processors for use in a PCTC Program cooperative (Element 5.4). Under Element 5.4, the Council selected an allocation of 22.5 percent of total harvest QS to eligible processors based on their processing of qualifying deliveries (Options 5.4.5). The Council determined that processors that are no longer active (no longer hold an FPP) would not be issued QS. The processing history associated with these processors would be deducted from the total amount of eligible processing history.

The Council recommended PA includes Option 6.1 which would require cooperatives to reserve 12 percent of the BSAI A season trawl CV sector CQ as a set-aside for delivery to an AI shoreplant if the community of Adak or Atka file a notice of intent to process that year (Option 6.1). The set-aside would be in effect during the A and B seasons and any remaining portion of the AI CQ reserve would be reallocated to cooperatives in the same proportion as the initial allocation if the intent to process is withdrawn during the A or B seasons by the AI shoreplant(s). The PA requires an intercooperative agreement that describes how the set-aside will be administered by the cooperatives to ensure that

harvests from the Bering Sea (BS) and AI CQ reserve do not exceed the minimum set aside, how the cooperatives intend to harvest the set-aside, and how cooperatives would ensure that CVs less than 60 feet LOA assigned to an LLP license with a transferable AI trawl endorsement have the opportunity to harvest 10 percent of the AI set-aside for delivery to AI shoreplants. A cooperative intending to harvest any amount of the set-aside would be required to provide the cooperative's plan for coordinating harvest and delivery of the set-aside with an AI shoreplant in the annual cooperative application.

Element 7 defines the transferability provisions and notes that QS are attached to the LLP license and are non-severable from the LLP license. Transfer of an LLP license eligible for this program would result in the transfer of any program eligibility, QS associated with the LLP, and sideboard limitations (Element 7.1). Included as part of the PA is a suboption to authorized holders of eligible LLP licenses that would authorize BSAI non-exempt AFA CVs the ability to transfer QS between LLP licenses to accommodate private lease agreements during the qualifying period. The window for transferring QS is 90 days from the publishing of the Final Rule. The 5 percent ownership cap from Element 8.1 would apply. Transfers of QS outside the 90-day period due to an operation of law would also be permitted. As part of that element, the newly created processor permits under the PCTC Program may only be transferred to another processor and shoreside processor permits could only be transferred to another shoreside processor that holds an FPP. Quota shares assigned to these processor permits would be non-severable except in the case of a transfer to another eligible processor results in exceeding the use cap under Option 8.3. The portion of QS over the use cap could be severed from permit and transferred to another eligible processor permit.

Element 8 of the Council's PA defines ownership and use caps. The Council included ownership and use caps of 5 percent for harvester-issued (Element 8.1) QS and processor-issued QS of 20 percent (Element 8.3), vessel use cap of 5 percent (Element 8.2), and a company level processing cap of 20 percent (Element 8.4). The PA will provide a legacy provision (grandfather¹²) persons over the harvester-issued and processor-issued use caps, vessel use caps, and processing caps.

Element 9 addresses cooperative provisions. A cooperative shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of trawl CVs eligible to harvest a portion of that cooperative's CQ must be identified in the annual cooperative application (the Council did not selected Element 14 in its preferred alternative, so only trawl CVs are eligible to harvest a cooperative's CQ).

The Council included in the PA elements to address share duration (Element 10), monitoring (Element 11), reporting and program review (Element 12), and cost recovery (Element 13). These elements are unchanged or have relatively minor changes from the analysis presented in October 2020.

The following elements and options were adopted by the Council in October 2021 as the PA. The Council's PA is shown in **bold**. A copy of the clean PA is provided in Appendix 8.1.

Element 1. Cooperative Style System

Voluntary harvester cooperatives.

Holders of qualified trawl catcher vessel (CV) License Limitation Program (LLP) licenses under Element 2 must join a cooperative annually in association with an eligible licensed processor (Federal Fisheries Permit (FFP) or Federal Processing Permit (FPP)) to harvest their trawl CV Pacific cod cooperative quota (CQ). Harvesters may change cooperatives and cooperative associations may change annually without penalty.

¹² Legacy provision will be used in place of grandfather provision. They are interchangeable and mean the exact same thing.

No limitation on the number of LLP license holders or qualifying catch history (legal landings) needed to form a cooperative.

No limitation on the number of cooperatives that may form.

Inter-cooperative formation is allowed.

Option: A minimum of three LLP licenses are needed to form a cooperative.

Element 2: Initial Allocation to LLP Licenses

Catch history to determine initial quota share (QS) allocations under this management action will not be considered beyond December 31, 2019.

2.1. Eligibility – Any LLP license assigned to a vessel that made qualifying catch history (legal landings) of targeted trawl CV BSAI Pacific cod during the qualifying years (or an LLP license as of December 31, 2019, assigned to an American Fisheries Act (AFA) trawl CV that had BSAI Pacific cod catch in 1997)¹³ and any transferable Aleutian Islands (AI) endorsement is eligible to receive QS.

Option: Establish a minimum threshold percentage range of 0.25%-1% by LLP holder for eligibility to receive QS. Partial ownership of LLP licenses counts toward the minimum threshold using the individual and collective rule. Does not apply to those 8 LLP licenses with a transferable AI endorsement.

2.2. Harvester Allocations – Eligible LLP licenses must be assigned to a cooperative for the cooperative to receive annual Pacific cod CQ. The initial allocation of QS will be made to eligible LLP licenses or transferable AI endorsements, with each LLP license's or transferable AI endorsement's QS based on the Pacific cod qualifying catch history (legal landings) of targeted BSAI Pacific cod authorized by that LLP license or a transferable AI endorsement¹⁴ during the following qualifying years:

Option 2.2.1: 2014 - 2019

Option 2.2.2: 2009 – 2019

Option 2.2.3: 2004 –2019

Option 2.2.4: Allocations based on a blend of catch history and AFA sideboard history¹⁵

Suboptions to credit catch history/sideboard at:

Suboption 2.2.1: 50%/50%

Suboption 2.2.2: 80%/20%

Suboption 2.2.3: 20%/80%

Suboptions (applicable to Options 2.2.1 – 2.2.4):

Suboption 2.2.1. Drop 1 Year

Suboption 2.2.2. Drop 2 Years

2.3. For the initial allocation of QS, qualifying catch history is attached to the LLP license at the time of harvest. If multiple LLP licenses authorized catch by a vessel, in the absence of an

¹³The latter criteria (LLP assigned to an AFA trawl CV that had BSAI Pacific cod catch in 1997) is only applicable if one of the blend options is selected under Option 2.2.4.

¹⁴ **Landings of targeted AI Pacific cod in the parallel fishery prior to receiving a transferable AI endorsement (2004 through September 13, 2009) in addition to legal landings of targeted Pacific cod in the parallel and federal fishery after receiving a transferable AI endorsement would qualify under the Council's criteria for catch history.**

¹⁵ Using staff approach of blending 1997 sideboard history with qualifying year option catch history attached to the eligible LLP license at the time of implementation of the trawl CV LAPP.

agreement provided by the LLP license holder at the time of application, qualifying catch history will be:

Option 2.3.1: divided equally between those LLP licenses.

Option 2.3.2: assigned to an LLP license by the owner of the vessel that made the catch.

2.4. Annual CQ will be issued to each cooperative by NMFS based on the aggregate QS attached to LLP licenses that are assigned to the cooperative. NMFS will issue CQ by season and rely on the cooperatives to ensure the seasonal limits are not exceeded. Unused A season CQ may be rolled over to the B season. QS will not be designated for harvest in a management area (i.e., BS or AI) but may be harvested from either area.

2.5. Option to allocate A and B season BSAI trawl CV Pacific cod only:

A and B season trawl CV Pacific cod sector allocations (after deduction of the ICAs) will be allocated to cooperatives as CQ. Annual CQ attributable to each LLP license will be that LLP license's proportional share of the total QS.

The C season trawl CV Pacific cod allocation will remain 15 percent and remain a limited access trawl CV fishery and will be available to any trawl CV with an eligible groundfish LLP license with an applicable area endorsement. The C season limited access fishery will be managed as currently by NMFS, including management of incidental catches of Pacific cod in other directed fisheries. C season trawl CV sector apportionments (including A and B season ICAs and CQ remaining after June 10) that NMFS projects to go unused are subject to reallocation to other sectors under current reallocation rules.

2.6. All groundfish species not allocated to cooperatives will be managed by maximum retainable amounts (MRAs), as under current management.

2.7 The BSAI Pacific cod sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is removed for the A and B season upon implementation of this program. The BSAI Pacific cod sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is maintained for the C season upon implementation of this program.

The BSAI halibut PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 40 is removed upon implementation of this program.

The BSAI crab PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 41 is maintained upon implementation of this program.

Element 3. Prohibited Species Catch Limits

The annual crab and halibut PSC limits available to the BSAI trawl CV Pacific cod sector will be established through the annual specification process as follows:

Option 3.1: Crab PSC limits will be maintained at the BSAI trawl limited access sector level.

Option 3.2: Establish separate PSC limits for the BSAI trawl CV Pacific cod sector. Halibut PSC limit will be apportioned based on historical use (using qualifying years selected under Element 2) between the trawl CV sector and the AFA catcher processor (C/P) sector. Crab PSC limits will be apportioned based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector.

Option 3.3: Reduce PSC limit to BSAI trawl CV Pacific cod sector.

Suboption 3.3.1: Reduce halibut PSC limit by 10%; 25%; 35%.

Suboption 3.3.2: Reduce crab PSC limits by: 10%; 25%; 35%; 45%.

Red king crab Zone 1: (80% reduction from 2019 limit)
***C. opilio* Bycatch Limitation Zone: (69% reduction from 2019 limit)**
***C. bairdi* Zone 1 and Zone 2: (48% reduction from 2019 limit)**

Suboption 3.3.3: Phase in halibut PSC limit reduction over 3 years or 2 years¹⁶. One third or one half¹⁷ of the total halibut PSC limit reduction is implemented each year.

Option 3.4: If Element 2.5 is selected, establish separate C season halibut and crab PSC apportionments (5%-15%) before applying PSC limit reductions for the PCTC program.

Each cooperative will receive annual CQ of Pacific cod and apportionments of PSC limits based on members' qualifying catch histories (and processing histories, if applicable) to be harvested in accordance with the harvest cooperative agreement. The sector's PSC limits will be apportioned to cooperatives in proportion to its initial Pacific cod CQ apportionment and will be monitored at the cooperative level, resulting in a prohibition on directed fishing for Pacific cod (halibut PSC limit) or a prohibition on directed fishing for Pacific cod in a specified area (crab PSC limits) by that cooperative if the cooperative PSC limit apportionment is reached. PSC limits are transferable between cooperatives based on the same rules established for Pacific cod CQ.

Element 4: Gulf of Alaska (GOA) Sideboards

Option 4.1: All GOA non-exempt AFA CVs and AFA LLP licenses will be sideboarded (in aggregate for all GOA groundfish fishing activity) and for halibut PSC (on the annual amount of the total trawl halibut PSC limit), except for vessels when participating in the Central GOA Rockfish Program, based on their GOA catch history during the BSAI Pacific cod qualifying period.

Prohibit directed fishing in regulations for the GOA non-exempt AFA CVs and LLPs for Southeast Outside pollock, Western shallow-water flatfish, and both Central and Eastern deep-water flatfish, and Eastern Pacific Ocean perch.

Option 4.2: AFA GOA-exempt and non-AFA CVs assigned to LLP licenses and CVs assigned to under 60' LLP licenses with AI transferable endorsements that receive annual BSAI Pacific cod CQ will not be permitted to lease their BSAI Pacific cod CQ as a condition of benefiting from a GOA sideboard exemption. If the vessel assigned to the qualified GOA exempt LLP license does not fish the GOA during the calendar year, except for the Central GOA Rockfish Program, the BSAI Pacific cod CQ generated by the LLP license can be leased that calendar year.

Cooperatives will be required to monitor GOA AFA exempt and non-AFA vessels and vessels assigned to under 60' LLP licenses with AI transferrable endorsements to ensure they do not lease their BSAI Pacific cod CQ and implement a penalty structure for violations. Cooperatives will be required to report leasing activities and penalties issued in the BSAI Pacific cod cooperative annual report.

Suboption 4.2.1: AFA GOA-exempt, ~~and~~ non-AFA CVs, and CVs assigned to under 60' LLP licenses with AI transferable endorsements with LLP licenses of less than 200 mt, 300 mt¹⁸, 400 mt, or 600 mt of average annual qualifying BSAI Pacific cod history may lease their BSAI Pacific cod CQ and benefit from the GOA sideboard exemption.

Element 5: Processor and Community Provisions

¹⁶ Council added 2 years as its preferred alternative. The addition of 2 years is within the scope of the analysis.

¹⁷ Council added one half as its preferred alternative. The addition of one half is within the scope of the analysis.

¹⁸ The Council added 300 mt as its preferred alternative. The addition of 300 mt is within the scope of the analysis.

5.1. No closed class of processors; all processors with an eligible FPP or FPP are eligible to process BSAI Pacific cod CQ under this program (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships).

5.2. Limit (sideboard) on directed BSAI Pacific cod CQ that can be delivered by trawl CVs to eligible C/Ps acting as motherships. The sideboard would be based on BSAI Pacific cod processing history by eligible C/Ps during qualifying years under Element 2. **The sideboard will be assigned to the LLP license authorizing the C/P to act as a mothership in the BSAI Pacific cod fishery.**

Option 5.2.1: Each eligible C/P acting as a mothership may process up to the higher of 1) 125% of the eligible C/P's processing history (percentage based on qualifying years selected in Element 2.2 no drop year); or 2) the history (percentage based on qualifying years selected under Element 2.2) from LLP licenses that are owned (in excess of 75%) directly or indirectly by the owner of a C/P LLP eligible for the offshore sector of the target non-CDQ BSAI Pacific cod trawl CV fishery (as of December 31, 2019), not to exceed 125% of the eligible C/P's processing history (percentage based on qualifying years selected in Element 2.2 no drop year).

Option 5.2.2: Each eligible C/P acting as a mothership may process up to the eligible C/P's processing history (percentage based on qualifying years selected in Element 2.2).

5.3. Limit number of trawl CVs in the directed BSAI Pacific cod fishery that can deliver to eligible C/Ps acting as motherships. Trawl CVs can qualify for the offshore sector in one of two ways:

An LLP license that is owned (in excess of 75%) directly or indirectly by the owner of a C/P LLP eligible for the offshore sector of the target non-CDQ BSAI Pacific cod fishery (as of December 31, 2019)

An LLP license in which a) 90% or b) 75% or more of the quota arising from the history of the LLP license qualifying for the non-CDQ BSAI trawl CV Pacific cod fishery was delivered offshore during the qualifying years selected in Element 2.2.

Only initial quota arising from the history of an LLP license qualifying for the offshore sector will be permitted to be delivered offshore. Only vessels that are assigned LLP licenses that qualify for the offshore sector will be permitted to make offshore deliveries. Vessels using LLP licenses that are permitted to deliver offshore may also deliver any or all of the quota derived from the LLP license to shorebased or floating processors.

5.4. Allocation of QS to processors (this option is only applicable to Bering Sea processors and eligible C/Ps if AI provisions are selected under element 6):

Onshore and offshore processors with an eligible FPP or FPP (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships) that have history of processing in the federal BSAI Pacific cod trawl CV fishery will be eligible to receive a percentage of total QS based on each onshore processor's and offshore processor's processing history. To be used, the processor's CQ would be transferred to the CV cooperative.

If a processor holding QS does not associate with a cooperative, that processor's CQ will be divided among cooperatives in the same proportion as the processor's CQ assigned to individual cooperatives by the associated processor that year relative to total processor derived CQ that was issued that year.

If a processor associated with more than one cooperative during a year, the CQ derived from their processor permit would be divided between the cooperatives in the same proportion as the CQ derived from LLP licenses.

Option: A cooperative cannot assign a greater proportion of the CQ resulting from processor held QS to an LLP license owned by that processor for harvest by a vessel owned by that processor than the LLP license would have brought into the cooperative absent any processor held QS. The cooperative will monitor this provision and include reporting on harvest of CQ resulting from processor held QS in the BSAI Pacific cod cooperative annual report.

Percent of QS to be allocated to eligible processors:

Option 5.4.1: 5%

Option 5.4.2: 10%

Option 5.4.3: 15%

Option 5.4.4: 20%

Option 5.4.5: 22.5%¹⁹

Option 5.4.6: 25%

Option 5.4.7: 30%

Processing history years (including any drop year option selected in element 2.2) to receive QS are the same as harvester years in Element 2.

Processors that are no longer active (no longer hold an FPP) would not be issued QS. The processing history associated with those processors would be deducted from the total amount of eligible processing history during the qualifying years when calculating the distribution of QS to processors.

Element 6: Aleutian Islands Processor Provisions

Options 6.1 and 6.2 are mutually exclusive.

Under this element:

An AI shoreplant is defined consistent with vacated Amendment 113 regulations.

An AI shoreplant operating under the provisions of this element is exempt from the processing facility use cap in element 8.4.

All cooperatives will be required to establish an intercooperative agreement that describes how either the set-aside provision in option 6.1 or the annual AI community shoreplant QS in option 6.2 will be administered by the cooperatives to ensure that harvests in the Bering Sea do not exceed the minimum set aside or shoreplant allocation amounts. This intercooperative agreement must establish how the cooperatives intend to harvest the set-aside or shoreplant QS in years when it applies. This intercooperative agreement must be provided as part of the annual cooperative application and is required before NMFS can issue CQ. A cooperative intending to harvest any amount of the set-aside must provide the cooperative's plan for coordinating harvest and delivery of the set-aside with an AI shoreplant in the cooperative application.

Option 6.1: In any year when the community of Adak and/or Atka files a notice of intent to process, require the cooperative(s) to reserve a set-aside for delivery to an AI shoreplant. The amount of the set-aside (AI CQ reserve) will be 10, 12%²⁰, to 25% of the BSAI CV trawl directed A season CQ and is in effect during the A and B season. Any remaining portion of the AI CQ reserve will be reallocated to cooperatives in the same proportion as the initial CQ if Adak and/or Atka withdraws its intent to operate notice during the A or B season.

The intercooperative agreement must establish how cooperatives would ensure that CVs < 60 feet LOA assigned to an LLP license with a transferable AI trawl endorsement have the

¹⁹ Council added 22.5% as its preferred alternative. The addition of 22.5% is within the scope of the analysis.

²⁰ Council added 12% as its preferred alternative. The addition of 12% is within the scope of the analysis.

opportunity to harvest a percentage of the AI CQ reserve for delivery to an AI shoreplant.
Option 1: 50%, option 2: 25%, or **option 3: 10% of the AI CQ reserve.**

NMFS will establish a separate AI Incidental Catch Allowance (ICA) and AI Directed Fishing Allowance (DFA) to support the AI CQ reserve.

When the AI CQ reserve is set equal to the AI DFA, directed fishing for Pacific cod in the AI may only be conducted by PCTC Program vessels that deliver their catch of AI Pacific cod to AI shoreplants for processing.

When the AI DFA is greater than the AI CQ reserve amount, the difference between the AI DFA and the AI CQ reserve will be available for directed fishing by all non-CDQ fishery sectors with sufficient A-season allocations and may be processed by any eligible processor.

Option 6.2: In any year when the community of Adak and/or Atka files a notice of intent to process, annual QS shall be issued to the plant operator designated in that notice of intent. In the event one community issues a notice (option 1: 5.5%, option 2: 10%) of the total BSAI trawl CV Pacific cod CQ (prior to QS based on harvesting or processing histories) shall be issued to the plant. In the event both communities issue a notice, the CQ shall be divided equally between two plants. Adak or Atka may withdraw its intent to operate notice during the season if necessary. In that case, the unharvested portion of the CQ will be reissued to the other AI shoreplant if it is operating.

Suboption 6.2.1: If no AI shoreplants are operating, the amount of annual CQ equivalent to unharvested portion will be reissued to cooperatives (holders of LLP licenses with BS and/or AI harvest history in proportion to their initial CQ).

Annual AI community shoreplant allocations shall be transferable to any cooperative(s) (and between cooperatives) for harvest by member vessels that are assigned an AI trawl CV LLP license eligible under this program. CQ shall be harvestable exclusively in the AI and landed in the AI management region.

Suboption 6.2.2: If the community of Adak and/or Atka files a notice of intent to process, annual CQ should be issued to an entity representing the community designated in the notice of intent.

Suboption 6.2.3: AI trawl CVs less than 60' assigned to an LLP license with a transferable AI endorsement will be eligible under the program to be assigned to a cooperative annually in association with the Adak and/or Atka plant regardless of whether they otherwise qualify for the program. Option 1: 50%, option 2: 25%, or option 3: 10% of the annual AI community shoreplant allocation must be harvested by these vessels.

Element 7. Transferability

7.1. Initially issued QS are attached to trawl CV LLP licenses and are non-severable from the LLP licenses. Transfer of an LLP license eligible for this program results in the transfer of any program eligibility and QS associated with the LLP license.

Suboption 7.1.1: For the LLP licenses associated with the non-exempt AFA vessels, within ninety (90) days of initial issuance of QS, the owners of the LLP licenses that are associated with AFA non-exempt CVs that had engaged in fish transfer agreements during the qualifying periods and whose QS allocation at initial issuance does not exceed the ownership cap in element 8.1 may transfer the QS between other LLP licenses associated with AFA non-exempt vessels subject to the ownership cap in element 8.1. After these transfers are approved by NMFS, the BSAI Pacific cod QS will no longer be severable from the LLP license to which it was reassigned unless modification is supported by an operation of law.

7.2. QS based on processing history are issued as separate permits, and the permit is only transferable to another processor. Permits issued to shoreside processors can only be transferred to

other shoreside processors that hold an FPP. The QS is non-severable from the permit except in the case that transfer of the permit to another eligible processor would result in exceeding the use cap under Option 8.3. In that case, the portion of the QS over the cap is allowed to be severed from the permit and transferred to another eligible processor permit or shoreside processor that holds an FPP.

7.3. Annual Pacific cod CQ and PSC limits (whether derived from harvesting or processing histories) are transferable between cooperatives.

7.4. Post-delivery transfers of CQ are permitted but must be completed by December 31 or August 1²¹.

Element 8: Ownership and Use Caps

8.1. Harvester-issued QS. Processor-issued QS does not count toward this use cap. No person may hold or use more than option: 5%- 10% of the Pacific cod QS issued:

Option 8.1.1: using the individual and collective rule or

Option 8.1.2: using 10% ownership threshold or management and control for assigning QS to a holder's/entity's cap.

Suboption 8.1: Persons over the cap at the time of QS issuance are grandfathered.

8.2. No vessel may harvest more than option: 3%; 4%; 5% of the annual Pacific cod CQ issued in the fishery.

Option 8.2.1: Vessels over the cap at the time of QS issuance are grandfathered. The grandfather provision is applied to the vessel designated on an LLP license that yields more than 5% of the annual Pacific cod CQ at the time of initial allocation. This grandfather provision is not transferrable if the LLP license is transferred to a new owner.

8.3. Processor-issued QS²²: No person may hold or use more than option: 15% - 20% of the Pacific cod QS:

Option 8.3.1: using the individual and collective rule or

Option 8.3.2: using 10% ownership threshold or management and control for assigning QS to a holder's/entity's cap.

Suboption 8.3: Persons over the cap at the time of QS issuance are grandfathered.

8.4. No company may process more than 20%-30% of the Pacific cod CQ.

Option 8.4.1: using the individual and collective rule

Option 8.4.2: Company over the cap at the time of QS issuance are grandfathered.

Element 9. Cooperative Provisions

Annual cooperative applications must be filed on or before November 1 of the preceding year.

Cooperatives shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of CVs (both trawl and pot gear vessels

²¹ The Council added August 1 as its preferred alternative to align with the Council's preferred alternative to allocate only A and B season BSAI trawl CV Pacific cod (Element 2.5).

²²This cap refers to any QS initially issued to processors on a processor permit under Element 5.3.

if Element 14 is selected) eligible to harvest a portion of that cooperative's CQ must be identified in the annual cooperative application.

Cooperatives are intended only to conduct and coordinate harvest activities of members and are not Fishermen's Collective Marketing Act (FCMA) cooperatives.

Membership agreements will specify that processor affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws.

Element 10. Share duration

All QS and allowances under this program are revocable privileges that 1) may be revoked, limited or modified at any time; 2) shall not confer any right of compensation to the holder, if they are revoked limited, or modified, and; 3) shall not create or be construed to create any right, title or interest in or to any fish before the fish is harvested by the holder.

The duration of all QS and associated PSC apportionments is 10 years. These permits will be renewed before their expiration, unless revoked, limited, or modified.

Element 11. Monitoring

All vessels harvesting CQ will be in 100% observer coverage category. This element is not intended to modify the observer coverage exception provided for CVs delivering unsorted codends to a mothership or the current at-sea observer data transmission requirements for non-AFA trawl CVs for the first 3 years after implementation. Monitoring and enforcement provisions will be implemented to track quota, harvest, PSC, and use caps. Shoreside processors will be required to operate under a NMFS-approved Catch Monitoring and Control Plan. The Council authorizes NMFS to report weekly vessel-level PSC information as authorized under Magnuson-Stevens Act (MSA) Sec 402(b)(2)(A).

Element 12. Reporting and Program Review

Each cooperative shall annually produce a report for the Council describing its membership, cooperative management, and performance in the preceding year including use of CQ derived from processor issued QS and harvest and delivery of the AI CQ reserve, if applicable.

Per the MSA, a formal detailed review of the program shall be undertaken 5 years after implementation, with additional reviews, at a minimum, each seven years thereafter.

Element 13. Cost recovery

A fee, not to exceed 3% of the ex-vessel value, will be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.

Element 14. Gear Conversion

Pacific cod CQ associated with trawl CV LLP licenses may be fished annually by a CV using pot gear. A pot endorsement is not required, but the LLP license used by a CV must have the appropriate area endorsement. Harvest would be deducted from the annual trawl CQ account to which the LLP license is assigned and will not affect sector allocations. CQ harvested by a pot CV is not permanently designated as pot CV CQ. If Option 2.5 is selected, gear conversion only applies to the A and B seasons based on the start and end dates for the trawl fishery. Pot CVs harvesting CQ would be subject to 100% coverage and

PSC use would be deducted from the PSC limit allocated to the cooperative. NMFS will develop monitoring and enforcement provisions necessary to track quota, harvest, PSC, and use caps.

Given the myriad ways to combine the many elements and options in the proposed action to form an alternative, two alternatives (2a and 2b) were developed early in the process for purposes of analysis. These alternatives are supplemented with a Council developed PA selected during its October 2021 meeting. The combination of these action alternatives in addition to Alternative 1 represent a reasonable suite of alternatives to assess the impacts of the PA. Table 2-1 provides a summary of the current alternatives including the Council's PA. Each of the action alternatives in the analysis address the problem statement by providing an allocation of BSAI Pacific cod to the trawl CV sector and allow for the sector to form cooperatives, which are expected to facilitate a more reasonable paced fishery that would lengthen the seasons, resulting in an increased ability to maximize the value of the fishery and reduced the impacts of a compressed fishery on all fishery participants. The action alternatives would also likely encourage fishing practices to minimize bycatch and improve the sustained viability of the fishery.

Table 2-1 Comparison of action alternatives

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Cooperative Style (Element 1)	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with a licensed processor. Inter-cooperative formation is allowed.	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with a licensed processor. Inter-cooperative formation is allowed. Option: A minimum of three LLP licenses are needed to form a cooperative	Voluntary cooperative with no minimum number of LLP license holders or eligible catch history in association with licensed processor. Inter-cooperative formation is allowed. Option: A minimum of three LLP licenses are needed to form a cooperative.
Allocation to LLP Licenses (Element 2)	Element 2.1 - No minimum threshold percentage for eligibility to receive harvest shares. Element 2.2 - Harvest allocation would be based on targeted BSAI Pacific cod catch history during 2014-2019 no dropped years (Option 2.2.1). Harvest allocation would be for the A and B seasons only (Element 2.5) with C season remaining as a limited access fishery. Option 2.2.4 – For AFA non-exempt BSAI Pacific cod sideboarded vessels, allocations are based on a 50/50 (Suboption 2.2.1) blend of 2014-2019 no dropped qualifying years and 1997 BSAI Pacific cod sideboard history. Option 2.3.2 – When multiple licenses authorized catch by one vessel qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch.	Element 2.1 Option - Establish a minimum threshold percentage of 1% by LLP license holder for eligibility to receive harvest shares. Does not apply to the 8 LLP licenses with a transferable AI endorsement. Element 2.2 - BSAI Pacific cod harvest allocation would be based on targeted BSAI Pacific cod catch history during 2004-2019 drop 2 years (Option 2.2.3). Harvest allocation would be for A, B, and C seasons. Option 2.3.1 When multiple licenses authorized catch by one vessel qualifying catch history would be divided equally between those licenses.	Element 2.1 - No minimum threshold percentage for eligibility to receive harvest shares. Element 2.2 - Harvest allocation would be based on targeted BSAI Pacific cod catch history during 2009-2019 with one drop year (Option 2.2.2). Harvest allocation would be for the A and B seasons only (Element 2.5) with C season remaining as a limited access fishery. Option 2.3.2 – When multiple licenses authorized catch by one vessel qualifying catch history would be assigned to an LLP license by the owner of the vessel that made the catch.

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Prohibited Species Catch Limits (Element 3)	<p>Option 3.2 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2014-2019 qualifying years. Establish trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV and the AFA C/P sectors.</p> <p>Option 3.3 - Reduce halibut and crab PSC apportionment to BSAI trawl CV Pacific cod sector by 35% (Suboptions 3.3.1 & 3.3.2).</p> <p>Option 3.4 – Establish a separate C season halibut and crab PSC apportionment at 15% before applying PSC limit reduction.</p> <p>Halibut and crab PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>	<p>Option 3.1 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2004-2019 qualifying years. Crab PSC will be maintained at the BSAI TLAS level.</p> <p>Option 3.2 - Reduce halibut PSC apportionment to BSAI trawl CV cod sector by 10% (Suboption 3.3.1).</p> <p>Halibut PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>	<p>Option 3.2 - Establish trawl CV cod halibut PSC apportionment based on historical use of halibut by the trawl CV sector and AFA C/P sector using the 2009-2019 qualifying years. Establish separate trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV (90.6%) and the AFA C/P sectors (9.4%).</p> <p>Option 3.2 - Reduce halibut PSC apportionment to BSAI trawl CV Pacific cod sector by 25% (Suboption 3.3.1) and crab PSC apportionment by 35% (Suboption 3.3.2). Halibut PSC limit reduction will be phased in over 2 years (Suboption 3.3.3).</p> <p>Option 3.4 – Establish a separate C season halibut and crab PSC apportionment at 5% before applying PSC limit reduction.</p> <p>Halibut and crab PSC will be apportioned to cooperatives based on members' Pacific cod qualifying catch history.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Gulf of Alaska Sideboards (Element 4)	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new GOA groundfish sideboard limits based on 2014-2019 GOA aggregate retained catch divided by TAC. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels and non-AFA vessels are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs with LLP licenses initially assigned less than 200 mt of average annual qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new groundfish GOA sideboard limits based on 2004-2019 GOA aggregate retained catch divided by TAC. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels and non-AFA vessels are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs with LLP licenses initially assigned less than 600 mt of qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>	<p>Option 4.1 – All GOA non-exempt AFA CVs would be restricted by new GOA groundfish and halibut PSC sideboard limits based on 2009-2019 GOA aggregate retained catch divided by TAC. Halibut PSC limits will be managed at an annual level. CGOA rockfish Program fishing activity was not included in sideboard calculations.</p> <p>Option 4.2 - AFA GOA exempt vessels, non-AFA vessels, and CVs assigned to under 60' LLP licenses with AI transferable endorsements are restricted from leasing their BSAI cod QS to be exempt from any GOA sideboard limits implemented under this program. If the vessel assigned a GOA exempt LLP license does not fish in the GOA during the calendar year, except for CGOA Rockfish Program, the BSAI CQ generated by the LLP license can be leased that calendar year.</p> <p>Suboption 4.2.1 – AFA GOA exempt and non-AFA CVs LLP licenses and CVs assigned to under 60' LLP licenses with AI transferable endorsements initially assigned less than 300 mt of average annual qualifying BSAI cod history may lease their BSAI cod history and continue to be exempt from GOA sideboards.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Processor and Community Provisions (Element 5)	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.2 - Limit BSAI Pacific cod processing for eligible C/Ps acting as a MS. Only C/Ps that are eligible may process BSAI Pacific cod as a MS that is harvested from the directed BSAI Pacific cod trawl CV fishery. Eligible trawl C/Ps processing limit when acting as a MS for BSAI Pacific cod is based on processing history under Element 2. Processor limits are established for each company.</p> <p>Element 5.4 - Allocate processors 30% of the harvest shares based on their processing history under Element 2. All processors with processing history under Element 2 will qualify. The processor allocation of BSAI Pacific cod harvest shares will be assigned to a newly created processor permit that is transferable.</p> <p>No restrictions on use of processor issued harvest shares by processor owned/controlled CVs.</p>	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.3 – Only CVs that are 75% owned by a C/P eligible for the offshore sector as of 12/31/2019 may delivery any or all of the CQ derived from the LLP assigned to the vessel to an eligible C/P acting as a MS. Council will develop qualification criteria for CVs that may deliver offshore if they are not 75% owned by a C/P eligible to act as a MS in the directed BSAI trawl CV sector.</p> <p>Element 5.4 - No initial allocation of harvest shares to processors.</p>	<p>Element 5.1 – No closed class of processors (C/Ps acting as motherships would be subject to eligibility requirements under BSAI FMP Amendment 120).</p> <p>Element 5.2 – Limit BSAI Pacific cod processing for eligible C/Ps acting as a MS to process up to 125% of the eligible C/P’s qualifying processing history.</p> <p>Element 5.4 - Allocate processors 22.5% of the harvest shares based on their processing history under Element 2. All processors with processing history under Element 2 will qualify except processors that are no longer active. The processor allocation of BSAI Pacific cod harvest shares will be assigned to a newly created processor permit that is transferable.</p> <p>A cooperative cannot assign a greater proportion of the harvest shares allocated to a processor to an LLP license owned by that processor than the LLP license would have brought into the cooperative absent any processor held shares.</p>
AI Processor Provisions (Element 6)	<p>Option 6.1 - 25% set-aside of BSAI A season harvest amount assigned to PCTC cooperatives that must be harvested from the AI and delivered to an AI shoreplant during the A season. Amount is reduced by any allocation they receive under Element 5.</p>	<p>Option 6.2 - Allocate 10% of the BSAI trawl CV sector allocation to an entity representing the AI community any year at least one community files an intent to process. Allocations are equally divided between qualified entities and are not transferable. A minimum of 25% of the AI shoreplant allocation will be set aside and may only be harvested by trawl CVs less than 60’ LOA with a valid LLP license assigned a transferable AI endorsement (Suboption 6.2.3).</p>	<p>Option 6.1 - 12% set-aside of BSAI A season harvest amount assigned to PCTC cooperatives that must be harvested from the AI and delivered to an AI shoreplant during the A and B seasons. Amount is reduced by any allocation the active processor(s) receive under Element 5.</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Transferability (Element 7)	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Option 7.2 - Allocations based on processing history would be issued as separate permit. Allocations to processors may only be sold to another processor and the attached QS are only severable from the processor permit if the buyer of the permit would be over the ownership cap after purchasing the permit and all of the QS.</p> <p>Annual cooperative allocations (CQ) of Pacific cod, halibut, and crab PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers would be permitted through the end of the B season.</p>	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Annual allocations (CQ) of Pacific cod and halibut PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers of CQ are permitted, but must be completed by December 31 (i.e., prior to annual CQ expiring).</p>	<p>Option 7.1 - Catch history would be attached to the LLP license and would be non-severable. QS is transferable with the LLP license.</p> <p>Suboption 7.1.1 – For the LLP licenses associated with the non-exempt AFA CVs, within 90 days of initial issuance of harvest quota shares (except for those transfers supported by an operation of law), the owners of the LLP licenses that are associated with AFA non-exempt CVs that had engaged in fish transfers agreements during the qualifying years may transfer the quota shares between other LLP licenses associated with AFA non-exempt vessels.</p> <p>Option 7.2 - Allocations based on processing history would be issued as separate permit. Allocations to processors may only be sold to another processor and the attached QS are only severable from the processor permit if the buyer of the permit would be over the ownership cap after purchasing the permit and all of the QS.</p> <p>Annual cooperative allocations (CQ) of Pacific cod, halibut, and crab PSC are transferable within and between cooperatives.</p> <p>Post-delivery transfers of CQ are permitted, but must be completed by August 1 (i.e., prior to annual CQ expiring).</p>

	Alternative 2a	Alternative 2b	Alternative 3 (Preferred Alternative)
Ownership and Use Caps (Element 8)	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 7% of QS/CQ issued with grandfather provision set equal to initial allocation.</p> <p>Element 8.2 - Vessel use caps are 3% of CQ with a grandfather provision that is transferable if vessel is replaced.</p> <p>Element 8.3 - Processor issued cooperative shares have an ownership and use cap at the entity level of 20% with a grandfather provision equal to initial allocation. The cap will be calculated using the 10% ownership threshold rule.</p> <p>Element 8.4 - No processing facility may process more than 25% of the CQ allocated, with a grandfather provision</p>	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 10% of QS/CQ issued with grandfather provision set equal to initial allocation</p> <p>Element 8.2 - Vessel use caps are 5% of CQ and the grandfather provision is not transferable if vessel is replaced.</p> <p>Element 8.3 – Processors are not issued cooperative shares but have a use cap at the entity level of 10% with a grandfather provision equal to initial allocation. The cap will be calculated using the individual and collective rule.</p> <p>Element 8.4 - No processing facility may process more than 30% of the CQ allocated, with a grandfather provision.</p>	<p>Element 8.1 - Harvester issued QS/CQ ownership and use caps will be based on the individual and collective rule and set at 5% of QS/CQ issued with grandfather provision set equal to initial allocation.</p> <p>Element 8.2 - Vessel use caps are 5% of CQ with a grandfather provision that is transferable if vessel is replaced.</p> <p>Element 8.3 - Processor issued cooperative shares have an ownership and use cap at the entity level of 20% with a grandfather provision. Cap will be calculated using the individual and collective rule.</p> <p>Element 8.4 - No company may process more than 20% of the CQ allocated, with a grandfather provision.</p>
Cooperative Provisions (Element 9)	<p>Annual cooperative application must be filed on or before November 1 of the year prior. Cooperatives shall be formed by holders of qualified LLP license with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of trawl CVs eligible to harvest a portion of that cooperatives CQ must be identified in the annual cooperative application.</p> <p>Cooperatives are intended to conduct and coordinate harvest activities and are not FCMA cooperatives.</p> <p>Membership agreements will specify that processors affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws.</p>		
Share Duration (Element 10)	<p>All allocations and allowances under this program are revocable privileges that 1) may be revoked, limited, or modified any time, 2) shall not confer any right of compensation to the holder, if they are revoked, limited, or modified, and 3) shall not create or be construed to create any right, title, or interest in or to any fish before the fish is harvested by the holder.</p> <p>The duration of harvest shares and associated PSC is 10 years. Permits will be renewed before their expiration, unless revoked, limited, or modified.</p>		
Monitoring (Element 11)	<p>All vessels harvesting CQ will be in 100% observer coverage category except CVs delivering to a MS or the current at-sea observer data transmission requirements for non-AFA trawl CVs for the first 3 years after implementation. NMFS will develop monitoring and enforcement provisions necessary to track quota, harvest, and use caps.</p>		
Reporting and Program Review (Element 12)	<p>Cooperatives will annually produce a report to the Council describing its membership, cooperative management, and performance in the preceding year including use of processor issued harvest shares, if applicable.</p> <p>As per MSA, a formal detailed program shall be undertaken 5-years after implementation, with subsequent reviews each 7-years after.</p>		
Cost Recovery (Element 13)	<p>A fee, not to exceed 3% of the ex-vessel value, will be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.</p>		

2.5. Rationale for Council's Preferred Alternative

Element 1- Cooperative Style System

The Council has many years of experience with cooperative style management. These programs have demonstrated success with respect to improved management of a fishery, increased efficiency and value, reduced bycatch, and provided timelier, finer-scale monitoring and oversight than the Council and NMFS can provide.

The cooperative management proposed would provide flexibility for cooperatives to form and operate through inter-cooperative agreements. Experience with the BS pollock fishery under the AFA and other similar programs indicates that the structure proposed would be efficient and effective by placing a portion of administrative and monitoring obligations on the cooperatives with NMFS oversight. Generally, the proposed management approach would provide a good balance of minimizing management costs by NMFS while maintaining appropriate monitoring and enforcement for the program.

Section 2.8.1.1 of the analysis indicates that no minimum number of LLP licenses to form a cooperative could result in just one LLP license holder with one eligible LLP license in association with a licensed processor forming a cooperative. While this may be unlikely in practice, the Council's experience with cooperative management programs indicate that multiple parties need to be in a cooperative to achieve the benefits of cooperative fishing, and therefore the Council recommends a minimum number of LLP licenses to balance the Council's objective to achieve the benefits from cooperative fishing with providing a relatively low cooperative formation threshold, which would increase the opportunity for trawl CV LLP license holders, particularly those with less commonly held views of fishery operations, to join a cooperative and benefit from the program. The Council noted the analysis indicates that even with the three LLP license minimum threshold, it is likely there would be fewer cooperatives than the maximum number possible given the potential ease of intra-cooperative transfers among members of the cooperative.

Element 2 – Initial Allocation of LLP Licenses

In its PA, the Council recommended that catch history after December 31, 2019, not be considered for purposes of the program, consistent with its previous PPA. Also consistent with the PPA, the Council recommends establishing eligibility for the program using LLP licenses that were assigned to a vessel, or a transferable AI endorsement, that made legal landings of targeted trawl CV BSAI Pacific cod during the qualifying years 2009-2019 (Option 2.2.2) in its PA. These qualifying years would establish catch history for purposes of initially allocating harvest QS to eligible LLP licenses or transferable AI endorsements. The harvest shares would be allocated to eligible LLP licenses or transferable AI endorsements based on legal landings of BSAI Pacific cod from 2009 through 2019. Eligible LLP licenses would have to be assigned to a cooperative to receive annual Pacific cod quota. These qualifying years represent what the Council considers an appropriate balance for considering current and historical participation for purposes of a rationalization program and is consistent with the Council's approach to awarding catch history in other rationalization fishery programs. Option 2.2.1 (2014-2019) would consider the most recent five years of history in the BSAI trawl CV Pacific cod fishery but not long-term participation, which the Council felt is an important consideration for this program. Option 2.2.3 (2004-2019) was determined by the Council as not an appropriate range of years since it includes several years of catch history before implementation of the current sector allocations established by Amendment 85 and the BS and AI Pacific cod TAC split that together, along with a decline in the BSAI Pacific cod stock in recent years, have substantially changed fishery management and operations.

The Council did not recommend allocations based on a blend of catch history and AFA sideboard history (Option 2.2.4). This approach would have awarded catch history in the program to LLP licenses assigned

to vessels that did not make legal landings of BSAI Pacific cod during the qualifying years. The approach would have awarded catch history based on BSAI Pacific cod from 1997 that contributed to a sideboard limit for all AFA Pacific cod sideboarded vessels. The Council felt it was important to maintain their long-standing policy that sideboard limits are not allocations. Instead, the PA would maintain the Council's past practice of awarding catch history to LLP licenses based on legal landings that were reported by the vessel assigned to the LLP license.

The Council recommended a change from the PPA to include Suboption 2.2.1, drop one year, in its PA. The Council received written comment and testimony at the October 2021 meeting that favored including the drop one year option in its PA. The comments in support of this option noted that the catch history eligibility period is 11 years and unforeseen events have occurred for many trawl CV Pacific cod fishery participants over that period that would reduce the amount of catch history awarded to their LLP license. Including a one year drop provision would allow all participants to benefit from removing a non-representative participation year from the catch history used to issue their quota share. The Council considered this a reasonable approach and one that is consistent with Council's practice in previous rationalization programs because it recognized contingencies in fishing behavior over the qualifying years.

The Council recommended that if LLP licenses owned by different entities were assigned to a vessel that made targeted Pacific cod landings during the qualifying years, absent an agreement provided by the license holder at the time of application, then the owner of the vessel that made the catch would determine how the qualifying catch history would be divided (Option 2.3.2). This approach was considered appropriate since it is consistent with NMFS' approach for assigning legal landings in all previous North Pacific Council rationalization programs. In addition, the Council received public comment in support of this approach.

The Council recommended incorporating NMFS' recommendation to issue CQ by season in its PA (Element 2.4). As described in the analysis and discussed during the staff presentation and testimony, under this approach, NMFS would issue CQ by season as a tool to monitor compliance with the seasonal limits that are in place to provide protections to Steller sea lions as thoroughly described in the analysis. The Council noted that while originally there was some concern expressed by industry about this approach, the Council believes those concerns have been addressed by NMFS and the Council's recommended PA. The PA also specifies that unused A season CQ may be rolled over to the B season, which is consistent with current management practices as described in the analysis.

The Council's PA is consistent with the PPA in only allocating A and B season BSAI trawl CV Pacific cod (Element 2.5). The C season would remain a limited access fishery and maintain current NMFS management. The Council recognized that participants in the trawl CV BSAI Pacific cod fishery supported full rationalization for all seasons, but the Council believed it is important to 1) recognize that the trawl CV sector has historically harvested only a limited amount of the C season allocation, and 2) mitigate potential temporal expansion of the trawl CV fishery that would negatively impact other sectors by reducing the potential for historically common rollovers. The Council has considerable experience with the ability of rationalized fishery participants to leverage the advantages of increased efficiencies from cooperative management. While rationalizing the C season would provide additional benefits to the trawl CV fishery participants, the analysis is clear that harvesting a larger proportion of the trawl CV allocation (in A and B season) relative to recent years would negatively impact other sectors that have received rollovers from the unharvested trawl CV allocation. Leaving the C season unrationalized in this program and maintaining the current management and rollover structure would provide what the Council considers an appropriate balance for providing benefits to the trawl CV fleet within the seasonal footprint of the current fishery and minimizing negative impacts to other sectors.

Element 2.6 specifies that all groundfish species not allocated to cooperatives would be managed by maximum retainable amounts as under current management. This approach would provide NMFS with

flexibility to manage bycatch in the Pacific cod fishery as well as Pacific cod harvested in other groundfish fisheries using ICAs and MRAs as under the status quo. This flexibility is important for providing inseason management the ability to annually adjust the ICA based on changes in BSAI groundfish TACs and expected incidental catch rates in trawl CV fisheries.

At its October 2021 meeting, for its PA the Council revised Element 2.7 of the PPA by adding intent relative to sideboard regulations. The PA clarifies that if the Council adopts Element 2.5 and only the A and B seasons are rationalized in this program, the BSAI Pacific cod sideboard limit for AFA trawl CVs is no longer necessary during the A and B season but should be maintained for the unrationalized C season. In addition, the PA would clarify Council intent for removing the AFA halibut PSC sideboard limit since they are no longer constraining and maintaining the AFA crab PSC sideboard limit in regulations since they are not managed at a fishery level.

Element 3 – Prohibited Species Catch Limits

The Council's PA for Option 3.2 to establish an apportionment of halibut and crab PSC limits between the trawl CV sector and the AFA C/P sector is consistent with the PPA. This provision subdivides the TLAS PSC limits and establishes a separate PSC limit for the BSAI trawl CV sector for halibut and crab PSC. The Council did add language to the first part of Element 3 to help clarify that the apportionment will not be fixed in regulation but rather it applies the PSC reduction to the PSC limit that occurs once the halibut and crab PSC is apportioned to the trawl CV sector.

The analysis describes that under the PA, halibut and crab PSC limits would continue to be managed at the TLAS level in regulations and at the fishery level during harvest specifications process. Following the apportionment of halibut and crab PSC at the fishery level via the harvest specifications, the PSC apportioned to the Pacific cod fishery would then be apportioned to the trawl CV sector and the AFA C/P sector based on Option 3.2. This approach maintains the Council's ability to adjust halibut and crab PSC limits for the Pacific cod fishery relative to the other fisheries to accommodate changes from year to year.

The analysis describes potential impacts of leaving PSC limit apportionments at the TLAS fishery level, resulting in the need for annual negotiations to take place regarding apportionment of PSC. This could serve to reduce benefits from cooperative fishing and potentially bring other Pacific cod fishery sectors into the process. Based on this potential increased uncertainty and for consistency with previous Council rationalization programs, the Council believed it appropriate to establish separate PSC limit apportionments for the trawl CV and AFA C/P sectors.

Option 3.3 addresses PSC limit reductions for the trawl CV sector under the PA. The Council's experience with rationalization programs shows that as the race for fish ends, fleets can make operational choices that promote PSC savings. This is an important benefit of the program and reflects that substantial amount of testimony highlighting the importance of minimizing bycatch to the extent practicable in this rationalization program consistent with the purpose and need statement and National Standard 9.

The Council maintained a 25 percent reduction in halibut PSC limits for the PA (Suboption 3.3.1), consistent with the PPA. The Council reviewed the analysis carefully to provide a recommendation for a halibut PSC limit and noted that under the recommended qualifying years of 2009-2019, a 25 percent reduction would result in a PSC limit apportionment of 272 mt using the 2019 halibut apportionment to Pacific cod fishery category. This is compared to 382 mt for the trawl CV Pacific cod under the status quo, a savings of 91 mt after apportioning 19 mt of halibut PSC for the unrationalized C season. This savings of 91 mt of halibut PSC would stay in the water and will not be reallocated for use in other fisheries.

The analysis indicates that this reduced PSC limit would have been constraining in five years during 2009 through 2019. While the Council recognized there is some uncertainty regarding the fleet's ability to reduce halibut PSC under the PA, the Council noted that it should not limit its consideration only to historical levels of PSC by the trawl CV sector to determine what level of reduction is practicable. Under

a cooperative fishing program, the fleet would have more flexibility to avoid periods of high PSC rates and can implement additional measures to minimize halibut bycatch such as changes to gear configuration and eliminate the need for restricting night fishing when halibut PSC rates are historically higher.

A majority of the CV trawl fleet has substantial experience with rationalization programs and have demonstrated that when the race for fish is eliminated, bycatch avoidance measures become increasingly successful. Table 2-104 and Figure 2-6 in the analysis show that under the derby fishery, some of the lowest PSC rates occurred in recent years (2017, 2018, and 2020). Once rationalized, the fleet would have to maintain average halibut PSC rates that are similar or lower than these recent years to not be constrained by the halibut PSC limit. The Council believes this is achievable with the tools provided in the PA.

If Pacific cod TACs increase to pre-2018 levels, the proposed PSC limit is high enough to provide the flexibility to accommodate fluctuations in Pacific cod and halibut abundance. The Council noted that the maximum potential reduction of 35 percent would not provide the needed flexibility for periods of high Pacific cod TACs and wants to avoid creating a race for bycatch amongst the cooperatives which would undermine the key goals of this PA. Overall, the Council recommends that a 25 percent reduction would provide the appropriate balance of minimizing bycatch to the extent practicable while recognizing that bycatch encounters are variable from year to year and some buffer between the PSC limit and expected PSC use in most years is appropriate to accommodate these conditions.

The Council recommends a 35 percent reduction for all crab PSC limits. As reported in the October 2021 crab addendum, changes in stock status of crab, most notably red king crab, results in lower PSC limits for all sectors starting in 2022. When compared to the 2019 PSC limits, the 35 percent reduction represents a 48 percent reduction in the *Chionoecetes opilio* (*C. opilio*) limit, a 69 percent reduction in the *Chionoecetes bairdi* (*C. bairdi*) limit, and an 80 percent reduction in the red king crab PSC limit from the 2019 limits. For red king crab, this reduction results in a PSC limit of 545 red king crab (Zone 1) animals being apportioned to the trawl CV Pacific cod fishery for cooperative fishing.

The PSC reductions included in the PA would occur after 5 percent is taken off the top for the C season. These C season apportionments are expected to be sufficient based on information in the analysis in Table 2-121 that shows the average PSC usage during the trawl Pacific cod C season and ensure that the C season is not preempted if a PSC limit is reached under the PA. The smallest PSC limit considered for the C season appears to be appropriate given that any unused PSC in the PA can roll into the C season.

The Council included Suboption 3.3.3 as part of its PA and amended it to apply to the halibut PSC limit only and phase in the reduction over two years instead of three years. Phase-in provisions were included for halibut in the Amendment 80 program and in the GOA halibut PSC reductions under Amendment 95 and the Council believes providing some flexibility is warranted as the fleet gains experience under the new program.

Element 3 includes a balance of considerations with respect to ensuring we establish a rationalization program that provides the fleet with tools to minimize bycatch to the extent practicable.

Element 4 – Gulf of Alaska Sideboards

The Council's PA includes GOA sideboard limits for PCTC Program qualified LLP licenses. All AFA non-GOA exempt CVs and AFA LLPs would have revised sideboards for all GOA groundfish fishing activity and halibut PSC, except when fishing in the Central GOA Rockfish Program. Table 2-126 shows the revised sideboard limits, by species, for the non-GOA exempt AFA fleet. Several of these revised sideboard limits are too small to manage efficiently, so the PA includes a prohibition on directed fishing, in regulations, for SE outside pollock, western shallow-water flatfish, both central and eastern deep-water flatfish, and eastern GOA POP. Table 2-128 shows the aggregated sideboard halibut PSC limit would be set at 123 mt. If the halibut PSC sideboards are split seasonally, the limits become unmanageably small and so the Council is recommending they are managed as an annual limit. The recommended revised

halibut sideboard limit is a 44 percent reduction from the total current limit (219 mt) but provides a similar amount of halibut at the beginning of the year as shown in Table 2-127 (140 mt total during the first season split 131 mt shallow and 9 mt deep). Revising both the groundfish and halibut PSC sideboards is more comprehensive and ensures that CVs subject to the sideboards have an incentive to reduce halibut PSC.

The Council also included Element 4.2 and Suboption 4.2.1 in the PA which, unlike the PPA, includes the under 60' LLP licenses and the AI transferrable endorsements to both provisions so that all participants that are GOA-exempt are managed consistently. In addition to the seven transferrable LLPs that would qualify for QS, Tables 2-135 and 2-136 show that, up to eight AFA GOA exempt CVs and five non-AFA CVs would qualify for the exemption at a 200 mt threshold and could lease their BSAI CQ and fish in the GOA. The Council's PA also modifies the 200 mt threshold of the PPA to 300 mt, which resulted in an additional five more LLP licenses qualifying to lease their BSAI CQ and fish in the GOA. The Council considered including the Suboption and providing an exemption at 300 mt appropriate since these vessels are likely GOA-dependent and should continue to be allowed to focus on their GOA fishing activity, while still being able to derive some economic benefits from small amounts of BSAI Pacific cod QS that they may receive. Using the 136 mt trip limit imposed on the GOA pollock fishery as a proxy for trip size, LLP licenses that qualify for the exemption will receive average QS history that equates to less than 1.5 fishing trips.

The language in Option 4.2 makes clear that the cooperatives are responsible for monitoring this provision and implementing/enforcing a penalty structure for violations. This option prohibits PCTC cooperatives from leasing CQ generated by vessels that benefit from a GOA sideboard exemption. The cooperatives are responsible for tracking the fishing effort of those vessels in the GOA if the cooperative leases their CQ. OLE is not expected to enforce this provision, and therefore it will not be included in regulations implementing this program. The Council would monitor this limitation through the annual cooperative reports to ensure it is being monitored and enforced at the cooperative level.

Overall, the Council felt the recommended sideboard revisions would provide an adequate level of protection for GOA community fleets from increased participation that may result from the PA.

Element 5 – Processor and Community Provisions

Options under Element 5 were selected to provide community and processor stability under the proposed program. Stability is anticipated to be achieved through continued Pacific cod landings to historical processors in the communities where they have traditionally operated. Communities are expected to realize tax revenues that are similar to those described in Section 2.7.9.2 of the analysis to help cover operating revenue for communities. Excessive redistribution or consolidation of Pacific cod processing could negatively impact other dependent communities. The structure of the program is expected to allow some consolidation, but processing is expected to continue in the same communities that processed Pacific cod prior to implementation of the LAPP.

Element 5.2 was included as a limitation on eligible C/Ps acting as a mothership in the BSAI Pacific cod trawl CV sector fishery. The option selected under the PA allows two C/Ps to process up to 125 percent of their individual average processing history over the qualifying period selected under Element 2 but does not allow the firms to drop a year when calculating the limit. The analysis cannot show deliveries or processing of these two C/Ps due to data confidentiality constraints. Because the amount is a limit and not an allocation, the program does not require that this amount to be delivered to C/Ps, but it provides an upper bound on how much may be delivered. This is consistent with the Council's intent under BSAI Amendment 120, which closed a loophole on unlimited mothershipping of Pacific cod by C/Ps that had excess processing capacity due to their participation in other rationalization programs, in a fishery that has historically been primarily an inshore fishery and critically important to shoreside processors historically dependent on Pacific cod and the communities that benefit from those Pacific cod deliveries. This action further builds on BSAI Amendment 120 that limited the number of C/Ps that could act as a mothership in

the BSAI trawl CV Pacific cod fishery. The analysis for BSAI Amendment 120 showed that the BS trawl CV Pacific cod fishery was shifting away from being a predominantly inshore fishery (3.2 percent of the target Pacific cod fishery was delivered to C/Ps in 2016 as compared to 30.5 percent delivered to C/Ps in the 2019 A season). The increase in this mothership activity, starting in 2016 and increasing each year through 2019, was eroding shoreside cod landings. Those landings historically comprised almost the entire fishery. The reduction in shoreside landings eroded tax and other support service benefits from this fishery on which coastal Alaska communities depend. The analysis of community dependence and the tax revenue the communities receive underscores the importance of this Pacific cod fishery to certain rural Alaskan communities.

Under Amendment 120, the Council reduced the number of eligible C/Ps but did not include a limit on the amount of BSAI Pacific cod the eligible C/Ps may process, because the fishery was still managed under a race for fish. Under that open access system the Council did not think that any one processor could increase their capacity significantly. As a result, the Council simplified its action by not including a processing limit on the eligible C/Ps. However, the Council determined that under a rationalized, slowed down, cooperative fishing scenario, it would be possible for continued offshore growth beyond historical patterns and recommended the processing limit option. Option 5.2.1 gives each C/P a processing limit greater than its historical average, so it also provides some opportunity, on average, for growth. The PA was selected as a way to balance the need to continue to provide for vessels that want to (or in some cases only can) deliver offshore, the historical C/P platforms, shoreside processors, and the communities dependent on those landings.

The Council determined that an allocation of harvest shares to processors would be necessary to provide stability to the sectors involved in the fishery after it transitions from a limited access fishery to a LAPP. The information presented in the analysis does not provide a point estimate of the optimal percentage of QS that should be allocated to processors to provide stability for harvesters and processors. However, if processors are issued a 30 percent allocation and they compensate harvesters with the same amount of quota foregone to fund the processor allocation, a harvest vessel may need to forego all or some of that CQ to change cooperatives. If CVs could not make up that revenue difference in ex-vessel price with any other processor, leaving the cooperative would not make economic sense even if another processor was able to offer a slightly higher price than they were receiving. Alternatively, a 5 percent allocation to processors would provide processors less market power to retain the independent vessels in their fleets. CV operators may find another processor that could offer enough CQ to make up the 5 percent difference or offer a slightly higher ex-vessel price or other market incentives. As the percentage of QS allocated to the processors changes within the continuum considered, the leverage that each sector would have also changes and the effects would likely be most realized by firms that have less leverage outside the Pacific cod fishery.

Based on the information presented in the analysis and a broadly supported industry agreement for a 22.5 percent allocation of harvest shares to processors, the Council ultimately selected that percentage. This percentage was supported by groups representing the trawl and processing sectors as a compromise position.

Element 6 – Aleutian Islands Processor Provisions

The Council selected Option 6.1, creating a set-aside of 12 percent of the trawl CV sector directed A season CQ for delivery to AI shoreplants. The set-aside is designed to be in place during the trawl CV sector Pacific cod A and B seasons. Cooperatives would be responsible for submitting a plan to coordinate the harvest and delivery of the set-aside.

An inter-cooperative agreement would be required that describes how the set-aside would be managed by the cooperatives. The purpose of adding this provision is to ensure annual coordination between the PCTC cooperatives and shoreplants that are operating in the Aleutian Islands and to guarantee that the AI

CQ reserve selected by the Council is harvested in the Aleutian Islands. This takes the management burden from NMFS and uses the cooperatives under the program to organize the annual fishing activity.

Whether Pacific cod would be delivered to the AI shoreplant(s) depends on the willingness of the cooperatives (through the inter-cooperative agreement) to work with the communities/processors to ensure that Pacific cod CQ is harvested under the set-aside and the willingness of the AI shoreplant operator(s) to offer competitive exvessel prices and delivery terms.

The 12 percent allocation is based on historical use to treat the AI shoreplants more like everyone else in the program. The Council did not select Option 6.2 based, in part, on concerns about ability to lease CQ, which was not the intent of the Council in providing processing opportunities for the AI communities. A specific objective is to provide opportunity for AI cod harvests to support a shoreplant that could be used in conjunction with other fishery landings and allocations to benefit AI communities, including Adak. The Council determined that Option 6.1 best met their objective to achieve this outcome. It also creates a “prove up concept that is common in our North Pacific management” or notify NMFS that they intend to process. The Council’s intent was to start with set-aside program and evaluate whether changes are needed to improve operations.

The Council also noted that AI shoreplants are different from the non-AI shoreplants and therefore, a different management structure is appropriate, and the allocation was not based on the same structure used under Element 5.4. The allocations of harvest shares to processors under Element 5.4 were based on the historical processing activity of active processors. Such a structure would not work well for AI communities based on the erratic and impermanent operation of the plant by firms in Adak.

Element 7 – Transferability of QS and CQ

QS would be assigned to LLP licenses (or transferable AI endorsements) and processor permits and would not be severable, except under very specific conditions. Limiting the severability of the QS is expected to decrease consolidation of the ownership of the QS. If QS were severable without limits, a person would not be required to divest of their LLP license to transfer QS. An LLP license is needed to participate in other federal fisheries off Alaska, so without this limitation the person could sell their Pacific cod QS to another QS holder and continue to participate in other fisheries - perhaps increasing effort in those fisheries beyond what was intended.

Suboption 7.1.1 would provide a 90-day window of time for QS to be transferred between LLP licenses associated with non-exempt AFA vessels to accommodate agreements for the use of Pacific cod within AFA cooperatives. After the 90-day window the QS would be non-severable from the LLP license to which it is assigned, except if the transfer is supported by an operation of law.

CQ would be transferable within and between cooperatives to provide greater flexibility to participants in the program. It also would allow cooperatives to consolidate small amounts of CQ at the end of the fishing year that would not support a full trip to better achieve OY. The use of CQ would still be limited by the caps established under Element 8.

Element 8 – Ownership and Use Caps

Maximum ownership and use caps are required elements of a LAPP and are intended in part to prevent any person from acquiring an excessive share of the total limited access privileges. The Council’s PA would establish maximum ownership caps for harvester- and processor-issued QS and use caps on the total amount of CQ a vessel or person can annually use. The Council included grandfather provisions that would allow persons to exceed the maximum amounts selected by the Council based on the person’s historical use of the fishery. However, the grandfather provisions would not allow a person to acquire or use an excessive share of the fishery as defined by the Council for this LAPP. Therefore, the proposed maximum ownership and use caps are set at levels below what the Council considers an excessive share of the fishery.

Under 8.1, using the individual and collective rule, no person may hold or use more than 5 percent of the harvester-issued QS. At this cap level, Table 2-155 shows that 40 LLP license holders would be subject to the 5 percent cap and up to six LLP license holders would be grandfathered at their initial allocation. Selecting the lowest cap limits the amount of consolidation among LLP license holders and prevents excessive consolidation. Including the grandfather provision ensures that LLP license holders who are above the 5 percent cap can continue to operate at their current average level, but they will not be able to increase their ownership of LLP licenses with PCTC quota share. The maximum holding and use cap that would be allowed under this program is the level at which an entity is grandfathered at their average historic use at the time of program implementation. Future holdings above this level are thereby considered excessive shares and would not be allowed.

Element 8.2 would establish a vessel use cap. Based on public testimony and the AP motion, the Council selected a cap of 5 percent. The cap was increased from that of the PPA of 4 percent to allow for more specialization of cod-dependent boats when the TACs are low and to allow for more flexibility within the cooperatives. The cap would implicitly establish a minimum number of about 20 vessels. Figure 2-15 in the analysis shows that very few vessels have ever harvested more than 5 percent of the annual total Pacific cod target fishery. Recognizing the Pacific cod fishery has operated as a limited access fishery focusing more on the race for fish and that cooperative management of the Pacific cod fishery would allow cooperatives to optimize their vessels by shifting Pacific cod fishing effort to more efficient vessels, it seems there could be potential for a 4 percent vessel limit to be constraining. The analysis notes that applying the 4 percent limit without accounting for a grandfather provision would allow a vessel to make four or five trips per year before hitting the vessel use cap. This could limit the number of trips by vessels that want to focus more heavily on the Pacific cod fishery while allowing other vessels to focus on pollock. Therefore, the Council felt it was reasonable to provide additional flexibility by raising the vessel use cap to 5 percent as analyzed in Alternative 2b.

Further, Section 2.8.8.2 of the analysis that describes Element 8.2 states that the Council could apply the grandfather provision to the LLP license or the vessel assigned to that LLP license. The PA specifies that the Element 8.2 grandfather provision would be applied to the vessel designated on an LLP license that yields more than 5 percent of the annual Pacific cod CQ at the time of initial allocation. Consistent with other rationalization programs recommended by the Council, this grandfather provision would not be transferrable if the LLP is transferred to a new owner. Allowing a limited number of LLP licenses assigned to vessels to harvest more than the 5 percent limit would ensure that current LLP owners can continue to operate at their historic average level in the Pacific cod trawl fishery while also preventing anyone from using an excessive share.

Using the individual and collective rule, the Council specified that no person may hold or use more than 20 percent of the processor-issued QS under Element 8.3. The Council increased the PA relative to the PPA amount of 15 percent based on public testimony, the AP motion, and information in Table 2-157 in the analysis that shows the average percentage of processing history of the top four processing firms is 18.7 percent. Setting the cap slightly higher than this average percentage would minimize the number of processors that may be above this cap and subject to the grandfather exception.

Data confidentiality constraints limited the Council's ability to know exactly how many processors may be issued quota share above the 20 percent cap – it could be none or up to two based on the analysis. The Council recommended including the provision so that persons above the limit would be able to maintain investments at their historical average. Persons at the cap or above the cap who receive their historical average would not be able to acquire more processor-issued QS and could never own an excessive share of the processor-issued QS.

The Council modified language under element 8.4 and applied the processing cap at the person level as suggested in public comment and in the AP's motion. Language was also added that applies this cap using the individual and collective rule so it would be consistent with the other options that apply to

ownership caps under this program. Applying the processing cap at the company level provides more flexibility and economic efficiency for companies that have operated more than one processing platform. It also would prevent persons that operate multiple plants from using what the Council may consider an excessive share of the fishery. The information in the analysis is already provided at the company level due to confidentiality constraints, so this change is consistent with what has been analyzed.

In selecting the PA of 20 percent, the Council considered whether the minimum number of processing companies should be four or five. Given that the current number of shoreside processors is seven and there are two offshore platforms, the Council felt that limiting consolidation in the processing sector, even by just one company made sense. Pacific cod is an important species for all sectors and a 20 percent use cap maintains the needed flexibility to accommodate historical participation in the fishery, and provides stability for the future, which promotes investment in value-added products to increase the value of the fishery.

Ownership and use caps selected by the Council, along with the grandfathering exceptions, were determined to largely maintain the status quo levels of participation and prevent disrupting fishery stability. These limits and exceptions would prevent excessive consolidation because the fishery cannot compress below a minimum number of participating LLP license owners, vessels, or processors. These limits prevent the acquisition of excessive shares in the future and are therefore consistent with NS 4 and MSA 303(A)(c)(5).

Element 9 – Cooperative Provisions

The Council indicated that cooperative applications must be filed on or before November 1. NMFS determined that submissions by this date would allow sufficient time to process the applications and issue CQ to cooperatives for the upcoming fishing year.

Cooperatives would be formed by the holders of LLP licenses assigned Pacific cod trawl CV QS. Limiting the cooperative membership to those persons is intended to better allow the formation and function of the cooperatives.

Cooperatives are intended to only conduct and coordinate harvest activities of members and are not FCMA cooperatives. The structure would allow the cooperatives to operate as intended to improve efficiency of harvesting and processing Pacific cod without the need for meeting the requirements for exemptions from anti-trust laws that are afforded under the FCMA.

Element 10 – Share Duration

All QS and allowances under this program are revocable privileges that 1) may be revoked, limited or modified at any time; 2) shall not confer any right of compensation to the holder, if they are revoked, limited, or modified, and 3) shall not create or be construed to create any right, title or interest in or to any fish before the fish is harvested by the holder. This is consistent with requirements under the MSA.

The duration of all QS and associated PSC apportionments is 10 years. These permits would be renewed before their expiration, unless revoked, limited, or modified. The Council could have required that a future Council take action to renew the permits after 10 years or sooner. However, the Council understood that a future Council reserves the right to alter or remove the program at any time. It also understood the additional time and cost burden that could fall on a future Council if the program had a sun-set date. For those reasons, it selected the share duration provisions as allowed under the MSA.

Element 11 – Monitoring

NMFS would implement any necessary monitoring and enforcement provisions. Shoreside processors would be required to have a Catch Monitoring and Control Plan (CMCP) approved by NMFS to accept deliveries of PCTC CQ. To accommodate concerns by small vessel operators the Council determined that for the first three years after implementation the current at-sea observer data

requirements would be maintained. The Council delayed implementation of certain at-sea data transmission requirements as a compromise. The Council assumed that most of the vessels that do not currently have data transmission capability can realize the benefits from this program, obtain the technology (that will likely decrease in price over time), or would not be participating in the fishery; therefore, this exemption to at-sea data transmission requirements is less likely to be needed once the program matures.

Element 12 –Reporting and Program Review

To better understand how well the program, once implemented, is meeting the Council’s goals and objectives, each cooperative would be required to annually produce a report for the Council describing its membership, cooperative management, and performance in the preceding year including use of CQ derived from processor issued QS and harvest and delivery of the AI CQ reserve, if applicable. The reports to the Council would provide it a scheduled, annual opportunity to review the program and address in a timely manner any issues that may arise.

Per the MSA, a formal detailed review of the program would be undertaken five years after implementation, with additional reviews, at a minimum, each seven years thereafter. The Council notified industry of its intent to follow the review schedule outlined in the MSA.

Element 13 –Cost Recovery

The MSA requires that any new LAPP include cost recovery. As a result, the Council notified industry that a fee, not to exceed 3 percent of the ex-vessel value, would be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.

2.6. Alternatives and Option Considered but Removed from Consideration

Gear Conversion

During selection of the Council’s PA in October 2021, the Council did not include Element 14 which would have authorized BSAI Pacific cod quota associated with trawl CV LLP licenses to be fished annually by a CVs using pot gear. The gear conversion element would have applied to the seasons covered by the PCTC Program and the season dates would be based on the start and end dates for the trawl fishery. PSC use would have been deducted from the PSC allocated to the cooperative and pot CVs harvesting CQ would have been subject to 100 percent coverage. In the end, the Council did not include Element 14 in its PA due to new stock information concerning red king crab (Zone 1) and *C. opilio* and the potential high PSC from the gear conversion to pots on these crab stocks.

AFA and non-AFA Cooperative Option

During the December 2020 meeting, the Council removed from consideration the AFA and non-AFA cooperative approach due to challenges in developing a BSAI Pacific cod cooperative program based on an AFA and non-AFA structure and because of how this approach would integrate processors if allocated QS. This approach would have authorized an AFA trawl CV cooperative and non-AFA trawl CV cooperative. An eligible LLP license would have been required to join a single cooperative based on the vessel that is named on the LLP license and its AFA/non-AFA authorization. A cooperative under this option would have been formed if at least 80 percent of the total eligible catch history assigned to the eligible LLP license joined the cooperative. The AFA vessels and non-AFA vessels would have formed their cooperative independently of each other. A person owning both an AFA vessel and non-AFA vessel would have been required to join the AFA cooperative for the AFA vessel and the non-AFA cooperative for the non-AFA vessel. The option would not have required a processor association to form the cooperatives.

Under this approach, trawl CVs and the eligible LLP licenses to which the vessel is assigned that do not join the cooperative would have been eligible to fish in the limited access fishery based on the QS assigned

to the eligible LLP license authorizing the vessel. Halibut and crab PSC limits for the trawl CV limited access sector would have depended on how the PSC limits were apportioned to the trawl CV sector. This approach included a reduction in halibut and crab PSC apportioned to the limited access fishery for those trawl CVs and their attached eligible LLP licenses that would not have joined an AFA or non-AFA cooperative. The PSC reductions that were under consideration ranged from 25 percent to 40 percent of the amount assigned to the limited access fishery. Allowing only an AFA and non-AFA cooperative was rejected by the Council after considering the obstacles it would create under the various program elements being considered by the Council and withdrawal of industry support for the option. For example, under the options that would allocate quota to processors it would create a situation where multiple processors would assign CQ to a cooperative and would require that through the cooperative would need to negotiate the terms and conditions of the harvest of those Pacific cod. This would have raised antitrust concerns that would need to be carefully navigated. Integrating multiple processors, the potential limitation in competition, and reduced cooperative formation choice, were ultimately the issues associated with the two cooperative approach that lead to it being removed from consideration. The PA allows a cooperative to associate with one processor. This model has been used successfully in the AFA program and CGOA Rockfish Program and reduces antitrust concerns that were raised to the Council under the AFA and non-AFA cooperative structure.

2.7. Methods Used for the Impact Analysis

The costs and benefits of this action are described in the sections that follow, comparing the no action Alternative 1 with the action alternatives.²³ The analysis then provides a qualitative assessment of the net benefit to the Nation of each alternative, with “no action” as a baseline.

This analysis was prepared using data from the NMFS Catch Accounting System (CAS), which is the best available data to estimate total catch and PSC in the groundfish fisheries off Alaska. Total catch estimates are generated from information provided through a variety of required industry reports of harvest and at-sea discard, and data collected through an extensive fishery observer program. In 2003, NMFS changed the methodologies used to determine catch estimates from the NMFS blend database (1995 through 2002) to the catch accounting system (2003 through present). Currently, the catch accounting system relies on data derived from a mixture of production and observer reports as the basis of the total catch estimates. This analysis relies solely on total catch and PSC estimates. For the most part, this analysis relies on fishery data beginning in 2004. BSAI Pacific cod catch data for AFA CVs for 1997 was utilized for Element 2, Option 4.

Fishery data are provided through the Alaska Fisheries Information Network (AKFIN). AKFIN has access to the CAS data, Commercial Fisheries Entry Commission (CFEC) Fish Ticket data, and Alaska Department of Fish and Game (ADF&G) Commercial Operators Annual Report (COAR) data from which it can supply catch and discard records, as well as estimates of gross ex-vessel and first wholesale revenues.

Fishing vessel safety data are provided by the National Institute for Occupational Safety and Health (NIOSH) who manages the Commercial Fishing Incident Database (CFID). CFID is a national surveillance system that contains information on work-related fatalities and vessel disasters in the U.S. fishing industry. For Alaska, CFID contains fatality data from 2000 through 2018 and vessel disaster data from 2000 through 2018.

²³ The evaluation of impacts in this analysis is designed to meet the requirement of E.O. 12866, which dictates that an RIR evaluate the costs and benefits of the alternatives, to include both quantifiable and qualitative considerations. Additionally, the analysis should provide information for decision makers “to maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.”

2.7.1. Data Limitations

Certain data and information would have been useful if it could have been included as part of this analysis. The following is a list of this unavailable information.

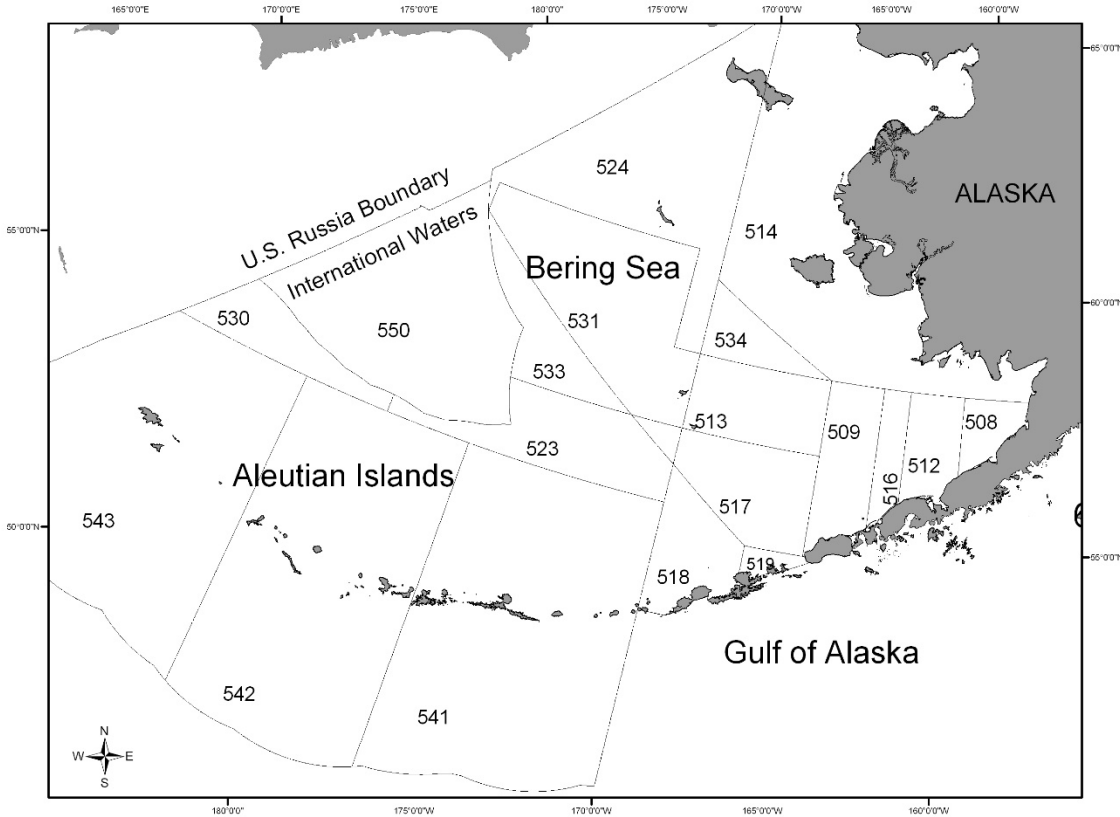
- Ownership data that would allow better estimates of ownership and use caps. Data used in the analysis was based on address which may over or underestimate the true values.
- Data on product flow after it first leaves the U.S. Data on product that is reimported or receives secondary processing in the U.S. would help refine the analysis of Net National Benefits.
- Consistent cost and employment data across all sectors. Currently data are collected using Economic Data Reports (EDRs) that have different levels of information for some sectors and not at all for other sectors. The piecemeal approach to data collection limits its usefulness.
- Comparable first wholesale value data for all species. AKFIN staff have advised the analysts that direct comparisons of groundfish first wholesale values are appropriate but comparing groundfish first wholesale values with non-groundfish species may be misleading. Therefore, the analysis compares ex-vessel values for processors (the amount they spend buying fish) and not first wholesale values (the amount they receive for their product) in the diversification discussion.
- Systematically collected time series data on fisheries support service sector entities and community patterns of CV, C/P, and shore-based processor expenditures. If these data were available, more detailed social and economic analyses of sector and community impacts would be possible, including a more accurate picture of local multipliers for fishery related expenditures. Additionally, this type of information would help in associating vessels with particular communities based on quantitative data for the purposes of social impact assessment as a supplement to, if not a replacement for, assigning vessels to communities based on other factors, such as ownership address, homeport, or LLP license ownership address which are currently used as proxies for revenue flows.

2.8. Description of Fisheries

2.8.1. Description of Management

Each year, the Council's BSAI groundfish plan team and SSC establish an overfishing level (OFL) and acceptable biological catch (ABC) for Pacific cod for the BS subarea of the BSAI, and a separate OFL and ABC for the AI subarea of the BSAI (see Figure 2-1 for a map of the BS and AI operating area and the reporting areas). Before the AI and BS Pacific cod total allowable catches (TACs) are established at a more localized level, 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: 1) Pacific cod guideline harvest level (GHL) fisheries that occur in the State waters of the BSAI, and 2) an overall 2 million mt limit on the maximum amount of TAC that can be specified for all BSAI groundfish. The process for establishing Pacific cod catch limits and sector allocations is illustrated in Figure 2-2.

Figure 2-1 Map of the BSAI reporting areas



Pacific cod TACs are specified at reduced levels that take into account the GHL fisheries²⁴ so that the combined harvest limits from GHL fisheries and the TACs do not exceed the ABCs specified for the BS or AI. The State manages three GHL fisheries for Pacific cod²⁵, two that occur within State waters in the BS and one that occurs within State waters in the AI. Under current State regulations in the BS, the Dutch Harbor Subarea (DHS) GHL fishery for pot gear equal to or less than 58 feet overall length in the BS is set at 10 percent (for 2021) of the BS ABC with an annual 1 percent increase in that GHL allocation if 90 percent of the GHL allocation is harvested, until it reaches 15 percent of the BS ABC. A second BS GHL fishery began in 2019 allocating approximately 45 mt (100,000 lbs.) to the jig sector in the DHS. In the AI, the GHL fishery was set at 27 percent of the 2018 ABC specified for AI Pacific cod, with annual “step-up” provisions that would increase the amount of the GHL fishery if at least 90 percent in the previous year’s GHL was harvested. The 2021 AI GHL was increased to 34 percent but limited by the 6,804 mt maximum AI GHL. If the GHL fishery continues to be nearly fully harvested it can continue to increase annually by 4 percent up to a maximum of 39 percent of the AI ABC or to a maximum of 6,804 mt (15 million lbs.), whichever is less. Allowable gear in the AI GHL fisheries include trawl, longline, pot, and jig gear.

Once the individual AI and BS TACs are established, regulations at 50 CFR §679.20(a)(7)(i) allocate 10.7 percent of the BS and AI Pacific cod TAC to the CDQ Program. The remaining portion of TAC, after deducting the 10.7 percent allocation for CDQ Program, is the ITAC. Table 2-2 provides ABCs,

²⁴ <http://www.adfg.alaska.gov/FedAidPDFs/FMR18-18.pdf>

²⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaaleutianislands.groundfish>

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 2-2 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						

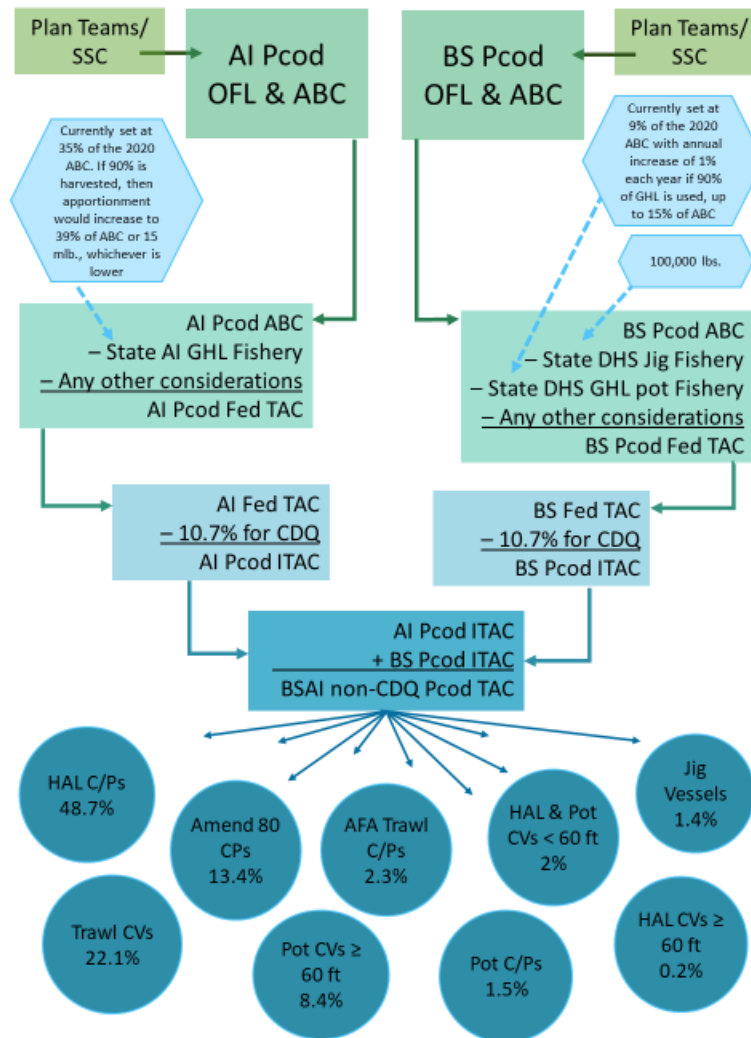
Source: NMFS Final Specifications

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

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

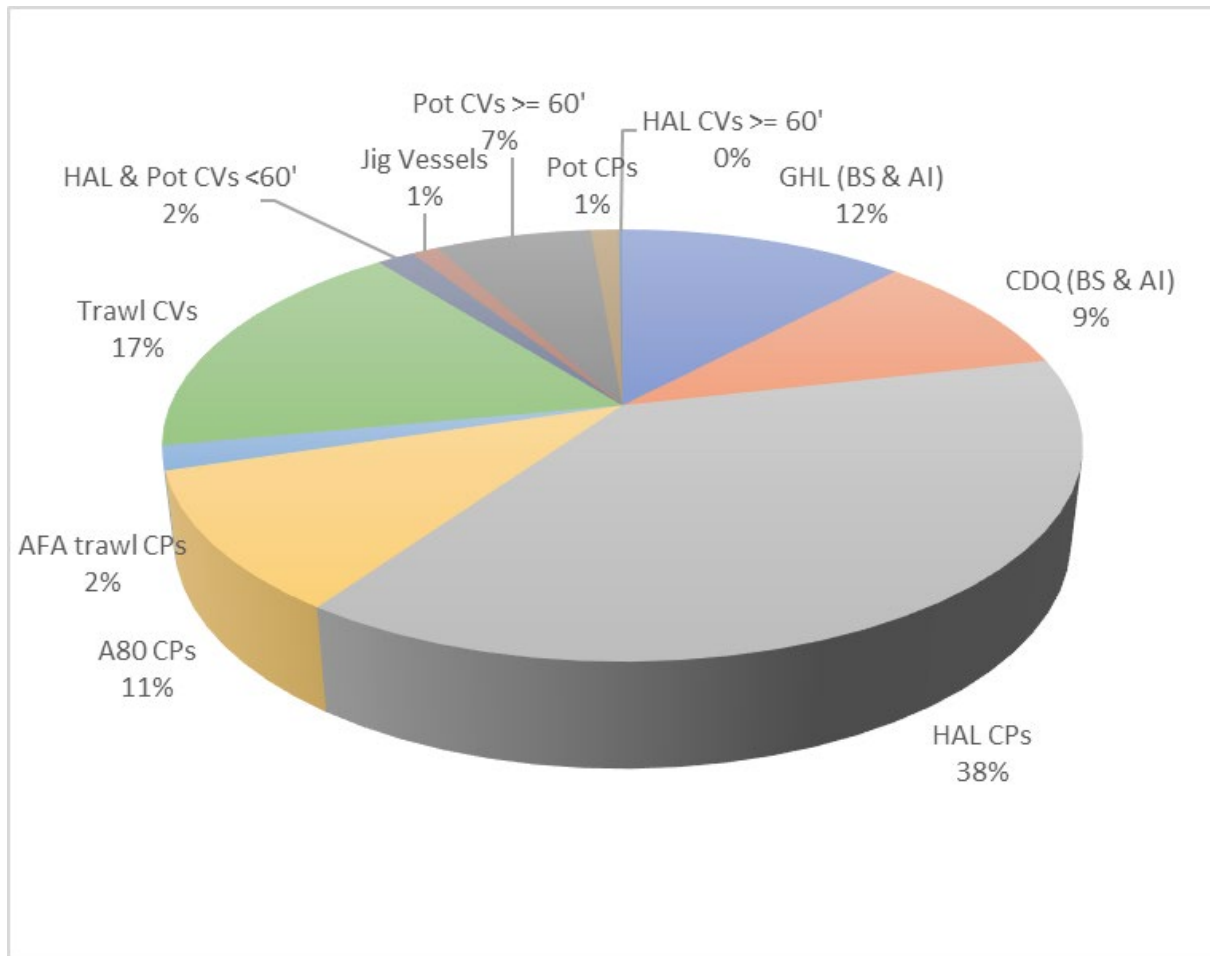
After subtraction of the CDQ allocation from each TAC, NMFS combines the remaining BS and AI ITACs into one BSAI non-CDQ TAC, which is available for harvest by nine non-CDQ fishery sectors. Regulations implemented under BSAI Amendment 85 at 50 CFR §679.20(a)(7)(ii)(A) define the nine Pacific cod non-CDQ 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, hook-and-line (HAL)), operation type (i.e., CV or catcher/processor), and vessel size categories (e.g., vessels ≥ 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 Figure 2-2 below. Using the information shown in Figure 2-2, a chart showing the percent of BSAI Pacific cod ABC allocated to the AI and the BS GHL fisheries, the CDQ fisheries, and the nine non-CDQ federal sectors (Figure 2-3).

Figure 2-2 BSAI Pacific cod specifications and sector allocations



Notes: SSC= Scientific and Statistical Committee, AI= Aleutian Islands, BS= Bering Sea, Pcod= Pacific cod, OFL= overfishing limit, ABC= acceptable biological catch, GHL= guideline harvest limit, DHS = Dutch Harbor Subarea, TAC= total allowable catch, ITAC= initial total allowable catch, CDQ= community development quota, HAL= hook-and-line, CV= catcher vessel, C/P= catcher/processor, AFA= American Fisheries Act, Amend 80= Amendment 80

Figure 2-3 Distribution of BSAI Pacific cod ABC by user group/sector



Notes: AI= Aleutian Islands, BS= Bering Sea, GHL= guideline harvest limit, CDQ= community development quota, HAL= hook-and-line, CV= catcher vessel, C/P= catcher/processor, AFA= American Fisheries Act, Amend 80= Amendment 80

NMFS manages each of the non-CDQ fishery sectors to ensure harvest²⁶ 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 in the pollock directed fishery). NMFS allocates exclusive harvest privileges to the non-AFA trawl C/P sector (Amendment 80 sector) that is prohibited from being exceeded. For the other eight 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 fishing harvests 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. The other area will remain open to directed fishing for all sectors as long as

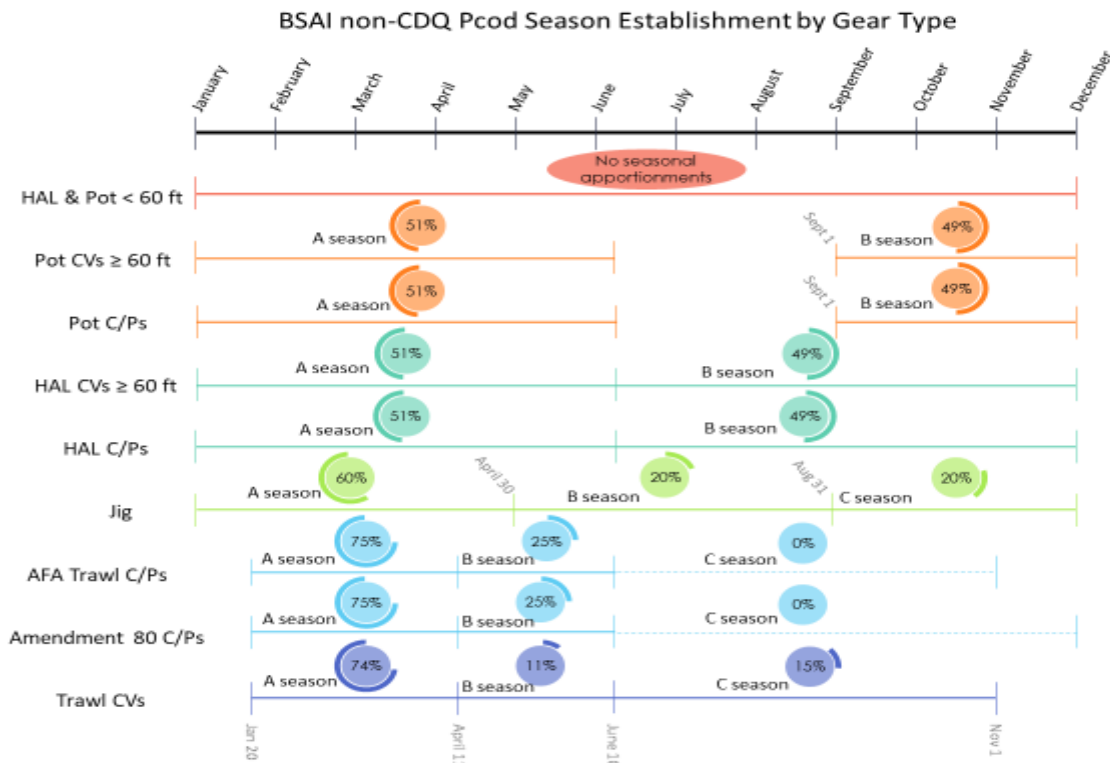
²⁶ Pacific cod is managed under Improved Retention/Improved Utilization regulations that prohibit the discard of Pacific cod, except under very limited circumstances. Those regulations have caused the harvest and total catch (harvest plus at-sea discards) to be about equal. NMFS manages the fishery to account for total removals of Pacific cod and not only harvest.

Pacific cod TAC is available in that area and the sector has Pacific cod available from their BSAI allocation.

BSAI non-CDQ Pacific cod allocation are managed at the BSAI level. Because there are no non-CDQ sector allocations specific to each area, there are not 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 allowance varies by gear type taking into account changes to the season dates from the Steller sea lion protection measures implemented in 2015. For the trawl CV sector, the A season apportionment is 74 percent, B season apportionment is 11 percent, and the C season apportionment is 15 percent. Figure 2-4 demonstrates how those seasons vary by non-CDQ sector.

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, creates a large number of separate sector seasonal allocations. Table 2-3 provides the BSAI Pacific cod apportionment and BSAI Pacific cod seasonal allowance for the 2021 fishing year. To help ensure the efficient allocation management, NMFS may 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 (§ 679.20(a)(7)(iv)(B) and (C)).

Figure 2-4 BSAI non-CDQ Pacific cod seasonal apportionments by gear type



Note: HAL= hook-and-line, CV= catcher vessel, C/P= catcher/processor, AFA= American Fisheries Act

Table 2-3 BSAI non-CDQ Pacific cod sector apportionment and BSAI non-CDQ Pacific seasonal allowance for 2021

Sector	BSAI Sector Apportionment (mt)	BSAI Season allowance (mt)		
		A	B	C
H&L/pot < 60'	1,888	No seasonal allowance		
H&L CV ≥ 60'	189	96	93	n/a
H&L CP	45,965	34,347	22,523	n/a
Pot CV ≥ 60'	7,928	4,043	5,692	n/a
Pot CP	1,416	722	694	n/a
Jig vessels	1,331	799	266	389
AFA trawl CP	2,186	1,640	547	0
Amendment 80	12,736	13,964	4,655	0
Trawl CV	21,004	15,543	2,310	3,151

Source: NMFS Final Specifications

2.8.2. Management of BSAI trawl CV incidental catch allowance

NMFS determines the directed fishing allowance (DFA) for the seasonal apportionments of the BSAI trawl CV TAC by first determining the projected incidental catch allowance (ICA) of Pacific cod by BSAI trawl CVs in other groundfish directed fishing targets during that season. For example, Pacific cod caught incidentally by BSAI trawl CVs in other target fisheries (usually pollock, yellowfin sole, Atka mackerel, Pacific ocean perch (POP)) contribute to the Pacific cod ICA. After deducting the ICA, the remaining TAC is the DFA. The DFA is the amount allowed to be fully retained. Also, Pacific cod is an improved retention/improved utilization species and required to be fully retained by all trawl vessels when directed fishing is open for that sector (see §679.27).

Directed fishing closes once the DFA is reached. A directed fishing closure limits retention of that species to a percentage of the retained catch of other species open to directed fishing and retained. This percentage is called the maximum retainable amount (MRA). The MRA percentage relates to the expected incidental catch rate of Pacific cod in other fisheries and is used as a tool to allow some retention of Pacific cod to avoid regulatory discards. Because Pacific cod is an improved retention/improved utilization species, a vessel may not discard Pacific cod when directed fishing is closed for that vessel unless they catch more than the MRA allowed.

If the total Pacific cod apportionment of the TAC for the BSAI trawl CV sector is caught before the end of the year, then retention of Pacific cod is prohibited. Prohibiting retention removes any incentive to increase incidental catch. If the BS or AI ABC is reached and the incidental catch indicates the BS or AI OFL may be approached, additional closures are imposed. To prevent reaching the OFL, specific fisheries identified by gear and area that incur the greatest incidental catch are closed. If the rate of catch is not sufficiently slowed, then closures expand to other fisheries. In general, overfishing level closures are rare.

The BSAI Pacific cod incidental catch is managed differently depending on the sector. For the BSAI trawl CV sector (also the AFA trawl C/P and jig sectors), the ICA is estimated during each season and is the amount estimated as incidental catch. In some prior years, the trawl CV season closed late in the A season and the amount needed for incidental catch after the directed fishing closure was low. In recent years, the A season has closed in early February and incidental catch from the A season allocation is needed for pollock, yellowfin sole, and Atka mackerel. Trawl CVs directed fishing for these species are required to retain Pacific cod up to 20 percent of these retained species. In 2020, this incidental catch was slightly greater than 7,000 mt.

For BSAI trawl CV B season, catch under or over the A season allocation is added to or subtracted from the B season allocation. The trawl CV B season is the lowest seasonal allocation (11 percent) of the annual allocation and therefore more difficult to manage to the TAC available. If the incidental catch set aside in the A season was too low, then even less Pacific cod is available for the B season. Catch rates in the beginning of April are usually high but start to decrease after the first week or so. Therefore, NMFS has not reallocated unused trawl CV A season allocations to other sectors. In the B season, most of the AFA CVs concentrate on BS pollock. Also, incidental catch of Pacific cod in the B season pollock fishery is usually lower than the A season. In 2020, the trawl CV Pacific cod B season TAC available did not support directed fishing and B season directed fishing was closed. Also, 2020 B season incidental catch exceeded the B season TAC available. In other recent years, the B season has opened for only 24 to 48 hours because of the limited TAC available for the B season. The incidental catch in the trawl CV Pacific cod B season is usually less than the A season as the pollock fishery is winding down for the A season, but yellowfin sole, Atka mackerel, and POP fisheries may be occurring.

The BSAI trawl CV C season is 15 percent of the annual allocation. Although directed fishing for trawl CV Pacific cod in the C season is important part of the annual fishing plan for some trawl CVs, most of the trawl CV C season catch is incidental to other directed fishing. In August, before directed fishing opens September 1 for the hook-and-line and pot sectors, NMFS starts to estimate if any BSAI trawl CV C season allocation may be available for reallocation to other sectors. In some years, it is clear that there will be projected unused trawl CV TAC available to reallocate and NMFS may process a reallocation in late September or October. In other years, it is less clear, and NMFS waits until after directed fishing for pollock and Pacific cod for the trawl CV sector closes. Then reallocations would occur in November or December. When the BS and AI Pacific cod TACs are higher, it is usually the case that some trawl CV C season Pacific cod will be unused and reallocated to other sectors. Also, in some years the other fisheries for trawl CVs are done for the year in October or there are no trawl CVs directed fishing for C season Pacific cod.

For Pacific cod in a catch share program or most CDQ fisheries, allocations are granted to cooperatives or particular groups. In exchange, the recipients actively monitor their fisheries and limit their catch rather than NMFS issuing directed fishing closures. In some catch share programs, such as Amendment 80, the cooperatives are required to manage their directed fishing and incidental catch to remain under their Pacific cod allocation and therefore Amendment 80 Pacific cod is considered a hard cap allocation.

For the BSAI Pacific cod hook-and-line and pot gear sectors, the Regional Administrator will specify an amount of Pacific cod that NMFS estimates will be taken as incidental catch while directed fishing for groundfish other than Pacific cod by the hook-and-line and pot gear sectors. This amount will be the ICA specified in the harvest specifications and will be deducted from the aggregate portion of Pacific cod TAC annually allocated to the hook-and-line and pot gear sectors before the allocations are made to these sectors. Since Amendment 85 implementation, this amount has been 400 to 500 mt. Currently, the regulations have no provisions for this Pacific cod ICA to be reallocated to the hook-and-line and pot gear sector's DFAs, or vice versa, toward the end of the year if the ICA was set too high or too low.

2.8.3. Reallocations Among Gear Types

BSAI Pacific cod TAC reallocation decisions are based on the hierarchy described at §679.20(a)(7)(iii) and take into account the capability of a sector to harvest both their initial Pacific cod TAC and any reallocations they may receive. There are no reallocations to or from the CDQ TAC allocations except transfers between CDQ groups. Also, for the Amendment 80 catch share program allocations transfers between cooperative(s) or reallocations from the Amendment 80 limited access sector to Amendment 80 cooperative(s) are allowed. Starting in 2018, there is one Amendment 80 cooperative and starting in 2011 there has been no Amendment 80 limited access sector, so no transfers or reallocations within this sector have occurred in recent years. However, the Amendment 80 sector is eligible to receive a reallocation

from other non-CDQ sectors. There is no regulatory provision to reallocate from the hook-and-line and pot incidental catch allowance or the C/P HAL sector.

In general, the projected unused allocations in any sector delivering inshore, i.e., CV sectors, would be reallocated primarily to other inshore sectors before being reallocated to any offshore, i.e., C/P, sector, and, secondarily, within a gear type before being reallocated to another gear type. Any reallocation of Pacific cod requires publication in the Federal Register before it is effective. This process may take about a week.

In the BSAI, most sector's A season allocations are fully harvested, and if not, any remaining A season allocation rolls over to the next season for that sector. Therefore, reallocations of A season TAC are rare. One exception is for the BSAI jig sector where any projected unused portion of a seasonal allowance of Pacific cod is required to be reallocated to the HAL/pot CV less than 60' sector. The HAL/pot CV less than 60' sector does not have seasonal allocations under Steller sea lion protection measures. Instead, the annual allocation is available on January 1 and this sector is reliant on reallocations from other sectors to have directed fishing reopen later in the year once their annual allocation has been harvested.

In recent years, NMFS has reallocated most of the jig sector's A season allocation to the HAL/pot CV less than 60' sector during January to March. For most other sector's, reallocations occur from late August to December since some sectors often are projected not to reach their fall allocations (B season for the BSAI HAL and pot sectors and C season for BSAI trawl sectors). Starting late August, more information becomes available on amounts of remaining Pacific cod in each sector and which sectors may be able to use more Pacific cod before the end of the fishing year.

Although there are regulations that allow for reallocations of projected unharvested Pacific cod between most sectors or allocations in the BSAI, there are some years when the total catch is under the total TAC at the end of the year. In the fall, for some sectors or allocations, fishing effort may decrease or stop for several reasons. These reasons include, but are not limited to; poor weather, low catch rates, directed fishing closures due to attainment of prohibited species catch limits, low Pacific cod prices, high fuel prices, vessel breakdowns or maintenance, or closure of directed fishing for all non-CDQ Pacific cod sectors in the BS subarea or AI subarea. These factors can be difficult to predict when NMFS considers whether to make Pacific cod reallocations.

NMFS strives to reallocate projected amounts of unharvested Pacific cod to sectors that may be able to harvest these amounts; however, the decision to reallocate these amounts are complex and factor in many considerations. The primary consideration is not to reallocate Pacific cod from a sector that may have the capacity to catch their allocation. This consideration means NMFS must first determine a sector's remaining Pacific cod apportionment and the capacity for the sector to catch the remaining amount. This requires communication with vessel operators and processors. If any vessel operator or processor indicates that they will remain active or become active in the fishery before the end of the year, NMFS will tend to be more conservative in leaving amounts of Pacific cod available for that sector. As a result, Pacific cod sometimes remains uncaught at the end of the year because these vessels either do not actually participate or their actual catch rates are insufficient to catch a sector's remaining Pacific cod. Additionally, NMFS considers that catch data may change over time. To prevent exceeding TAC or ABC, NMFS typically leaves small amounts of TAC as a buffer to account for changes that may occur when catch data changes, which may occur for a variety of reasons.

In recent years, the BSAI Pacific cod TAC has decreased and therefore less Pacific cod TAC is remaining for the sectors that have historically provided reallocated Pacific cod. As result, NMFS has to be more conservative in completing reallocations. The sectors that have provided relatively consistent Pacific cod for reallocations are the jig gear, HAL CV $\geq 60'$, pot CVs $\geq 60'$, trawl CVs, and AFA trawl C/Ps.

Examples of considerations for fall reallocations include:

- Jig sector - determine the jig sector's plans for Pacific cod and how much seasonal allocation may be reallocated to the HAL/pot less than 60' sector.
- HAL CV \geq 60' - For many years there has been little to no Pacific cod directed fishing by this sector and usually all the remaining Pacific cod is reallocated to the HAL/pot CV less than 60' sector.
- Pot CVs \geq 60' - In most years from 2008 to 2017, there was significant amounts of projected unharvested Pacific cod from this sector that was reallocated to the HAL/pot less than 60' sector and other sectors (mostly pot C/Ps). In recent years, the projected unused Pacific cod amounts have decreased.
- Trawl CV and AFA trawl C/P sectors – depending on the amount of TAC remaining near the closure date of November 1, NMFS determines if the trawl CV sector and AFA C/P sector will have remaining C season Pacific cod TAC and what sectors may be able to use the projected unharvested TAC. In 2020, Pacific cod overages by the AFA C/Ps were covered by trawl CV reallocations.

Table 2-4, Table 2-5, and Table 2-6 were prepared to show annual reallocation amounts of BSAI Pacific cod by sector and the proportion of reallocations by sector during the 2004 through 2020. These tables show annual initial allocation, final allocation, reallocations, all in metric tons, and final allocation as a percent of initial allocation and annual percent of total reallocation for each sector. Table 2-4 are those sectors that annually were initially allocated BSAI Pacific cod during the 2004 through 2020 period that was all or partially reallocated to other sectors later in the year. These sectors include trawl CV, pot CV \geq 60', jig, and HAL CV \geq 60'. Of these four sectors, the trawl CV sector on average had the largest portion of total BSAI Pacific cod that was reallocated at 43 percent of the all the Pacific cod reallocated from 2004 through 2019. Next was the jig sector at 27 percent, the pot CV \geq 60' at 19 percent, and the HAL CV \geq 60' at 3 percent of all the Pacific cod reallocated from 2004 through 2019. The trawl C/P sector shown in Table 2-6 also averaged 26 percent of the total reallocation from 2004 through 2007, but once Amendment 80 was implemented in 2008, both the Amendment 80 sector and the AFA C/P sector, which make up the trawl C/P sector, were on average net receivers of reallocated BSAI Pacific cod. Table 2-5 is composed of sectors that were, on average, net receivers of reallocated BSAI Pacific cod during the 2004 through 2020 years. The HAL/pot CV less than 60' sector on average received the largest share at 40 percent of the BSAI Pacific cod reallocated during the 2004 through 2020 years followed by the HAL C/P sector at 36 percent, and the pot C/P sector at 8 percent.

Table 2-4 Initial allocation, final allocation, reallocations, final allocation as a percent of initial allocation, and annual percent of total reallocation for the trawl CV, pot CV ≥ 60', jig, and HAL CV ≥ 60' sectors from 2004 through 2020

Year	Trawl CV					Pot CV ≥ 60					Jig					HAL CV ≥ 60				
	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation
2004	46,844	40,717	-6,127	87%	-33%	15,174	11,735	-3,439	77%	-19%	3,987	442	-3,545	11%	-19%	303	303	0	100%	0%
2005	44,779	35,847	-8,932	80%	-38%	14,502	12,828	-1,674	88%	-7%	3,811	166	-3,645	4%	-15%	290	230	-60	79%	0%
2006	41,251	33,824	-7,427	82%	-46%	13,354	13,880	526	104%	3%	3,510	214	-3,296	6%	-20%	267	267	0	100%	0%
2007	37,110	34,110	-3,000	92%	-50%	12,006	12,129	123	101%	2%	3,158	126	-3,032	4%	-50%	240	240	0	100%	0%
2008	33,692	30,842	-2,850	92%	-44%	12,737	11,422	-1,315	90%	-20%	2,134	180	-1,954	8%	-30%	303	0	-303	0%	-5%
2009	34,841	29,740	-5,101	85%	-35%	13,173	6,373	-6,800	48%	-47%	2,207	25	-2,182	1%	-15%	314	2	-312	1%	-2%
2010	33,309	28,175	-5,134	85%	-63%	12,591	11,576	-1,015	92%	-12%	2,110	350	-1,760	17%	-21%	300	1	-299	0%	-4%
2011	44,987	39,897	-5,090	89%	-65%	17,030	17,030	0	100%	0%	2,850	510	-2,340	18%	-30%	405	15	-390	4%	-5%
2012	51,509	47,749	-3,760	93%	-28%	19,509	13,209	-6,300	68%	-47%	3,263	463	-2,800	14%	-21%	465	30	-435	6%	-3%
2013	51,312	43,812	-7,500	85%	-44%	19,434	13,434	-6,000	69%	-35%	3,251	51	-3,200	2%	-19%	463	13	-450	3%	-3%
2014	50,107	43,107	-7,000	86%	-47%	18,976	14,476	-4,500	76%	-30%	3,174	101	-3,073	3%	-20%	452	25	-427	6%	-3%
2015	49,224	37,854	-11,370	77%	-50%	18,641	11,891	-6,750	64%	-30%	3,118	100	-3,018	3%	-13%	444	20	-424	5%	-2%
2016	49,638	45,138	-4,500	91%	-28%	18,798	12,098	-6,700	64%	-42%	3,144	94	-3,050	3%	-19%	448	0	-448	0%	-3%
2017	47,246	44,163	-3,083	93%	-29%	17,889	13,889	-4,000	78%	-37%	2,993	13	-2,980	0%	-28%	426	0	-426	0%	-4%
2018	40,227	38,027	-2,200	95%	-43%	15,235	15,235	0	100%	0%	2,549	149	-2,400	6%	-47%	363	0	-363	0%	-7%
2019	35,660	31,690	-3,970	89%	-57%	13,499	13,499	0	100%	0%	2,259	159	-2,100	7%	-30%	321	0	-321	0%	-5%
2020	30,707	29,693	-1,014	97%	-32%	11,616	11,616	0	100%	0%	1,945	18	-1,927	1%	-60%	277	3	-274	1%	-9%
Average	40,690	37,317	-5,180	88%	-43%	15,539	12,725	-2,990	84%	-19%	2,910	186	-2,894	6%	-27%	358	68	-308	24%	-3%

Source: NMFS; file name is Annual BSAI cod reallocations 2004_2019

Table 2-5 Initial allocation, final allocation, reallocations, final allocation as a percent of initial allocation, and annual percent of total reallocation for the HAL C/P, HAL/pot CV < 60', and pot C/P sectors from 2004 through 2020

Year	HAL C/P					HAL/Pot CV < 60					Pot C/P				
	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation
2004	80,930	97,795	16,865	121%	91%	1,416	2,961	1,545	209%	8%	3,338	3,452	114	103%	1%
2005	77,344	99,519	22,175	129%	94%	1,354	2,601	1,247	192%	5%	3,190	3,352	162	105%	1%
2006	71,218	84,709	13,491	119%	84%	1,246	3,242	1,996	260%	12%	2,938	3,053	115	104%	1%
2007	64,030	68,105	4,075	106%	68%	1,121	2,928	1,807	261%	30%	2,641	2,668	27	101%	0%
2008	73,844	76,074	2,230	103%	35%	3,033	5,210	2,177	172%	34%	2,274	3,089	815	136%	13%
2009	76,375	84,075	7,700	110%	53%	3,137	4,434	1,297	141%	9%	2,352	3,550	1,198	151%	8%
2010	73,000	73,190	190	100%	2%	2,998	5,509	2,511	184%	31%	2,248	3,350	1,102	149%	13%
2011	98,733	99,853	1,120	101%	14%	4,055	9,005	4,950	222%	63%	3,041	3,041	0	100%	0%
2012	113,106	118,106	5,000	104%	38%	4,645	8,880	4,235	191%	32%	3,484	4,284	800	123%	6%
2013	112,671	115,171	2,500	102%	15%	4,627	9,177	4,550	198%	27%	3,470	6,070	2,600	175%	15%
2014	110,016	111,516	1,500	101%	10%	4,518	12,018	7,500	266%	50%	3,389	5,889	2,500	174%	17%
2015	108,071	118,871	10,800	110%	47%	4,438	10,630	6,192	240%	27%	3,329	6,829	3,500	205%	15%
2016	108,983	114,283	5,300	105%	33%	4,476	10,674	6,198	238%	39%	3,357	6,607	3,250	197%	20%
2017	103,712	107,589	3,877	104%	36%	4,259	9,271	5,012	218%	47%	3,194	4,999	1,805	157%	17%
2018	88,324	88,324	0	100%	0%	3,627	8,748	5,121	241%	100%	2,720	2,720	0	100%	0%
2019	78,260	78,260	0	100%	0%	3,214	9,800	6,586	305%	95%	2,410	2,745	335	114%	5%
2020	67,346	67,346	0	100%	0%	2,766	4,967	2,201	180%	68%	2,074	2,074	0	100%	0%
Average	88,586	94,282	5,695	107%	36%	3,148	6,888	3,831	219%	40%	2,909	3,987	1,078	135%	8%

Source: NMFS; file name is Annual BSAI cod reallocations 2004_2019

Table 2-6 Initial allocation, final allocation, reallocations, final allocation as a percent of initial allocation, and annual percent of total reallocation for the trawl C/P, AFA C/P, and Amendment 80 sectors from 2004 through 2020

Year	Trawl C/P					AFA C/P					AM80				
	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation	Annual % of total reallocation
2004	46,844	41,431	-5,413	88%	-29%	N/A					N/A				
2005	44,779	35,506	-9,273	79%	-39%										
2006	41,251	35,845	-5,406	87%	-34%										
2007	37,110	37,110	0	100%	0%										
2008						3,506	4,706	1,200	134%	19%	20,429	20,429	0	100%	0%
2009						3,626	4,826	1,200	133%	8%	21,125	24,125	3,000	114%	21%
2010						3,467	4,041	574	117%	7%	20,197	24,028	3,831	119%	47%
2011						4,682	6,432	1,750	137%	22%	27,277	27,277	0	100%	0%
2012						5,361	6,621	1,260	124%	9%	31,232	33,232	2,000	106%	15%
2013			N/A			5,340	6,740	1,400	126%	8%	31,112	37,212	6,100	120%	36%
2014						5,215	5,465	250	105%	2%	30,381	33,631	3,250	111%	22%
2015						5,123	3,823	-1,800	75%	-8%	29,846	32,216	2,370	108%	10%
2016						5,166	3,816	-1,350	74%	-8%	30,097	31,397	1,300	104%	8%
2017						4,917	4,712	-205	96%	-2%	28,647	28,647	0	100%	0%
2018						4,186	4,028	-158	96%	-3%	24,391	24,391	0	100%	0%
2019						3,711	3,181	-530	86%	-8%	21,622	21,622	0	100%	0%
2020						3,196	4,210	1,014	132%	32%	18,619	18,619	0	100%	0%
Average	42,496	37,473	-5,023	89%	-26%	4,423	4,815	354	110%	6%	25,767	27,448	1,681	106%	12%

Source: NMFS; file name is Annual BSAI cod reallocations 2004_2019

Table 2-7 provides information on the number of directed fishing days by season and total catch of BSAI Pacific cod for the trawl CV sector relative to BSAI Pacific cod allocations along with reallocations of BSAI Pacific cod and remaining allocations by season from 2004 through 2019. As a reminder, seasonal allowances for trawl gear, including the trawl CV sector, is 74 percent for the A season, 11 percent for the B season, and 15 percent for the C season as regulated by the Steller sea lion protection measures.

Looking at 2004 as an example, the A season was open for 62 days and the allocation was 32,791 mt with a total catch for the season of 34,801 mt, which exceeded the seasonal allocation by 2,010 mt. The B season was open for 3 days and the allocation was 4,684 mt with a total catch of 2,547 mt, leaving 2,137 mt unharvested. The C season was open the entire regulation period (144 days) with an initial allocation of 9,369 mt but 6,127 mt was reallocated to other sectors leaving a revised allocation of 3,242 mt while the total catch for the season was 3,749 mt which resulted in total catch exceeding the revised allocation by 507 mt. Overall, the trawl CV sector in 2004 exceeded its revised initial allocation for the year by 381 mt. However, in 2004 there was unused Pacific cod in other sectors that covered this overage, but NMFS did not do a final reallocation to cover overages for this other sectors.

As noted in Table 2-7, seasonal overages and under harvests often occur in the A season. Reasons for overages and under harvests include incidental catch after closure date was higher or lower than projected, catch rates were higher or lower than projected which resulted in season closure a day or two too late or early, severe weather can slow some vessels but not others which changes the projected catch rates, announced fishery closures results in vessels leaving the fishery before the closure date, and vessels breaking down thus leaving the fishery. For the B season overages and under harvests, in addition to reasons noted above for the A season, catch rates are hard to predict when the A season closes before the middle of March since no vessels have been targeting Pacific cod before the B season opens or even which vessels will participate in the B season.

Overall, after adjusting for reallocations, the trawl CV sector tends to finish each year with a small amount of BSAI Pacific cod unharvested. Reallocations of trawl CV Pacific occurred during the C season except for 2011 when 1,300 mt of Pacific cod was reallocated in May. However, there were years when NMFS subtracted Pacific cod from the A season or the B season allocation but was not reallocated until the C season (2015, 2016, and 2019).

Table 2-7 Trawl CV seasonal BSAI Pacific cod directed fishing days, initial allocation, reallocation, total catch, seasonal allocation revised after reallocation, and remaining season allocation after deducting total catch from 2004 through 2019

Year	Season	Days season was open for directed fishing	Initial allocation (mt)	Reallocation (mt)	Total catch (mt)	Seasonal allocation revised after reallocations (mt)	Remaining season allocation after deducting sector catch (mt)
2004	A-season	62	32,791	-	34,801	32,791	(2,010)
	B-season	3	4,684	-	2,547	4,684	2,137
	C-season	144	9,369	(6,127)	3,749	3,242	(507)
	After C-season (Incidental catch)		-	-	0	-	(0)
	Total	209	46,844	(6,127)	41,098	40,717	(381)
2005	A-season	55	31,345	-	31,232	31,345	113
	B-season	71	4,478	-	3,091	4,478	1,387
	C-season	69	8,956	(8,932)	1,425	24	(1,401)
	After C-season (Incidental catch)		-	-	-	-	-
	Total	195	44,779	(8,932)	35,748	35,847	99
2006	A-season	47	28,634	-	27,989	28,634	645
	B-season	5	4,091	-	4,245	4,091	(154)
	C-season	43	8,181	(7,427)	1,406	754	(652)
	After C-season (Incidental catch)		-	-	0	-	-
	Total	95	40,906	(7,427)	33,640	33,479	(161)
2007	A-season	51	25,977	-	25,686	25,977	291
	B-season	8	3,711	-	4,448	3,711	(737)
	C-season	111	7,422	(3,000)	1,755	4,422	2,667
	After C-season (Incidental catch)		-	-	0	-	(0)
	Total	170	37,110	(3,000)	31,890	34,110	2,220
2008	A-season	45	24,932	-	25,882	24,932	(950)
	B-season	3	3,706	-	3,419	3,706	287
	C-season	144	5,054	(2,850)	1,476	2,204	728
	After C-season (Incidental catch)		-	-	44	-	(44)
	Total	192	33,692	(2,850)	30,820	30,842	22
2009	A-season	60	25,782	-	25,020	25,782	762
	B-season	4	3,832	-	3,353	3,832	479
	C-season	144	5,226	(5,101)	1,250	125	(1,125)
	After C-season (Incidental catch)		-	-	-	-	-
	Total	208	34,840	(5,101)	29,623	29,739	116
2010	A-season	51	24,649	-	27,106	24,649	(2,457)
	B-season	0	3,664	-	212	3,664	3,452
	C-season	144	4,996	(5,134)	868	(138)	(1,006)
	After C-season (Incidental catch)		-	-	-	-	-
	Total	195	33,309	(5,134)	28,186	28,175	(11)

Table 2-7 Continued

Year	Season	Days season was open for directed fishing	Initial allocation (mt)	Reallocation (mt)	Total catch (mt)	Seasonal allocation revised after reallocations (mt)	Remaining season allocation after deducting sector catch (mt)
2011	A-season	65	33,290	-	34,136	33,290	(846)
	B-season	57	4,949	(1,300) ¹	2,235	3,649	1,414
	C-season	144	6,748	(3,790)	3,428	2,958	(470)
	After C-season (Incidental catch)		-	-	19	-	(19)
	Total	266	44,987	5,090	39,819	39,897	78
2012	A-season	42	38,117	-	37,321	38,117	796
	B-season	14	5,666	-	6,603	5,666	(937)
	C-season	144	7,726	(3,760)	2,602	3,966	1,364
	After C-season (Incidental catch)		-	-	2	-	(2)
	Total	200	51,509	(3,760)	46,528	47,749	1,221
2013	A-season	50	37,971	-	35,782	37,971	2,189
	B-season	71	5,644	-	4,718	5,644	926
	C-season	144	7,697	(7,500)	3,208	197	(3,011)
	After C-season (Incidental catch)		-	-	23	-	(23)
	Total	265	51,312	(7,500)	43,731	43,812	81
2014	A-season	55	37,079	-	35,842	37,079	1,237
	B-season	71	5,512	-	4,109	5,512	1,403
	C-season	144	7,516	(2,000)	2,083	5,516	3,433
	After C-season (Incidental catch)		-	-	52	-	(52)
	Total	270	50,107	(2,000)	42,086	48,107	6,021
2015	A-season	38	36,426	(2,800) ²	30,486	33,626	3,140
	B-season	71	5,415	(200) ³	1,718	5,215	3,497
	C-season	144	7,383	(3,870)	5,373	3,513	(1,860)
	After C-season (Incidental catch)		-	-	19	-	(19)
	Total	253	49,224	(6,870)	37,597	42,354	4,757
2016	A-season	48	36,732	(2,000) ⁴	37,963	34,732	(3,231)
	B-season	26	5,460	-	4,260	5,460	1,200
	C-season	144	7,446	(2,500)	2,753	4,946	2,193
	After C-season (Incidental catch)		-	-	-	-	-
	Total			(-4,500)	44,976	45,138	162
2017	A-season	34	34,962	-	37,556	34,962	(2,594)
	B-season	2	5,197	-	5,417	5,197	(220)
	C-season	144	7,087	(3,083)	1,163	4,004	2,841
	After C-season (Incidental catch)		-	-	4	-	(4)
	Total	180	47,246	(3,083)	44,140	44,163	23
2018	A-season	22	29,768	-	29,510	29,768	258
	B-season	2	4,425	-	7,009	4,425	(2,584)
	C-season	144	6,034	(2,200)	1,347	3,834	2,487
	After C-season (Incidental catch)		-	-	2	-	(2)
	Total	168	40,227	(2,200)	37,868	38,027	159
2019	A-season	12	26,388	(742) ⁵	25,623	25,646	23
	B-season	1	3,923	-	4,132	3,923	(209)
	C-season	144	5,349	(3,228)	1,856	2,121	265
	After C-season (Incidental catch)		-	-	20	-	(20)
	Total	157	35,660		31,632	31,690	58
2020	A-season ⁶	28	22,723	-	25,877	22,723	(3,154)
	B-season	0	3,378	-	1,815	3,378	1,563
	C-season	144	4,606	(1,014)	1,992	3,592	1,600
	After C-season (Incidental catch)		-	-	7	-	(7)
	Total	172	30,707	(1,014)	29,691	29,693	2

Source: NMFS; file name is BSAI Pacific cod trawl CV seasonal allocations

¹Subtracted from the B-season and reallocated in the B-season (May)²Subtracted from the A-season but reallocated in the C-season (September)³Subtracted from the B-season but reallocated in the C-season (September)⁴Subtracted from the A-season but reallocated in the C-season (October)⁵Subtracted from the A-season but reallocation in the C-season (August)⁶Voluntary stand down from Jan 23 to Feb 9, so A-season was 6 days of directed fishing

Table 2-8 shows reallocation amounts of BSAI Pacific cod from the trawl CV sector to other sectors and the percent of the trawl CVs reallocation relative to that sector's total reallocation for the year from 2004 through 2020. The largest portion of the reallocations from the trawl CV sector accrued to the HAL C/P sector at 41 percent followed by the Amendment 80 sector at 23 percent, HAL/pot CV less than 60 ft sector at 20 percent, AFA C/P sector at 11 percent, and the pot C/P sector at 6 percent. During the years the trawl CV sector reallocated Pacific cod, that reallocation contributed to 38 percent of the total reallocated Pacific cod for the HAL C/P sector, 94 percent of the Amendment 80 sector, 27 percent for the HAL/pot CV less than 60' sector, and 111 percent for the AFA C/P sector.²⁷ Except for the AFA C/P, all the trawl CV Pacific cod reallocated to other sectors was not later reallocated to another sector. As for the AFA C/P sector, there were two secondary reallocations. In 2010, 431 mt of initial reallocated trawl CV Pacific cod was later reallocated to the Amendment 80 limited access sector, and in 2015, 500 mt of initially reallocated Pacific cod from the trawl CV sector was also likely reallocated to the Amendment 80 sector.

Table 2-8 Reallocation of BSAI Pacific cod from the trawl CV sector to other sectors, 2004 through 2020

Year	Sectors receiving reallocated trawl CV Pacific cod (mt) and (%) of their total reallocation received											
	HAL/Pot CV < 60 ft		HAL C/P		AFA C/P		A80		Pot CV >= 60*		Pot C/P	
	mt	%	mt	%	mt	%	mt	%	mt	%	mt	%
2004		0%	7,000	42%					-873	-57%		0%
2005		0%	8,932	40%	AFA C/P combined with A80 and did not receive a reallocation					0%		0%
2006		0%	7,427	55%						0%		0%
2007		0%	3,000	74%						0%		0%
2008		0%	1,650	74%	1,200	100%		n/a		0%		0%
2009		0%	901	12%	1,200	100%	3,000	100%		0%		0%
2010	500	20%	190	100%	1,005	175%	3,400	89%	33	1%	6	1%
2011	2,590	52%	750	67%	1,750	100%		n/a		0%		n/a
2012	500	12%		0%	1,260	100%	2,000	100%		0%		0%
2013		0%		0%	1,400	100%	6,100	100%		0%		0%
2014	2,000	27%	1,500	100%	250	100%	3,250	100%		0%		0%
2015	3,500	57%	2,300	21%	500	-28%	2,370	100%		0%	2,700	77%
2016	2,000	32%		0%		0%	500	38%		0%	2,000	62%
2017		0%	2,732	70%		0%		n/a		0%	351	19%
2018	2,200	43%		n/a		0%		n/a		0%		n/a
2019	3,970	60%		n/a		0%		n/a		0%		0%
2020		0%		n/a	1,014	100%		n/a		0%		n/a
Total	17,260	27%	36,382	38%	9,579	111%	20,620	94%	-840	-1%	5,057	28%

Source: NMFS; file name is 2004 to 2020 Pacific cod reallocations from trawl CVs to other sectors and Annual BSAI cod reallocations 2004_2019(1)

* The trawl CV sector was reallocated 873 mt from the pot CV ≥ 60' sector in 2004.

2.8.4. 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. In the BS, the GHL fishery opens after the federal fishery (HAL/pot CV less than 60' sector) 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

²⁷ The AFA C/P sector for two years received a reallocation of Pacific cod from the trawl CV sector which was later reallocated to another sector thus the greater than 100 percent total reallocation for the AFA C/P sector.

GHL may not be reduced below 15 percent of the federal AI Pacific cod ABC. The 2019 GHL was fully harvested, so the 2020 AI GHL increased to 35% (7,210 mt); however due to the maximum regulatory GHL for this fishery the 2020 season GHL was 6,804 mt. At the BOF December 2019 meeting, the BOF made the AI state waters fishery an exclusive fishery for all gear types. This became effective during the 2020 season.

While all gears can be 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. Table 2-9 summarizes the state AI GHL participation, catch, and value for the years 2006 through 2020. Additional information on the AI GHL fishery can be found in the AI Pacific Cod Harvest Set-Aside RIR that addressed issues with Amendment 113 (NPFMC, 2018).

Table 2-9 Aleutian Islands state-waters Pacific cod fishery guideline harvest level and harvest from 2006-2019

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
2019		6,386	h	6,198	18		155	\$0.38	\$5.08
2020		6,804	h	6,762	15		187	\$0.35	\$5.12

Source: ADF&G

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.

In October 2013, the BOF created a state-waters Pacific cod fishery management plan for the Bering Sea near Unalaska/Dutch Harbor.²⁸ A summary of the regulations is provided in Table 2-10. The DHS GHL

²⁸ https://www.psmfc.org/tsc-drafts/2017/ADFG_2017_AK_TSC_Alaska_FINAL.pdf

fishery for Pacific cod occurred in State waters between 164 degrees and 167 degrees west longitude in 2014 and 2015. From 2016-2018 the area was expanded to include 164 degrees to 170 degrees west longitude. At the BOF October 2018 meeting it again expanded the area to include waters between 162.30 degrees and 170 degrees 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 less than 60 ft pot/HAL sector's closure and may close and re-open as needed to coordinate with federal fishery openings.²⁹ The fishery was not opened to jig gear until 2019 because the federal jig season typically occurs year-round, so there has historically been no benefit to having a separate jig gear GHL state-waters fishery.

The DHS state-waters Pacific cod fishery is in an exclusive registration area for pot gear but not jig gear. This means 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 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 non-exclusive areas and one exclusive area for Pacific cod if they are registered to take Pacific cod with a mechanical jigging machine in the DHS. However, they cannot participate in a super-exclusive fishery if they participate in the DHS.

Table 2-10 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	<ul style="list-style-type: none"> 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 170 west longitude 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> May 1 opens a 100,000 lb. fishery 	<ul style="list-style-type: none"> When the GHL is taken or at the regulatory season closure date (December 31) whichever occurs first. 	<ul style="list-style-type: none"> 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>

²⁹ The 2018 season opened on January 30 and was closed on March 1 because the GHL was projected to be taken. For 2019, the season opened on January 19 and closed on February 24, while the 2020 season opened January 26 and closed on March 12.

The DHS fishery was first opened to pot fishing in 2014. State regulations provided the pot fishery with a GHL of three percent of the BSAI Pacific cod ABC, and the Federal TAC is set taken into account the GHL, so that the GHL, plus the TAC does not exceed the ABC. Starting in 2016, the BOF 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 eight percent of the BS ABC starting in the 2019 fishery and then nine percent in 2020, and 10 percent in 2021. 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 2-11. All the catch is delivered to shoreside plants and inshore floating processors since it is harvested by pot vessels that are less than or equal to 58 ft. A total of 37 pot gear vessels participated in the fishery in 2019. This increased to 40 pot gear vessels in 2020.

Table 2-11 Pacific cod harvest (lbs.) with pot gear in the State of Alaska DHS Guideline Harvest Level Pacific cod fishery, 2014 through 2020

Year	GHL		Harvest		% harvested
	Pounds	mt	Pounds	mt	
2014	17,863,874	8,103	17,666,510	8,013	98.90%
2015	18,029,404	8,178	17,636,103	8,000	97.80%
2016	35,979,072	16,320	35,519,920	16,112	98.70%
2017	33,721,562	15,296	33,247,414	15,081	98.60%
2018	28,360,000	12,864	29,055,603	13,180	102.50%
2019	31,922,600	14,480	32,345,033	14,672	101.30%
2020	30,927,000	14,028	30,081,227	13,645	97.30%

Source: ADF&G

In 2019, the BOF also created a 100,000 lb. (45 mt) GHL jig fishery for Pacific cod in the DHS. As noted in Table 2-12, one vessel participated in the fishery, which opened May 1, 2019 and closed on June 6, 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. Harvest is confidential for the 2019 DHS jig fishery; however, the GHL was achieved.

Table 2-12 Dutch Harbor Subdistrict state-waters Pacific cod jig fisher harvest, effort, value, and season dates, 2019

Year	GHL (lbs.)	Harvest (lbs.)	Vessels	Landings	Average price per pound	Fishery value	Season dates		Season duration (days)
							Opened	Closed	
2019	100,000	CF	1	5	CF	CF	5/1/2019	6/6/2019	37

Source: ADF&G

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 setting the Federal Bering Sea TAC to account for the GHL so that the GHL plus the TAC does not exceed the ABC. As the GHL percent increases the Federal TAC decreases. This impacts all the Federal Bering Sea Pacific cod allocations including the trawl CV TAC.³⁰ 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

³⁰ 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.

percent allocation, relative to 2018. In poundage terms, the 2018 (6.4 percent) GHL was 28.36 million lbs. (12,864 mt).

2.8.5. License Limitation Program

As of January 1, 2000, a Federal LLP license is required for vessels participating in directed fishing for LLP groundfish species in the BSAI (>32 feet) or GOA (>26 feet).³¹ 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 50 CFR §679.2, and prohibitions are at 50 CFR §679.7.

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 32 feet in Length Overall (LOA) are exempt from the LLP in the BSAI. There are currently no CVs that are 32 feet or less fishing with trawl gear in the BSAI Pacific cod fishery, so that exemption does not impact vessels managed under the proposed action.

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. This requirement 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.

Note that the AFA numbers in the matrix do not denote LLP license endorsements, but rather the number of LLP licenses on AFA vessels.

Table 2-13 shows a matrix of the endorsements associated with the BSAI LLP licenses that are current as of June 10, 2020. 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 114 LLP licenses with a BS trawl CV endorsement. Of those 114 LLP licenses, 42 also have an AI trawl CV endorsement. Because there are 43 trawl CV endorsements for the AI, one LLP license only has an AI trawl CV endorsement. None of the LLP licenses with a trawl CV endorsement for the BS or AI have a pot gear endorsement. It should be noted that LLP licenses with a C/P endorsement may have been used to act as a CV. The table also 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 Hook-and-Line (HAL) endorsement. Note that the AFA numbers in the matrix do not denote LLP license endorsements, but rather the number of LLP licenses on AFA.

³¹ The NMFS Alaska Region website provides a summary of the LLP: <https://alaskafisheries.noaa.gov/fisheries/llp>

Table 2-13 Number of LLP licenses issued for the BSAI by endorsement (current as of June 10, 2020)

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	27	29	41	102	1	135

Source file: LLPs_Endo(6-10-20)

2.8.6. Overview of AI Pacific Cod Set-aside for AI 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 because the BS Trawl CV Limitation was developed for use by trawl CVs for harvest and delivery of AI Pacific cod to AI shoreplants.

To address the identified AI Pacific cod set-aside regulatory issue, the Council during its April 2018 meeting 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 it exceeded the NMFS's statutory authority under the MSA and the APA. 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 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 feet pot CVs participated in the State AI GHL fishery and delivered to an AI shoreplant. Some greater than or equal to 60 feet 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 ft. On January 23, 2018, BSAI Pacific cod directed fishing closed for CV less than 60 feet 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 feet HAL/pot sector.³²

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 owned by persons from communities in the Western GOA and Central GOA areas that rely primarily on GOA fisheries. 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

³² NMFS did reapportion 1,400 mt from the jig sector to the <60 feet HAL/pot sector on February 6th, but the <60 feet HAL/pot sector in federal waters may not reopen until September 1st.

the timing of the request, the AI shoreplant could not take deliveries from these CVs. The company instead decided to have some of its trawl CVs AI Pacific cod delivered to Unalaska/Dutch Harbor.

To assist the AI shoreplant in spacing out deliveries to reduce wait times at the AI shoreplant, the trawl CVs initiated self-imposed trip limits and a one-day stand-down after a delivery. Trawl CVs set the trip limit at 400,000 lbs. for the larger CVs and 100,000 lbs. for smaller CVs. These self-imposed trip limits were abandoned after NMFS announced a scheduled BSAI A season trawl CV closure for March 4, 2018, which then 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 a closure of the trawl CV sector in the BSAI before delivery of the entire 5,000 mt AI set-aside. That meant the only CV sector that remained open³³ 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 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.³⁴

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 because 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 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. CVs 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/HAL fishery beginning on January 1, and deliveries were made in both the BS and AI. The CV less than 60 feet pot/HAL 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 A season sector TAC of 26,388 mt. CVs 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, 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

³³ 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.

³⁴ Golden Harvest Alaska Seafood, LLC in a public comment letter to the Council in April 2018 noted that "landings from the Federal fishery were 4,010 mt; or about 80% of the AI CV Harvest Set Aside."

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. Next, the CV trawl Pacific cod B season opened on April 1 and closed on April 2 for a 24-hour fishery. CVs participated in both the BS and AI and harvest was landed in both areas. Pacific cod harvest landed to the AI shoreplant is confidential.

The 2020 A season Pacific cod fisheries for the CV greater than or equal to 60 feet pot gear sector and the CV less than 60 feet pot/HAL sector opened on January 1. Vessels from both sectors participated in both the BS and AI areas. The CV greater than or equal to 60 feet pot gear sector closed on January 15 and the CV less than 60 feet pot/HAL sector closed on January 18. The closures for both sectors applied to both the BS and the AI.

The 2020 BSAI CV trawl sector for Pacific cod opened on January 20 with an overall A season TAC of 22,723 mt. In 2020, Amendment 113, which included regulations regarding the AI CV harvest set-aside for delivery to AI shoreplants, was no longer in effect. As a result, there was no longer a stipulation that 5,000 mt had to be harvested and delivered in the AI. Although fishing was open in both the AI and the BS, in 2020, no harvest occurred in the AI. After two days of fishing, the fleet organized a voluntary stand down due to high halibut PSC rates. No fishing occurred again until February 9. The A season closed in both the AI and BS areas on February 16, and 51 CVs participated. Although the fishery was open for 28 days, fishing only occurred for 10 days due to the voluntary stand down for halibut PSC. After the completion of A season it was determined there was not enough TAC available to prosecute a B season fishery and the fishery did not open.

2.8.7. Sectors Impacted

The following is an overview of each of the different sectors that could be impacted by the proposed focusing on the BSAI Pacific cod fishery from 2004 through 2019. These sectors include the trawl CV, the AFA trawl C/P and Amendment 80 (some of the C/Ps from these two sectors could be eligible to receive Pacific cod deliveries from trawl CVs), and the HAL/pot less than 60 ft (this sector is the primary benefactor of reallocations of C season trawl CV Pacific cod during the fall fishery). This section also includes a profile of shoreside processors.

2.8.7.1. Trawl CV

The trawl CV sector impacted by those proposed catch share program includes all trawl CVs that 1) are issued an AFA permit for eligibility to participate in the directed BSAI pollock fishery and 2) are not issued an AFA permit. Both trawl CV groups share the 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 smaller vessels deliver their catch to motherships or C/Ps. The AFA trawl CVs have a sideboard limit of 86.09 percent of the seasonal allocations of BSAI trawl CV Pacific cod at 50 CFR §679.64(b)(3)(ii). The Pacific cod harvest limits, like other groundfish and PSC limits for AFA CVs, are managed using directed fishing closures according to the procedures set out at 50 CFR §679.20(d)(1)(iv), 50 CFR §679.21(d)(8), and 50 CFR §679.21(e)(3)(v). There are nine AFA trawl CVs that are exempt from the AFA CV BSAI 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 AFA trawl CVs is managed through private 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 less than 60 ft participate in the

sector. The non-AFA trawl CVs harvest BSAI Pacific cod, the GOA groundfish fishery, and halibut IFQ using longline gear and State of Alaska commercial seine fisheries for salmon.

Table 2-13 shows that as of June 2020, 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 Table 2-15, the sector on average harvested 83 percent of its BSAI Pacific cod allocation from 2004 through 2007, and 88 percent of their allocation since implementation of Amendment 85 in 2008. The sector's remaining unharvested BSAI Pacific cod was reallocated in nearly every case during the fall to other sectors. The reallocation has ranged from a low of 1,014 mt in 2020 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 77 in 2004. 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 95 in 2020 to high of 114 in 2004. 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 noted in Table 2-171, the AI fishery has declined from its peak in 2009 as a percent of total non-CDQ BSAI Pacific cod catch for the sector. The number of trawl CVs during 2004 through 2020 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.

Annual estimates of the trawl CV sector's gross ex-vessel value for Pacific cod are provided in Table 2-16 in addition to gross ex-vessel value of BSAI Pacific cod as a percent of total gross revenue, gross first wholesale value for BSAI Pacific cod, and combined gross revenue of State and Federal fisheries. The ex-vessel 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 2004 to 2019. 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 2-14 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, 2015, and 2021 the trawl CV sector has been restricted to MRA only retention status (directed fishing closures) at some point during the A season every year from 2004 through 2020. The A season fishery in the BS has ranged from 12 days in 2019 to 71 days in 2021. In 2014 and 2015, the fishery closed only in the AI before 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. In 2020, after two days of fishing, the fleet organized a voluntary stand down due to high halibut PSC rates. No fishing occurred again until February 9 and the A season closed on February 16. The B season is typically only open from one week to a few

days in recent years. The C season is often open until Nov 1. In 2021, due to Coronavirus disease (COVID-19) pandemic conditions, the trawl CV fleet organized a voluntary catch share agreement which was effective at slowing the fishery and allowed the A season to remain open until April 1. The trawl CV fleet also developed a B season voluntary catch share agreement which lengthened the B season fishery.

Table 2-14 Closure and opening dates (days opened) for the BSAI Pacific cod trawl CV sector, 2004 through B season 2021

Year	A-Season: 20 Jan - Apr 1	B-Season: 1 Apr - 10 Jun	C-Season: 10 Jun - Nov 1
2004	Cl 23-Mar (62)	Cl 4-Apr (3)	Cl-Nov 1, REG (144)
2005	Cl 13-Mar (52) Op 29-Mar (3)	Cl 10-Jun, REG (71)	Cl 18-Aug, HAL (69)
2006	Cl 8-Mar (47)	Cl 6-Apr (5)	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)	Cl-Nov 1, REG (144)
2009	Cl 21-Mar (60)	Cl 5-Apr (4)	Cl-Nov 1, REG (144)
2010	Cl 12-Mar (51)	Cl 1-Apr (0)	Cl-Nov 1, REG (144)
2011	Cl 26-Mar (65)	Cl 4-Apr (3)	Cl-Nov 1, REG (144)
2012	Cl 29-Feb (39) Op 29-Mar (3)	Cl 15-Apr (14)	Cl-Nov 1, REG (144)
2013	Cl 11-Mar (50)	Cl 10-Jun, REG (71)	Cl-Nov 1, REG (144)
2014	Cl 16-Mar (55)	Cl 10-Jun, REG (71)	Cl-Nov 1, REG (144)
2015	Cl 27-Feb (38)	Cl 10-Jun, REG (71)	Cl-Nov 1, REG (144)
2016	Cl 9-Mar (48)	Cl 4-Apr (3)	Cl-Nov 1, REG (144)
2017	Cl 23-Feb (34)	Cl Apr 3 (2)	Cl-Nov 1, REG (144)
2018	Cl 11-Feb (22-BS), Cl 4-Mar (43-BSAI)	Cl Apr 3 (2)	Cl-Nov 1, REG (144)
2019	Cl 1-Feb (12 BS)	Cl Apr 2 (1)	Cl-Nov 1, REG (144)
2020	Cl 16-Feb (28)	Cl 1-Apr (0)	Cl-Nov 1, REG (144)
2021	Cl 1-Apr (71)	Cl 12-Apr (11)	

Source file: Season length table

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 2-17 are PSC amounts for halibut, red king crab (Zone 1), *C. bairdi* (Zones 1 & 2), *C. opilio* (*C. opilio* Bycatch Limitation Zone (COBLZ)), Chinook salmon, and non-Chinook by the trawl CV sector while targeting BSAI Pacific cod from 2004 through 2021. Most PSC levels since implementation of Amendment 85 in 2008 have declined. Halibut PSC has declined from a high of 596 mt in 2005 to a low of 141 mt in 2020. Crab PSC has also declined since implementation of Amendment 85 as seen in Table 2-17. Salmon PSC while targeting Pacific cod is also noted in Table 2-17. 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 Table 2-18 depicts the total number of deliveries of targeted BSAI Pacific cod the trawl CV sector made and the total number of delivery ports from 2004 through 2020. Overall, the total number of delivery ports, including floating processors, has ranged from a six to eight ports. The total number of deliveries has fluctuated between 263 deliveries in 2020 to 667 deliveries in 2012. Floating processors had the largest number of deliveries annually by the trawl CV sector followed by Akutan, C/Ps acting as motherships, Unalaska/Dutch Harbor, and Adak.

Detailed fishing community and fishery engagement information is provided in Section 2.8.9.1, but in summary, Table 2-47 in that section notes a gradual concentration of reported trawl CV ownership by community within Alaska. From 2004-2010, ownership included five different Alaska communities; from 2011-2019, Alaska ownership was exclusive to Kodiak. This shift could be in part due to some consolidation in the AFA trawl CV fleet and the non-AFA trawl CV fleet. Alaska communities reported as the ownership address of trawl CVs before 2011 but not in later years include Anchorage/Girdwood, Unalaska/Dutch Harbor, Sand Point, and Petersburg. While Alaska CV ownership was consolidating toward Kodiak, ownership outside of Alaska was consolidating toward the Seattle MSA. Declines in ownership were seen in all other communities or aggregates of communities outside of Alaska over the 2004-2019 period, as seen in that same table.

Overall, the sector's vessel counts and harvest performance before 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 the pace of the A season fishery (see Table 2-14) 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 and a 28-day fishery in 2020, 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 period, to a high of 30.5 percent in 2019 (NPFMC, 2019). Both AFA and non-AFA trawl CVs have contributed to the growth of offshore³⁵ deliveries by the sector. Also, the addition of the AI Pacific cod set-aside for AI shoreplants (Amendment 113) restricted 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, the trawl CV sector harvested its entire A season allocation in the BS, which prevented the trawl CVs from targeting AI Pacific cod during their A season which negatively impacted AI shoreplants that rely on the trawl CV sector for deliveries during this crucial period of the fishing year.

³⁵ Offshore deliveries refer to C/Ps acting as motherships.

Table 2-15 BSAI trawl CV Pacific cod allocation and catch data from 2004 through 2020

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	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
Trawl CV	2004	46844	40717	-6,127	87%	77	114	37,207	40,817	87%	100%	-	-	70	5
	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	24,885	28,022	84%	99%	2,064	13	*	2
	2011	44,987	39,897	-5,090	89%	50	104	34,599	39,723	88%	100%	*	2	*	2
	2012	51,509	47,749	-3,760	93%	55	105	39,919	46,373	90%	97%	2,351	14	1,376	3
	2013	51,312	43,812	-7,500	85%	53	101	38,979	43,609	85%	100%	1,117	5	99	3
	2014	50,107	43,107	-7,000	86%	48	98	38,743	41,923	84%	97%	1,049	4	113	3
	2015	49,224	37,854	-11,370	77%	48	99	31,583	37,496	76%	99%	*	2	72	4
	2016	49,638	45,138	-4,500	91%	56	101	40,846	44,850	90%	99%	871	6	814	5
	2017	47,246	44,163	-3,083	93%	61	102	37,443	43,587	92%	99%	-	-	1,148	5
	2018	40,227	38,027	-2,200	95%	65	105	33,709	37,690	94%	99%	887	6	729	5
	2019	35,660	31,690	-3,970	89%	61	100	26,329	31,479	88%	99%	553	4	1,196	5
	2020	30,707	29,693	-1,014	97%	51	95	21,515	29,541	96%	99%	1,327	6	271	5

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

* Denoted confidential data

Table 2-16 BSAI trawl CV Pacific cod ex-vessel price, BSAI Pacific cod gross ex-vessel value (millions \$), BSAI Pacific cod gross ex-vessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million \$), and total gross revenue (millions \$) from 2004 through 2019

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 \$)
2004	0.21	19	8%	49	230
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
2018	0.33	27	9%	84	310
2019	0.31	21	8%	56	249

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Table 2-17 Halibut and crab PSC along with salmon catch for the trawl CV sector while targeting BSAI Pacific cod from 2004 through 2021

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	440	596	586	426	286	181	249	238	421	303	281	237	294	221	202	354	136	50
Red King crab (Zone 1)	0	0	0	0	1,165	0	0	1,971	0	0	85	51	547	280	199	466	175	25
C. opilio (COBLZ)	86	59	12	89	349	251	14	42	0	321	2,291	71	5	0		4,144	0	0
C. bairdi (Zone 1)	14,313	33,343	12,107	14,326	25,897	4,729	14,169	8,809	3,146	3,022	4,048	5,195	8,145	7,605	1,465	2,283	1,631	729
C. bairdi (Zone 2)	29,808	23,275	42,387	13,379	8,170	1,586	4,815	3,166	4,343	2,980	4,109	4,650	2,805	1,467	472	314	538	99
Chinook	2,147	1,867	1,421	3,553	1,607	883	1,026	404	752	862	1,244	1,164	1,909	1,547	383	1,113	179	80
Non-chinook	742	556	1,409	718	65	53	17	84	4	138	546	294	136	84	0	155	5	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-18 Total number of deliveries of targeted BSAI Pacific cod and total number of ports of delivery for the trawl CV sector from 2004 through 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of ports	7	7	7	6	7	7	5	8	6	8	6	6	5	5	7	6	6
Total deliveries	620	505	539	611	644	478	498	625	667	592	600	529	603	502	522	449	263

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21); Total deliveries includes deliveries to floating processors, motherships, and C/Ps acting motherships

2.8.7.2. AFA Trawl C/P

The AFA trawl C/P sector could be impacted by changes in halibut and crab PSC management and potential changes in reallocation of BSAI Pacific cod sector allocations. Additionally, one AFA trawl C/P acting as a mothership could be an eligible processor for cooperative formation and could receive harvester shares under the proposed action. Finally, the AFA trawl C/P sector has in the past received reallocated BSAI Pacific cod from the trawl CV sector. As a result of the proposed action, reallocations of BSAI Pacific cod from the trawl CV sector could change thereby impacting those AFA trawl C/Ps targeting BSAI Pacific cod.

The sector includes 20 vessels listed by name in the AFA as eligible to harvest BSAI pollock in the directed fishery.³⁶ 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, they 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 access to fisheries. 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 historical share of the non-AFA trawl C/P sector from being eroded by the AFA trawl C/P vessels.

Table 2-13 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 among its members.

Looking at the catch indicators of Table 2-19, the sector on average harvested 104 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 87 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 smallest 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 one 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 yellowfin sole. Activity in other BSAI

³⁶ 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 analysis. The additional trawl C/P that qualifies under 208(e)(21) would be considered as part of the Amendment 80 sector for purposes of this review, because it primarily operates as an Amendment 80 vessel during its annual fishing cycle.

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 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 Table 2-20 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 total gross revenue of all fisheries (state and federal). Gross first wholesale value for the sector has ranged from a low of \$4 million in 2004 to a high of \$11 million in 2006 and 2011. 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 2004 to 2019. 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 (see Figure 2-4). 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 before 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 to close in February and March for all non-CDQ Pacific cod sectors due to Steller sea lion protection measures.

Provided in Table 2-21 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 2004 through 2020. Due to the limited number of AFA C/Ps that historically target BSAI Pacific cod which results in confidential restrictions, the source for the halibut, crab, and salmon data was from the annual Pollock Conservation Cooperative reports. Note that the Pollock Conservation Cooperative reports crab PSC as BSAI wide and are not specific to zones or COBLZ. Most PSC levels since implementation of Amendment 85 in 2008 have declined. Halibut PSC 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 PSC has declined which is likely the result of the utilization of salmon avoidance measures.

Table 2-22 depicts 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 2020 period were to Unalaska/Dutch Harbor.

From a community perspective, Table 2-23 notes that nearly all the AFA C/P owners report Seattle as their residence. One AFA C/P owner reported Anchorage as their residence between 2011 and 2020, 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 2020 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 most of its initial allocation. The sector has also been successful in lowering its PSC for halibut, crab, and salmon since implementation of Amendment 85.

Table 2-19 AFA C/P sector BSAI Pacific cod allocations and catch data from 2004 through 2020

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	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	2004					2	17	*	3310			-	-	575	11
	2005					1	17	*	4,877			-	-	360	11
	2006					1	17	*	5,964			*	1	550	11
	2007					3	17	1,844	4,554			*	1	394	11
	2008	3,506	4,706	1,200	134%	1	17	*	4,599	131%	98%	-	-	563	12
	2009	3,626	4,826	1,200	133%	2	15	*	4,790	132%	99%	-	-	418	12
	2010	3,467	4,041	574	117%	2	15	*	4,023	116%	100%	-	-	546	12
	2011	4,682	6,432	1,750	137%	2	16	*	6,299	135%	98%	-	-	1,165	15
	2012	5,361	6,621	1,260	124%	4	16	94	6,190	115%	93%	-	-	1,903	15
	2013	5,340	6,740	1,400	126%	1	16	*	6,438	121%	96%	-	-	2,197	15
	2014	5,215	5,465	250	105%	1	16	*	4,380	84%	80%	-	-	1,481	15
	2015	5,123	3,823	-1,300	75%	2	16	*	3,571	70%	93%	*	1	2,097	15
	2016	5,166	3,816	-1,350	74%	2	16	*	3,675	71%	96%	-	-	2,681	16
	2017	4,917	4,712	-205	96%	2	16	*	4,700	96%	100%	*	1	2,240	16
	2018	4,186	4,028	-158	96%	2	16	*	4,004	96%	99%	-	-	2,098	16
	2019	3,711	3,181	-530	86%	2	15	*	3,139	85%	99%	-	-	1,064	14
	2020	3,196	4,210	1,014	132%	1	15	*	3,394	106%	81%	-	-	1,039	14

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

* Denoted confidential data

Table 2-20 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 \$) from 2004 through 2019

Year	Gross first wholesale value (millions \$)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions \$)
2004	4	1%	558
2005	7	1%	657
2006	11	2%	673
2007	9	1%	673
2008	9	1%	723
2009	6	1%	519
2010	6	1%	555
2011	11	1%	740
2012	9	1%	767
2013	8	1%	738
2014	6	1%	710
2015	6	1%	735
2016	5	1%	760
2017	8	1%	814
2018	8	1%	774
2019	6	1%	800

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Table 2-21 Halibut PSC along with crab and salmon catch for AFA C/P sector while targeting BSAI Pacific cod from 2004 through 2020

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Halibut mortality (mt)	10	54	34	25	2	2	1	2	0	1	8	4	10	17	10	9	3
Red King crab	385	75	7	21	60	0	25	51	0	0	0	0	13	0	0	0	0
C. opilio	1,218	919	2,803	1,360	324	79	5	380	0	80	1,016	30	0	148	148	131	23
C. bairdi	89	116	996	681	0	0	0		0	0	207	0	15	0	0	198	0
Chinook	351	288	257	335	352	60	84	0	0	0	4	80	55	131	42	98	5
Non-chinook	0	12	7	80	1	7	1	0	0	0	0	0	304	0	0	36	0

Source: Pollock Conservation Cooperative report was used since the number of AFA C/Ps targeting BSAI Pacific cod been 3 or less.

Note that 2021 PSC is not yet available for the AFA C/P sector since the Pollock Conservation Cooperative report for 2021 will not be available until April of 2022.

Table 2-22 Port calls for AFA C/Ps with targeted BSAI Pacific cod from 2004 through 2020

Port	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dutch Harbor	1	1	1	1	2	1	1		1	1	3	2	6	3	3	5	1
Adak													1				
Total number of port calls	1	1	1	1	2	1	1	0	1	1	3	2	7	3	3	5	1

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21)

Table 2-23 Reported ownership address for AFA C/Ps from 2004 through 2020

CITY	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SEATTLE	16	16	16	16	16	15	15	15	15	15	15	15	15	15	15	14	14
ANCHORAGE								1	1	1	1	1	1	1	1	1	1
WA	1	1	1	1	1												
Total	17	17	17	17	17	15	15	16	16	16	16	16	16	16	16	15	15

Source: AKFIN, January 2021, Table originates from Sector_Landings(1-12-21)

2.8.7.3. Amendment 80 C/Ps

As part of the proposed action, holders of qualified LLP licenses must join a cooperative annually in association with an eligible licensed processor. One eligible licensed processor is an Amendment 80 C/P acting as a mothership which could be eligible to join a PCTC Program cooperative under the proposed action. That Amendment 80 C/P would also be eligible to receive harvest shares under the proposed action. Finally, as a group, the Amendment 80 sector could be impacted by changes in reallocation of BSAI Pacific cod from the trawl CV sector. The sector is one of four sectors that in the past has received reallocated BSAI Pacific cod from the trawl CV sector.

The Amendment 80 Program, implemented in 2008, initial qualified 28 C/Ps. The Amendment 80 Program allocates a portion of the TAC for POP 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 2-13 shows that as of June 2020, there were a total of 26 LLP licenses with an attached Amendment 80 endorsement. Of those 26 LLP licenses, 19 LLP licenses had both a BS and an AI endorsement, leaving 7 LLP licenses with a BS only endorsement.

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. Table 2-24 shows 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 six 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.

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, 11 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.

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 an incidental 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 and 2020 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., GHF 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 before Amendment 85 to generally over 3,600 mt after 2013. In 2020, the CDQ Pacific cod fishery catch was 331 mt.

The Amendment 80 sector also harvests AI Pacific cod on an annual basis. The number of Amendment 80 vessels during 2004 through June 2020 that have harvested AI Pacific cod has fluctuated between a low of seven vessels in 2014 and 2015 to a high of 14 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 sector's total non-CDQ BSAI Pacific cod catch. Since 2008, the AI on average has accounted for 11 percent of sector's total non-CDQ BSAI Pacific cod catch.

Provided in Table 2-25 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 10 percent of the total revenue from 2008 to 2019, whereas in the four years before 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.

Provided in Table 2-26 are halibut, red king crab (*Zone 1*), *C. bairdi* (*Zones 1 & 2*), *C. opilio* (*COBLZ*), Chinook salmon, and non-Chinook salmon PSC by the Amendment 80 sector while targeting BSAI Pacific cod from 2005 through 2021. Most PSC levels since implementation of Amendment 85 have declined. Halibut, as noted in Table 2-26, has declined from a high of 786 mt in 2005 to a low of 6 mt for 2020.

Using observer data, the port calls indicator in Table 2-27 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 to 2020 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 Table 2-28 notes that nearly all the Amendment 80 vessel owners report Seattle as their residence. For 2020, 11 Amendment 80 vessel owners reported their residency as Seattle, three owners reported Washington other than Seattle as their residence, 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 Amendments 85 were implemented 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.

Table 2-24 Amendment 80 sector BSAI Pacific cod allocations and catch data from 2004 through 2020

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	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	2004					20	23	23,583	37,548					476	3
	2005					18	22	17,133	30,010			-	-	552	5
	2006					18	22	18,659	28,700			58	3	537	3
	2007					25	22	24,911	33,182			64	4	609	4
	2008	20,429	20,429	0	100%	11	22	3,580	15,437	76%	76%	-	-	819	4
	2009	21,125	24,125	3,000	114%	15	21	3,851	21,323	101%	88%	-	-	573	5
	2010	20,197	24,028	3,831	119%	17	20	3,474	22,932	114%	95%	*	1	1,068	7
	2011	27,277	27,277	0	100%	16	20	1,767	24,503	90%	90%	-	-	1,052	8
	2012	31,232	33,232	2,000	106%	13	19	2,267	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	2,442	26,897	90%	83%	-	-	2,096	4
	2016	30,097	31,397	1,300	104%	16	19	3,644	28,530	95%	91%	*	1	2,245	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	22,391	92%	92%	-	-	1,842	8
	2019	21,622	21,622	0	100%	15	20	1,593	19,830	92%	92%	-	-	1,446	8
	2020	18,619	18,619	0	100%	10	19	608	16,605	89%	89%	-	-	331	7

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

* Denoted confidential data

Table 2-25 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 \$) from 2004 through 2019

Year	Gross first wholesale value (millions \$)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions \$)
2004	44	23%	191
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
2018	45	10%	457
2019	35	9%	406

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Table 2-26 Halibut and crab PSC along with salmon catch for Amendment 80 sector while targeting BSAI Pacific cod from 2004 through 2021

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	1,177	786	801	613	42	75	36	19	39	48	33	36	28	8	36	18	6	16
Red King crab (Zone 1)	716	1,726	3,773	1,551	38	869	364	135	30	300	0	257	164	53	18	275	215	0
C. opilio (COBLZ)	52,064	31,829	68,898	258,127	4,117	6,064	102	3,888	343	6,391	3,963	2,760	318	900	6	38,413	1,567	0
C. bairdi (Zone 1)	47,052	63,781	87,013	49,680	626	7,080	3,553	1,891	690	732	6,206	391	690	144	432	1,321	62	233
C. bairdi (Zone 2)	111,984	29,292	42,091	57,529	2,141	731	1,877	516	844	5,214	5,000	458	330	630	60	55	280	23
Chinook	3,144	1,649	1,952	2,605	76	232	123	0	152	2	57	112	527	19	856	231	30	51
Non-chinook	6,011	323	5,903	823	133	3	0	60	0	190	0	0	45	0	0	0	0	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-27 Port calls for Amendment 80 vessels with targeted BSAI Pacific cod from 2004 through 2020

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dutch Harbor	7	10	12	9	7	24	13	20	24	17	18	19	4
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	19	4

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21)

Table 2-28 Reported ownership address for Amendment 80 vessels from 2004 through 2020

CITY	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SEATTLE	16	16	17	17	19	17	16	14	12	9	9	9	10	10	12	12	11
OTHER	3	3	3	3	3	3	3	3	3	3	3	3	3	5	5	5	5
WA	2	3	2	2		1	1	3	4	6	6	6	6	4	2	3	3
KODIAK	2																
Total	23	22	22	22	22	21	20	20	19	18	18	18	19	19	19	20	19

Source: AKFIN, January 2021, Table originates from Sector_Landings(1-12-21)

2.8.7.4. HAL/Pot CV less than 60'

This sector would primarily be impacted from the proposed action due to changes in reallocations of BSAI trawl CV Pacific cod. This sector is one of four primary receivers of reallocated BSAI trawl CV Pacific cod. Vessels in this sector could also be utilized to harvest BSAI Pacific cod CQ based on trawl CV catch history if the Council selects the broader interpretation of the use of pot gear to harvest BSAI Pacific cod allocations associated with trawl CVs.

The HAL/Pot CV less than 60 ft sector includes all CVs that are less than 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 June 2020, 129 non-trawl licenses were issued to less than 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 Table 2-29, the sector routinely harvests their entire initial allocation³⁷ 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 231 percent of their initial allocation from 2004 to 2007, and 215 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 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 less than 60 ft has ranged from a low of 18 in 2004 to high of 42 in 2020. 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 less than 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 less than 60 ft sector, the number of participating 58 ft vessels has remained fairly consistent during 2004 through 2020. The number of 58 ft. CVs participating in the target BSAI Pacific cod allocation has ranged from a low 13 CVs in 2005 to a high of 32 CVs in 2020.

As noted in the catch and vessel count indicator in Table 2-29, 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 25 CVs in 2019. 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. Before 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 2020, 47 sector CVs harvested over 18,000 mt of DHS GHL.

Provided in Table 2-30 are HAL/Pot CV less than 60 ft sector annual gross ex-vessel value for BSAI Pacific cod, gross ex-vessel 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 ex-vessel value of the BSAI Pacific cod fishery has ranged from a low of \$2 million in 2005 to a high of \$9

³⁷ 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.

million in 2019. Gross first wholesale value has ranged from a low of \$4 million in 2004 to a high of \$19 million in 2018. Looking at the BSAI Pacific cod ex-vessel 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 2004 to 2019. Table 2-31 provides a diversification table for the HAL/Pot CV less than 60 ft sector from 2011 through 2019 to provide more clarity on additional fishing activities by the sector. Information from the diversification table shows that the IFQ fishery on average during the 2011 to 2019 years contributed the largest percent of ex-vessel revenue for the sector at 31 percent followed by GHL Pacific cod fishery at 25 percent and the federal BSAI Pacific cod fishery at 23 percent. Other fishing activities by the sector include salmon, CDQ, and the GOA Pacific cod, which in recent years has diminished significantly due to the decline in the GOA Pacific cod biomass and the resulting limitations on the directed GOA Pacific cod fishery.

There are no PSC limits for halibut, crab, and salmon for the pot CVs less than 60 ft in the sector, but the HAL CVs less than 60' ft in the sector share a halibut PSC limit with HAL CVs \geq 60 ft. Halibut PSC for the sector ranges from a low of one mt to a high of 8 mt in 2014. Nevertheless, the sector does show high crab PSC. Provided in Table 2-32 provides data showing annual halibut PSC, and red king crab (Zone 1), *C. bairdi* (Zones 1 & 2), *C. opilio* (COBLZ), Chinook salmon PSC, and non-Chinook salmon PSC for the sector while targeting BSAI Pacific cod from 2004 through 2021.

The HAL/Pot CV less than 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 has occurred in early February and even January 19 for the 2020 season. 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 the port delivery data provided in Table 2-33 show the total number of deliveries of targeted BSAI Pacific cod for the HAL/Pot CV less than 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 eight. The total number of deliveries has fluctuated between 178 deliveries in 2004 to 888 deliveries in 2019. Of the delivery ports, Unalaska/Dutch Harbor has routinely had the most deliveries throughout the 2004-2020 period.

Detailed information on community engagement is provided in Section 2.8.9.1.4, but in summary, as shown in Table 2-75 and Table 2-76 in that section, this is a geographically diversified fleet, but there has been some concentration of reported residency since implementation of Amendment 85. Unalaska/Dutch Harbor has the largest number of locally owned HAL/Pot CV less than 60 ft vessels 9 out of 16 years, with Kodiak having the largest number the remaining 7 out of 16 years.

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 as little as 19 days. In the past two years, the number of CVs within the sector participating in the Federal BSAI Pacific cod fishery has increased to a high of 36 and 42 vessels, respectively. In the years prior to 2019, the number of participating CVs in the Federal fishery had been in decline 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 ex-vessel value of the Federal BSAI Pacific cod fishery has increased relative to the sector's total gross revenue.

Table 2-29 HAL/Pot CVs ≤ 60 ft sector BSAI Pacific cod allocations and catch data from 2004 through 2020

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	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 & HAL CV<60	2004	1416	2961	1,545	209%	18	23	3,199	3230	228%	109%	-	-	-	-
	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	5,518	5,527	184%	100%	-	-	230	4
	2011	4,055	9,005	4,950	222%	21	39	8,026	8,043	198%	89%	*	2	928	4
	2012	4,645	8,880	4,235	191%	24	38	8,877	8,888	191%	100%	2,821	8	2,311	5
	2013	4,627	9,177	4,550	198%	26	36	9,479	9,435	204%	103%	3,660	8	2,531	7
	2014	4,518	12,018	7,500	266%	20	25	12,448	12,412	275%	103%	11,401	18	2,016	5
	2015	4,438	10,630	6,192	240%	25	32	10,035	10,019	226%	94%	7,974	14	2,218	8
	2016	4,476	10,674	6,198	238%	22	32	10,301	10,303	230%	97%	16,053	24	2,020	3
	2017	4,259	9,271	5,012	218%	24	32	9,950	9,950	234%	107%	17,859	25	1,661	19
	2018	3,627	8,748	5,121	241%	29	46	8,558	8,579	237%	98%	17,533	37	1,554	24
	2019	3,214	9,800	6,586	305%	36	60	8,852	8,864	276%	90%	20,117	43	1,632	25
	2020	2,766	4,967	2,201	180%	42	44	3,752	4,828	175%	97%	18,069	47	1,247	13

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

* Denoted confidential data

Table 2-30 HAL/Pot CVs < 60 ft sector BSAI Pacific cod ex-vessel price, BSAI Pacific cod gross ex-vessel value (millions \$), BSAI Pacific cod gross ex-vessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million \$), and total gross revenue (millions \$) from 2004 through 2019

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 \$)
2004	0.25	2	12%	4	15
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
2018	0.41	8	20%	19	39
2019	0.44	9	20%	16	44

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Source: AKFIN, May 2019

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

Table 2-31 HAL/Pot CVs < 60 ft sector diversification table showing vessel count, gross ex-vessel revenue (\$), and percent of total gross ex-vessel revenue (\$) by fishery from 2011 through 2019

Year	BSAI Pacific cod			GHL Pacific cod			GOA Pacific cod			IFQ fisheries			Salmon			CDQ - all groundfish			Total	
	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)	% of total	Vessel count	Value (\$)
2011	22	6,701,033	19%	8	*	*	11	4,009,600	11%	15	18,649,739	52%	8	1,834,949	5%	2	*	*	22	35,589,228
2012	23	7,485,350	24%	14	3,399,603	11%	10	2,797,277	9%	16	11,539,938	36%	7	1,470,684	5%	7	4,180,026	13%	24	31,837,391
2013	26	6,479,039	22%	13	2,684,981	9%	9	1,574,372	5%	18	8,919,889	31%	9	5,081,702	18%	5	2,896,949	10%	26	28,936,424
2014	20	8,333,564	29%	14	7,132,008	24%	3	1,324,509	5%	12	7,773,178	27%	6	1,441,033	5%	6	2,492,331	9%	20	29,232,174
2015	24	6,489,142	23%	19	6,645,848	23%	9	1,086,620	4%	12	8,514,077	30%	11	2,635,247	9%	6	1,756,101	6%	24	28,284,497
2016	22	6,970,056	24%	20	9,491,453	32%	7	1,177,133	4%	12	7,632,355	26%	8	1,614,247	6%	6	1,909,267	7%	22	29,318,862
2017	24	7,003,542	22%	23	10,124,700	32%	8	916,397	3%	13	8,782,090	28%	7	2,455,627	8%	6	2,155,120	7%	24	31,898,853
2018	29	8,186,696	23%	26	13,592,813	38%	9	409,435	1%	16	9,442,374	26%	8	1,678,016	5%	5	1,715,345	5%	29	35,905,867
2019	36	8,479,864	21%	29	13,485,109	34%	5	83,894	0%	20	10,157,021	25%	14	4,124,585	10%	6	2,511,584	6%	36	40,208,724

Source: Small_Boat_div(4-15-21)

*Denotes confidential data

Table 2-32 Halibut, crab, and salmon PSC for HAL/Pot CVs ≤ 60 ft sector while targeting BSAI Pacific cod from 2004 through 2021

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	2	3	2	2	4	2	2	2	2	4	7	3	1	1	5	2	1	0
Red King crab (Zone 1)	4	60	13	31	274	13	55	22	109	2,504	5,269	4,062	138	7,507	19,506	5,174	3,502	4,743
C. opilio (COBLZ)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0
C. bairdi (Zone 1)	228	7,611	132	456	10,921	2,544	8,765	1,576	1,066	5,201	23,497	59,113	34,444	56,930	30,126	41,110	21,501	6,527
C. bairdi (Zone 2)	0	115	9,555	4,926	52,470	11,039	3,967	13,902	4,923	8,004	29,843	28,469	10,794	23,470	8,242	6,485	3,825	1,175
Chinook	0	0	0	2	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	1	2	0	0	0	0	0	1	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-33 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for the HAL/Pot CVs ≤ 60 ft sector from 2004 through 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of ports	4	4	5	5	5	5	5	6	5	6	6	3	3	4	5	8	5
Total deliveries	178	257	233	295	318	300	199	257	391	406	752	511	707	696	645	888	713

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21)

2.8.7.5. Pot CV ≥ 60'

The proposed action includes an option to fish trawl CV Pacific cod allocations with pot CV gear. The Council is considering options that would limit vessels eligible to join a cooperative to those that are associated with an LLP license that bring CQ into the cooperative or a broader interpretation that would allow any vessel that has the appropriate area endorsement to join a cooperative. Vessels from this sector could be utilized if the Council selects the broader interpretation.

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 2-13 shows that as of June 2020, 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 in Table 2-34, the sector on average harvested 79 percent of their initial allocation³⁸ from 2004 to 2020. On a 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 1,315 mt in 2008 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 2004. Overall, vessel numbers in the federal BSAI Pacific cod target fishery ranged from a low of 23 CVs in 2015 to a high of 60 CVs in 2004. 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, one to three CVs from 2018 through 2020, 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 Table 2-35 the pot CV ≥ 60 ft sector annual gross ex-vessel value or BSAI Pacific cod, gross ex-vessel 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 ex-vessel 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 \$35 million in 2018. Looking at the BSAI Pacific cod ex-vessel value for the sector relative to the total gross revenue, the fishery accounted for less than 14 percent of the total revenue on average from 2004 to 2019.

For the pot CV ≥ 60 ft sector, there are no PSC limits for halibut, crab, and salmon for the sector. Provided in Table 2-36 provides data showing annual halibut PSC and catch of red king crab (Zone 1), *C. bairdi* (Zones 1 & 2), *C. opilio* (COBLZ), Chinook salmon, and non-Chinook salmon for the sector while targeting BSAI Pacific cod from 2005 through 2021. Halibut PSC 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 PSC, the sector had some of the highest crab PSC of all the sectors as shown in Table 2-36.

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

³⁸ 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.

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 data provided in Table 2-37 show the total number of deliveries of targeted BSAI Pacific cod for the pot $CV \geq 60$ ft sector and the number of ports to include floating processors. Overall, the total number of delivery ports has ranged from 4 to 7 ports since 2004. The total number of deliveries has fluctuated between 118 deliveries in 2009 to 350 deliveries in 2004. Of the delivery ports, Unalaska/Dutch Harbor has routinely had the most deliveries throughout the 2004-2020 period.

Data in Table 2-38 denote a modest decline in the total number of reported pot $CV \geq 60$ ft owners and a modest concentration of reported residency since 2004. In 2004, there were 61 reported pot $CV \geq 60$ ft owners, while in 2020 there were 39 reported owners. The biggest change in residency for the sector was Seattle, which in 2020 had 15 reported pot $CV \geq 60$ ft owners, while in 2004 there were 27 sector owners reporting Seattle as their residency. Other communities that had reported residency greater than one on an annual basis for the pot $CV \geq 60$ ft sector were Washington (other than Seattle), Oregon, Homer, and Kodiak.

Table 2-34 Pot CVs ≥ 60 ft sector BSAI Pacific cod allocations and catch data from 2004 through 2020

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	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	2004	15,174	11,735	-3,439	77%	60	61	11,382	11,386	75%	97%	-	-	*	2
	2005	14,502	12,828	-1,674	88%	46	47	11,548	11,548	80%	90%	-	-	*	1
	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	-	-
	2019	13,499	13,499	0	100%	35	35	13,268	13,268	98%	98%	166	3	-	-
	2020	11,616	11,616	0	100%	38	38	5,269	10,982	95%	95%	*	2	-	-

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

* Denoted confidential data

Table 2-35 Pot CVs ≥ 60 ft sector BSAI Pacific cod ex-vessel price, BSAI Pacific cod gross ex-vessel value (millions \$), BSAI Pacific cod gross ex-vessel value as a % of total gross revenue, BSAI Pacific cod gross first wholesale value (million \$), and total gross revenue (millions \$) from 2004 through 2019

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 \$)
2004	0.25	6	12%	14	51
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
2018	0.40	13	23%	35	56
2019	0.44	13	23%	24	57

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Table 2-36 Halibut, crab, and salmon PSC for Pot CVs ≥ 60 ft sector while targeting BSAI Pacific cod from 2004 through 2021

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	2	2	2	0	2	0	1	3	2	1	0	0	1	1	0	1	1	0
Red King crab (Zone 1)	177	1,208	2,022	14,531	13,626	973	749	2,546	1,025	10,729	1,792	5,118	226	6,700	211,105	34,998	10,293	3,364
C. opilio (COBLZ)	1,000	7,377	7,120	229,603	51,793	6,520	17,335	258	1					1,396	25			1
C. bairdi (Zone 1)	11,216	41,413	95,082	279,801	464,354	176,152	141,653	74,604	31,986	37,537	63,512	104,522	30,893	99,996	141,220	24,713	13,941	1,949
C. bairdi (Zone 2)	3,016	22,786	72,059	75,999	279,481	67,310	41,135	23,799	6,479	11,319	8,412	26,727	13,960	23,166	8,026	1,225	614	256
Chinook	0	0	0	8	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	0	0	0	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-37 Total number of deliveries of targeted BSAI Pacific cod and total number of delivery ports for the pot CVs ≥ 60 ft sector from 2004 through 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of ports	6	5	7	6	6	5	5	5	4	5	5	5	5	5	5	6	6
Total deliveries	350	308	425	349	317	118	215	293	208	176	186	167	200	267	274	218	99

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21)

Table 2-38 Reported ownership address for pot CVs ≥ 60 ft vessels from 2004 through 2020

CITY	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SEATTLE	27	22	22	26	26	17	16	18	15	15	13	12	13	14	13	14	15
WA	7	5	4	4	3	1		1	1	3	4	3	3	5	7		7
OR	9	8	6	6	5	4	4	5	5	7	7	4	4	6	5		5
HOMER	1	1	1		1	1	3	4	4	3	3	4	2	3	3	4	5
KODIAK	11	6	7	4	4	3	4	2		1			2	3	3	2	3
OTH	4	1	1	1	1		1	1	1	1	1				2	2	2
SELDOVIA			1	1	1			1	1		1		1	1	1	1	1
KING COVE			2														
KETCHIKAN	1	1	1	1													
KENAI									1		1			1			
ANCHORAGE		2	1	1	1	1	2	1	1	1	1			1			1
DUTCH HARBOR		1	2	1			1										
Total	61	47	48	45	42	27	31	33	29	31	31	23	25	34	34	35	39

Source: AKFIN, January 2021, Table originates from Sector_Landings(1-12-21)

2.8.7.6. HAL C/P

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 HAL C/Ps. Table 2-13 shows that in 2020, 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.

The Freezer Longline Coalition (FLC) is comprised of owners and operators of freezer longline vessels participating in the Pacific cod fisheries of the North Pacific. Since 2010, FLC members, who account for all 36 LLP licenses with a Pacific cod HAL C/P endorsement for the BS, have operated as a voluntary cooperative, the Freezer Longline Conservation Cooperative (FLCC). Each year, the FLCC issues quota shares to members in proportion to historical fishing activity associated with each LLP license 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 Table 2-39, the sector on average harvested 118 percent of its initial allocation from 2004 to 2007, and 100 percent since the implementation 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 implementation 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 since 2004 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 2004, 2005, 2006, and 2008. On average, 97 percent of the sector allocation was harvested in the BS. As noted in Table 2-39, 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 19 and 11 HAL C/Ps participating in the CDQ fishery on annual basis from 2004 through 2020. Participation in the GHL fishery has been limited with some participation in the AI GHL fishery from 2006 through 2011.

Provided in Table 2-40 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 68 percent of the total revenue from 2004 to 2019, 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. Table 2-41 provides data showing annual halibut PSC, red king crab (Zone 1), *C. bairdi* (Zones 1&2), *C. opilio* (COBLZ), Chinook salmon, and non-Chinook salmon PSC for the sector while targeting BSAI Pacific cod from 2004 through 2021. Halibut PSC for the sector has declined since 2012, from a high of 556 mt in 2009 to a low of 74 mt in 2020.

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 numbers in Table 2-42 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 232 port calls per year over the 2008 through 2020 period, but port calls for 2020 were roughly half of that average which was likely due to limited services in many of the Alaska communities because of the coronavirus pandemic.

Looking at the owner city indicator shown in Table 2-43 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 12 in 2020 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 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 PSC.

Table 2-39 HAL C/P sector BSAI Pacific cod allocations and catch data from 2004 through 2020

	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	2004	80,930	97,795	16,865	121%	39	39	94,305	94,379	117%	97%	-	-	14,591	19
	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%	29	29	107,079	107,113	103%	100%	*	1	17,122	13
	2018	88,324	88,324	0	100%	25	26	87,711	87,782	99%	99%	-	-	13,136	11
	2019	78,260	78,260	0	100%	23	24	77,123	77,205	99%	99%	-	-	11,443	11
	2020	67,346	67,346	0	100%	20	21	62,527	62,543	93%	93%	-	-	9,613	13

Source: AKFIN, January 2021; Table originates from Sector_Landings(1-12-21)

Table 2-40 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 \$) from 2004 through 2019

Year	Gross first wholesale value (millions \$)	Gross first wholesale value as a % of total gross revenue	Total gross revenue (millions \$)
2004	110	66%	166
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
2018	177	76%	234
2019	136	73%	186

Source: AKFIN July 2020; Table originates from file Sector_Landings_REV(7-8-20)

Table 2-41 Halibut PSC along with crab PSC for HAL C/P sector while targeting BSAI Pacific cod from 2004 through 2021

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	444	551	399	443	563	554	470	474	549	470	406	295	194	169	115	77	76	21
Red King crab (Zone 1)	12,332	13,315	6,512	5,334	4,942	4,053	952	2,417	2,822	5,366	6,943	3,240	3,341	2,470	5,586	0	0	0
C. opilio (COBLZ)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C. bairdi (Zone 1)	4,245	4,724	3,735	4,446	7,255	6,322	1,411	6,266	6,804	7,523	8,742	6,899	3,129	3,577	2,817	3	6	0
C. bairdi (Zone 2)	5,757	7,756	8,561	7,544	8,793	12,175	8,676	5,978	6,386	7,776	9,979	13,779	13,821	11,017	3,414	4,144	3,368	1,351
Chinook	46	34	25	17	18	11	11	40	46	0	33	42	44	28	69	15	15	6
Non-chinook	80	52	86	83	55	19	21	120	137	148	226	93	168	165	171	297	104	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-42 Port calls for HAL C/P vessels with targeted BSAI Pacific cod from 2008 through 2020

Port	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Dutch Harbor	121	168	141	203	234	272	278	278	277	246	196	176	106
St Paul	50	30	25	13	9	11	29	27	20	18	5	7	5
Adak	5	7	4	2		1		1	1	5	4	4	
Other	3	1	1		4	1	1	1	2	1			2
Akutan			1	2		1		1					2
Kodiak	3	1	1										
Sand Point		1	3	1									
Transfer at Sea	1					1							
Nome											2	2	
King Cove	1												
Yakutat				1									
Total number of port calls	184	208	176	222	247	287	308	308	300	270	207	189	115

Source: AKFIN, January 2021, Table originates from Sector_Landings_Port(1-12-21)

Table 2-43 Reported ownership address for HAL C/P vessels from 2004 through 2020

CITY	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SEATTLE	29	31	31	29	27	29	25	19	18	16	16	15	20	18	15	13	12
WA	5	5	5	5	8	5	5	5	7	7	6	7	7	7	7	7	6
ANCHORAGE								2	3	3	2	3	2	2	2	2	1
OR	1										1	1	1	1	1	1	1
KODIAK									1	1	1	1	1	1	1	1	1
OTH	1				1	1	1										
PETERSBURG	3	3	3	3	3	3	5	5	4	4	4	4					
Total	39	39	39	37	39	38	36	31	33	31	30	31	31	29	26	24	21

Source: AKFIN, January 2021, Table originates from Sector_Landings(1-12-21)

2.8.7.7. Shoreside processors

Regulations at 50 CFR §679.2 define a shoreside processor as “any person or vessel that receives, purchases, or arranges to purchase, unprocessed groundfish, except catcher/processors, motherships, buying stations, tender vessels, restaurants, or persons receiving groundfish for personal consumption or bait.” That section of the regulations defines a mothership as “a vessel that receives and processes groundfish from other vessels.” The definition as applied to the analysis of the BSAI Pacific cod CV trawl fishery includes both shorebased processors and floating processors other than C/Ps. Amendment 80 and AFA C/Ps are described in earlier sections. As noted in the next section, AFA motherships are included in this category because only one AFA mothership participated in the BSAI target Pacific cod trawl CV fishery during the qualifying periods considered.

A summary of the BSAI Pacific cod deliveries by processing sector is presented in Table 2-44. Landings in metric tons are only presented for the shorebased processing sector because of confidentiality limitations. While there are more than three plants operating in the floating processor and C/Ps sectors in many years, the floating processor sector does not have three or more firms active. As a result, both the C/Ps sector and the floating processor sector are masked. One MS was active one year and that information is also masked.

C/Ps over the entire period accounted for 13.9 percent of the total amount. During the three periods considered for allocations under the proposed program C/Ps took 14.4 percent of the deliveries from 2004 through 2019, 16.8 percent from 2009 through 2019, and 17.4 percent from 2014 through 2019.

The total number of processing plants that accepted deliveries of BSAI Pacific cod from trawl CVs are reported in the bottom portion of the table. From 10 through 19 plants were active during any year. The increase in plants operating after 2015 was primarily driven by the increased C/P participation. The number increased from two in 2015 to as many as nine in 2018. BSAI FMP Amendment 120 limited the number of C/Ps that may act as a mothership when taking deliveries from the Pacific cod trawl CV sector apportionment. Limitations imposed under Amendment 120 will remain in place under this action. As a result, the processors that were active in the past that may continue to participate in the future is closer to 10 to 13 that historically participated. However, there is not closed class of processors so the number of floating processors, shorebased processors, or motherships that are active in the fishery could increase.

Table 2-44 Pacific cod deliveries from trawl CVs by processing sector, 2003 through 2019

Year	CP	FP	MS	SP	Total
Pacific cod deliveries received (metric tons)					
2003	conf	conf		26,983	39,963
2004	conf	conf		20,765	37,207
2005	conf	conf		18,025	30,920
2006	conf	conf		14,178	32,440
2007	conf	conf		15,882	29,150
2008	conf	conf		13,980	28,090
2009	conf	conf		12,021	25,904
2010	conf	conf		11,615	25,283
2011	conf	conf		15,173	34,622
2012	conf	conf		24,051	40,797
2013	conf	conf		23,313	38,979
2014	conf	conf		22,817	39,093
2015	conf	conf		19,581	31,741
2016	conf	conf	conf	19,110	41,716
2017	conf	conf		14,712	37,443
2018	conf	conf		19,750	33,709
2019	conf	conf		13,837	26,329
Total	79,839	493,548	(FP, MS, & SP Combined)		573,388
Count of processors					
2003	1	4		6	11
2004	3	4		7	14
2005	1	4		7	12
2006	1	3		7	11
2007	2	2		8	12
2008	3	3		8	14
2009	2	2		6	10
2010	2	3		5	10
2011	3	3		7	13
2012	3	2		6	11
2013	2	3		8	13
2014	2	2		6	10
2015	2	2		6	10
2016	7	3	1	6	17
2017	8	3		5	16
2018	9	3		7	19
2019	8	3		7	18
Total Processors	18	8	1	13	42

Source: BSAI_TRW_LLP_PCODLANDINGS(4-10-20).xls

Table 2-45 shows the percentage of ex-vessel value generated by various species and species groups in recent years by shorebased and floating processors that took deliveries of BSAI Pacific cod from trawl CVs. Pacific cod value as a percentage of the total and as a percentage of groundfish are presented in the first two rows. Pacific cod accounted for 3 percent to 6 percent of the total value and 5 percent to 10 percent of the groundfish value, depending on the year. Those percentages indicate that Pacific cod is an important source of revenue for these processors. The table does not indicate amount of profit generated by Pacific cod relative to the other fisheries considered, because those data are unavailable.

Table 2-45 Percentage of ex-vessel value generated by species or species group, 2009 through 2019.

Exvessel Value	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Pcod as % of Total	4%	3%	4%	6%	4%	4%	3%	4%	4%	6%	4%	4%
Pcod as % of Groundfish	6%	6%	7%	10%	8%	6%	5%	6%	6%	8%	6%	7%
Shellfish as % of Total	26%	31%	29%	29%	28%	30%	28%	24%	16%	17%	18%	25%
Salmon as % of Total	12%	9%	8%	8%	13%	4%	6%	5%	14%	4%	5%	8%
Halibut as % of Total	5%	8%	9%	5%	3%	3%	3%	4%	4%	3%	3%	5%
Sablefish as % of Total	4%	4%	4%	3%	3%	3%	2%	2%	3%	2%	2%	3%
Herring as % of Total	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Groundfish as % of Total	56%	52%	53%	57%	56%	63%	62%	66%	66%	76%	73%	62%

Source: BSAI_TRW_PROC_DIV(7-8-20) AKFIN summary

The shorebased processors operated in five different communities: Akutan, Adak, King Cove, Sand Point, and Unalaska/Dutch Harbor. In recent years the primary delivery ports were Akutan, Adak, and Unalaska/Dutch Harbor. Sand Point and King Cove were active most years, but the amount of targeted BSAI Pacific cod delivered to them by the trawl CV sector was substantially less than the amounts delivered to the other ports.

Floating processors are generally mobile vessels that are positioned close to the fishing grounds for specific fisheries and seasons. For the Pacific cod fishery, they may be positioned in protected areas near Unalaska/Dutch Harbor or closer to Unimak Island for the Bering Sea Fishery or farther West along the Aleutian Islands chain for the Aleutian Islands fishery.

2.8.7.8. Catcher/Processors as Motherships

Two C/Ps are qualified to act as motherships and accept deliveries of BSAI Pacific cod under BSAI FMP Amendment 120. One is owned by a firm that is a part of the AFA C/P cooperative and the other is owned by a firm that is part of the Amendment 80 cooperative program. One of the C/Ps typically took deliveries from CVs that were owned by the firm. The other contracted with CVs to deliver Pacific cod. Both firms operate out of the Seattle metropolitan area.

The processing history of these two vessels cannot be reported under confidentiality limitations. An option under this proposed action would create a sideboard limit on deliveries of BSAI Pacific cod to these two vessels based on historical deliveries. How these two firms will operate under the proposed program will depend on whether they are operating under sideboard limitations and whether they are able to reach an agreement on how to divide any limits that are imposed. It is not known at this time whether the two firms will be able to reach such an agreement. If they cannot, they would likely race to process the sideboard limit that is imposed. That could result in the CVs delivering CQ earlier and at a faster pace than they would if the two firms reached an agreement on how to divide the sideboard limit.

2.8.7.9. AFA Motherships

True motherships have not been very active in the fishery. These are vessels that are primarily involved in the pollock fishery and have only taken very limited deliveries of targeted BSAI Pacific cod from trawl CVs in 2016. Motherships operate at-sea where the fish are harvested and take unsorted cod ends from the trawl CVs. These processors are not expected to increase activity in the fishery under proposed program since they typically accept deliveries from CVs that are members of the Mothership Fleet Cooperative (MFC) which is a signatory to the Cod Allocation Agreement. The CVs in the MFC determine how to harvest their sideboard limit within the cooperative structure and where to deliver that catch. A summary of the harvest of the MFC's Pacific cod sideboard limit by CV is presented in Table 5 of the 2019 MFC's AFA cooperative report.³⁹ That table only reports the harvest and not where the catch was delivered.

³⁹ https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/CoopRpts2019/MothershipFleet_AFA.pdf

2.8.8. Product Composition and Flow of Pacific Cod

The following information on production composition and flow of Pacific cod originates from the 2013 Economic Status of the Groundfish Fisheries of Alaska (NMFS 2018). That information has been updated with more recent data on the production by product, gross first wholesale value, and markets based on discussions with members of the processing sector.

Product flows for Pacific cod have changed following the decline of Atlantic cod (*G. morhua*) harvests. Buyers from Norway and Portugal began purchasing Pacific cod from Alaska for the first time in the late 2000's. Historically, Pacific cod was considered an inferior product compared to Atlantic cod, but the decline of Atlantic cod has made Pacific cod more acceptable.

Pacific cod have been processed into salted and split, headed and gutted (H&G), fillet blocks, or individually frozen fillets, which are either individually quick-frozen or processed into shatterpack (layered frozen fillets that separate individually when struck upon a hard surface) or layer pack as primary products. These product forms account for almost all of the primary products produced annually. The other secondary product forms produced includes roe, milt, meal, bones, oil, stomachs, chins, heads, and other products.

Wholesale prices are highest for fillet products, but H&G accounts for the largest share of Alaska Pacific cod production when all processing sectors are considered. All the shorebased processors that take trawl deliveries of Pacific cod have focused on fillet production recent years. Fillet production takes longer and requires more labor. However, based on market demand shorebased processors have invested in upgrading their Pacific cod plants to produce more fillets. Table 2-46 shows that by 2019 the shoreplants in the Anchorage, Akutan, Dutch Harbor, and Unalaska grouping were producing fillets from about 92% of the round weight Pacific cod delivered. The production of fillets from the Adak, King Cove, and Sand Point plants was more variable and was dependent on the firms that were active in a year. Not all years could be shown because fewer than three plants operated that year. The floaters, C/Ps, and other plants still produced a mostly H&G products but production was highly variable and depended on the year and plant. This pattern also extended to the C/P sector with one plant producing fillets almost exclusively in recent years and other being configured to produce an H&G product.

H&G Pacific cod is frozen after the first processing, and then proceeds to another processor within the U.S., or is exported for secondary processing. After reprocessing, the Pacific cod could be sold to foreign markets or reimported into the U.S. where processors may purchase it for further process it by cutting it into sticks and portions or breading it for sale in grocery stores or food services. Fillet production is typically sold into the U.S. market. Block production would be sold to markets that would process the blocks into portions. Individual quick-frozen portions or shatter packs are typically sold to final markets. The final markets include fine or "white tablecloth" restaurants, institutional food service, quick-service restaurants, retail fish markets, and grocery stores.

Representatives of one seafood company noted that discussions with potential buyers concerning BS and AI Pacific cod start several months before the season begins. It was noted that one of the most important factors of Pacific cod suppliers is being viewed as a reliable and consistent source of cod products from one year to the next. Another important factor in the Pacific cod fishery is market timing. Asian buyers, particularly the Japanese, are accustomed to making their buying commitments early in the year. In addition, as the volume of Pacific cod product streams into the market during the first few months of the season, demand and price for Pacific cod tend to decline. These market signals provide an incentive for suppliers of Pacific cod products to start fishing and processing AI Pacific cod as early as mid-February. Also, the quality of Pacific cod caught late in March and into April begins to deteriorate. Once Pacific cod have spawned, the roe (which is the most valuable product made from Pacific cod) becomes watery and losses value. Flesh quality decreases markedly in post-spawned fish, further decreasing the value.

Table 2-46 Percentage of first wholesale value derived from Pacific cod processed into primary product forms by processors taking deliveries of BSAI Pacific cod

Product/Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Fillet	40%	60%	52%	51%	42%	85%	63%	58%	64%	84%	65%	65%	89%	93%	92%	92%	72%
H&G	29%	21%	32%	37%	55%	13%	36%	41%	36%	16%	35%	35%	11%	7%	8%	8%	25%
Salted & Split, Split	31%	18%	15%	12%	3%	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	3%
Whole, Bled	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Akutan, Anchorage, Dutch Harbor/Unalaska	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Fillet	39%	38%	67%	38%	46%	c	c	85%	52%	76%	c	c	c	89%	52%	79%	64%
H&G	59%	62%	33%	62%	54%	c	c	15%	48%	24%	c	c	c	11%	48%	21%	35%
Salted & Split, Split	2%	0%	0%	0%	0%	c	c	0%	0%	0%	c	c	c	0%	0%	0%	0%
Whole, Bled	0%	0%	0%	0%	0%	c	c	0%	0%	1%	c	c	c	0%	0%	0%	0%
Adak, King Cove, Sand Point	100%	100%	100%	100%	100%	c	c	100%	100%	100%	c	c	c	100%	100%	100%	100%
Fillet	28%	42%	65%	46%	45%	66%	46%	33%	19%	41%	29%	10%	29%	29%	26%	22%	33%
H&G	70%	57%	34%	54%	55%	31%	54%	67%	80%	57%	71%	90%	70%	71%	74%	78%	67%
Salted & Split, Split	c	c	c	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Whole, Bled	c	c	c	0%	0%	3%	0%	0%	0%	2%	0%	0%	1%	0%	0%	0%	1%
Other	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: AFFIN summary of CAS production data

2.8.9. Fishing Communities

A two-part approach was used in characterizing the communities engaged in or dependent on the BSAI Pacific cod fishery in ways that may be affected by the proposed action. First, tables based on existing quantitative fishery information were developed and are presented in Section 2.8.9.1 to identify patterns of engagement in and dependency on the BSAI Pacific cod fishery based on the distribution across communities of the sectors most likely to be directly affected by one or more of the proposed alternatives. This is consistent with the portion of the National Standard 8 guidelines that state:

To address the sustained participation of fishing communities that will be affected by management measures, the analysis should first identify affected fishing communities and then assess their differing levels of dependence on and engagement in the fishery being regulated (50 CFR 600.345⁴⁰).

The second approach involved selecting a subset of communities that, based on the results of the first approach, appear to be potentially substantially engaged in or substantially dependent on the relevant portions of the BSAI Pacific cod fishery for characterization of the specific community context of fishery. This is consistent with the portion of the National Standard 8 guidelines that state:

The best available data on the history, extent, and type of participation in these fishing communities in the fishery should be incorporated into the social and economic information presented in the FMP. The analysis does not have to contain an exhaustive listing of all communities that might fit the definition; a judgment can be made as to which are primarily affected (50 CFR 600.345).

This approach then qualitatively provides a context for the subsequent analysis of potential community impacts that may occur because of fishery management-associated changes to the locally present sectors in combination with other community-specific attributes and socioeconomic characteristics. The characterization of the relevant communities, appearing in Section 2.8.9.2, incorporates existing and easily accessible community descriptive information by reference to the extent feasible, which has been supplemented with limited phone and email contacts with individuals and entities to update existing information where needed.

Under National Standard 4, conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such an allocation shall be: (1) fair and equitable⁴¹ to all such fishermen; (2) reasonably calculated to promote conservation; and (3) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges. Among other National Standard 4 guidelines:

Definition. An “allocation” or “assignment” of fishing privileges is a direct and deliberate distribution of the opportunity to participate in a fishery among identifiable, discrete user groups or individuals. Any management measure (or lack of management) has incidental allocative effects, but

⁴⁰The National Standard 8 guidelines referenced in this section, current as of December 10, 2021, are from the Electronic Code of Federal Regulations (CFR) Title 50, Chapter VI, Part 600, Subpart D, Section 600.345 (cited as 50 CFR 600.345) are available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=6b0acea089174af8594db02314f26914&mc=true&r=SECTION&n=se50.12.600_1345 accessed 12/14/2021.

⁴¹ If a LAPP is being established, MSA Section 303(b)(6) also requires that the Council (and the Secretary) take into account “the fair and equitable distribution of access privileges in the fishery” among a number of other factors (including present participation in the fishery; historical fishing practices in and dependence on, the fishery; the economics of the fishery; the capability of fishing vessels used in the fishery to engage in other fisheries; the cultural and social framework relevant to the fishery and any affected fishing communities; and, any other relevant factors).

only those measures that result in direct distributions of fishing privileges will be judged against the allocation requirements of Standard 4.

An allocation of fishing privileges may impose a hardship on one group if it is outweighed by the total benefits received by another group or groups. An allocation need not preserve the status quo in the fishery to qualify as “fair and equitable,” if a restructuring of fishing privileges would maximize overall benefits. The Council should make an initial estimate of the relative benefits and hardships imposed by the allocation, and compare its consequences with those of alternative allocation schemes, including the status quo. Where relevant, judicial guidance and government policy concerning the rights of treaty Indians and aboriginal Americans must be considered in determining whether an allocation is fair and equitable (50 CFR 600.325⁴²).

The proposed action alternatives do not change sector allocations in the BSAI Pacific cod fishery, in that the allocation of 22.1 percent of the BSAI non-CDQ Pacific cod TAC to the trawl CV sector (as shown in Figure 2-2) would remain unchanged. Further, the proposed alternatives are structured to result in fair and equitable distribution of access privileges within the sector through use of historical qualification periods to determine initial QS allocations. However, there is the distinct possibility of incidental allocative effects as historically common patterns of annual reallocations between sectors, where an unused portion of the trawl CV allocation has been reallocated to the less than 60 feet LOA (<60') HAL/pot sector in eight of the ten most recent years 2004-2019, would likely be diminished in amount if not discontinued altogether under some potential combinations of elements and options within the range of alternatives being considered. This would not represent a change in the formal sector allocations, but it would be a change in historical patterns of use between sectors as seen over the 2004-2019 period. For this reason, the potential impacts to the <60' HAL/pot sector are included in the consideration of fishing communities, along with community ties to Alaska Native entities, including federally recognized tribes, where relevant. No changes to CDQ program allocations, intended to benefit Alaska Native coastal communities in the BSAI region, would be made under any of the proposed alternatives, elements, or options. At least some CDQ groups, however, may be otherwise affected due to ownership ties or other business relationships with harvesting, processing, or support sector entities likely to be directly or indirectly affected by the proposed action alternatives.

Given that the proposed action alternatives are focused on changes internal to an existing commercial fishery sector allocation within the BSAI Pacific cod trawl fishery, no direct or indirect impacts on the subsistence harvest, sharing, and use of BSAI Pacific cod fishery are anticipated, unless explicitly noted otherwise in the discussions below. Similarly, no direct or indirect impacts to the BSAI Pacific cod sport fishery are anticipated, so no stand-alone discussions of the BSAI Pacific cod subsistence or sport fisheries are provided in the fishing communities analysis.

2.8.9.1. Quantitative Indicators of Community Fishery Engagement and Dependency

The sections below provide quantitative participation information, within the bounds of confidentiality restrictions, for the communities most directly engaged in and dependent on relevant sectors of the BSAI Pacific cod fishery. Specifically, the individual sections include a series of tables containing a range of quantitative information describing the distribution of sector-specific community engagement (or participation) in and dependency (or reliance) on the BSAI Pacific cod fishery for the following sectors:

- BSAI Pacific cod trawl CVs
- Shore-based processors operating in Alaska accepting BSAI trawl-caught Pacific cod deliveries

⁴² The National Standard 4 guidelines referenced in this SIA, current as of September 30, 2020, are from the Electronic Code of Federal Regulations (CFR) Title 50, Chapter VI, Part 600, Subpart D, Section 600.325 (cited as 50 CFR 600.325) are available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=6b0acea089174af8594db02314f26914&mc=true&r=SECTION&n=se50.12.600_1325 accessed 10/2/2020.

- Other potentially affected sectors
 - BSAI Pacific cod HAL and pot <60' CVs
 - HAL C/Ps

Within this quantitative characterization of fishery participation, several simplifying assumptions were made. First, assignment of CVs to a region or community has been made based upon ownership address information as listed in the CFEC vessel registration files. Thus, some caution in the interpretation of this information is warranted. It is not unusual for vessels to have complex ownership structures involving more than one entity in more than one region. Further, the community of ownership address does not directly indicate where a vessel spends most of its time, purchases services, or hires its crew as, for example, some of the vessels with ownership addresses in the Pacific Northwest spend a great deal of time in Alaska ports and hire at least some crew members from these ports. The region or community of ownership address does, however, provide a rough indicator of the direction or nature of ownership ties (and a proxy for associated economic activity, as no existing datasets provide consistently collected time-series information on where CV expenditures on support services are made), especially when patterns are viewed at the sector or vessel class level. The trawl CV discussion includes the limited CV crew data that is available for this sector, which is useful in understanding the geographic footprint of sector employment and earnings (and potentially where earnings are at least in part spent).

Ownership location has been chosen for this analysis as the link of vessels to communities rather than other indicators, such as vessel homeport information, based on previous Council FMP SIA experience (e.g., AECOM 2010) that has indicated the problematic nature of existing homeport data. While CV ownership address reported in CFEC data⁴³ is the primary link of vessels to communities used in the analysis, information on the geography of LLP license distribution is also presented. Specifically, LLP licenses actively used in the fishery have been assigned to communities based on license ownership address as it appears in the Alaska Regional Office RAM Program LLP license database to illustrate the differences in patterns of the two indicators. “Cross-walk” tables showing the correspondence of CV ownership address communities to LLP license ownership address communities as well as CV ownership address communities to CV homeports as reported in CFEC vessel registration data (similar to the tables showing correspondence of CV ownership address communities to crew residence communities) are also provided for the incremental information that they may contribute.

For shore-based processors, regional or community designation was based on the operating location of the plant (rather than ownership address) to provide a relative indicator of the local volume of fishery-related economic activity, which can also serve as a rough proxy for the relative level of associated employment, income, and local government revenues. There are, however, considerable limitations on the data that can be utilized for these purposes, based on confidentiality restrictions. A prime example of this is where a community is the site of one or two shore-based processors active in a community in a given year. No information can be disclosed about the volume and/or value of landings in those communities. In the few cases where operational location information is known, floating processors are grouped with shore-based processors by community and that grouping is noted on the relevant table(s). In all other cases, floating processor activity in this analysis is associated with the Seattle MSA, which is the location of ownership address for all relevant floating processors.

As noted in Section 2.8.7.8, two C/Ps are qualified to act as motherships and regularly accept deliveries of BSAI Pacific cod from trawl CVs under Amendment 120, one of which is owned by a firm that is part of the AFA C/P cooperative and the other of which is owned by firm that is part of the Amendment 80 cooperative program. As further noted in that same section, one of the C/Ps typically took deliveries from CVs that were owned by the same firm, while the other contracted with outside CVs to deliver Pacific

⁴³ While the datasets are largely consistent, there are sometimes minor differences in the community of vessel ownership address between CFEC and FFP files in a given year. Where potentially relevant to this community analysis, these cases are noted where they occur.

cod. As there are only two entities involved, all volume and value data with respect to this sector are confidential. Given this constraint and the fact that both vessels are associated with the Seattle MSA, the “C/Ps acting as motherships” sector is not further considered in this community analysis, aside from noting the Seattle MSA linkage in relevant subsections below.

2.8.9.1.1. BSAI Pacific Cod Trawl Catcher Vessels

The following tables provide a series of quantitative indicators of sector engagement in and dependency on the BSAI Pacific cod trawl fishery, by community and/or regional geography depending on data confidentiality restrictions, for BSAI Pacific cod trawl CVs with local ownership addresses, as noted in the following paragraphs. For Alaska communities, overall community CV fleet dependency is also shown to the extent possible within data confidentiality restrictions.

Table 2-47 provides a count, by community of historical ownership address and year (2004-2019), of BSAI Pacific cod trawl CVs for all Alaska communities with any vessels active in the fishery in any given year during this time, as well as for the Seattle metropolitan area, as defined by the Seattle Metropolitan Statistical Area (Seattle MSA⁴⁴); Washington communities outside of the Seattle MSA combined; Newport, Oregon; Oregon communities other than Newport combined; and all other states/unknown combined. For each geography, annual average counts and percentages of the grand total are also provided, along with a count of unique vessels, which may be indicative of continuity of participation (or lack thereof) at the vessel level. As shown, vessel ownership among states is heavily concentrated in Washington, and specifically within the Seattle MSA, while within Alaska and Oregon, vessel ownership is concentrated in Kodiak and Newport, respectively. Vessel count data for 2020 have been added for comparative purposes, but as none of the proposed action alternatives or options include 2020 in the range of historical participation qualifying years, these data are not included in annual average calculations or unique vessel counts.

Table 2-47 BSAI Pacific cod trawl CVs by community of vessel historical ownership address, 2004-2019 (number of vessels)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020**	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
Kodiak	3	3	0	0	1	0	1	6	7	5	2	3	3	6	6	7	2	3.1	5.7%	11
Sand Point	2	2	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0.6	1.1%	3
Unalaska/Dutch Harbor	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1%	1
Anchorage/Girdwood	0	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4%	2
Petersburg	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.1	0.2%	1
Alaska Total	5	7	2	3	2	4	2	6	7	5	2	3	3	6	6	7	2	4.1	7.6%	17
Seattle MSA*	45	39	37	43	46	36	33	30	35	35	37	35	43	44	48	41	37	36.9	67.9%	78
Other Washington	8	2	4	6	4	5	3	5	2	4	2	2	2	2	2	3	3	3.3	6.1%	13
Washington Total	53	41	41	49	50	41	36	35	37	39	39	37	45	46	50	44	40	40.2	73.9%	86
Newport	11	10	9	10	10	8	7	8	8	8	6	6	7	7	6	6	5	7.5	13.7%	15
Other Oregon	4	3	2	0	1	0	1	0	1	1	1	1	1	2	2	3	3	1.4	2.5%	9
Oregon Total	15	13	11	10	11	8	8	8	9	9	7	7	8	9	8	9	8	8.8	16.2%	21
Other States/Unknown	4	3	2	2	2	1	2	1	1	0	0	1	0	0	1	1	1	1.2	2.3%	6
Grand Total	77	64	56	64	65	54	48	50	54	53	48	48	56	61	65	61	51	54.4	100.0%	113

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

**2020 data added for comparative purposes but are not included in average annual calculations or unique vessel counts (see text).

Note: Due to ownership movement between communities over the years shown, total unique catcher vessels per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

⁴⁴ The Seattle MSA encompasses all communities in King, Pierce, and Snohomish counties, Washington.

Outside of Kodiak, engagement of multiple Alaska communities in the BSAI Pacific cod trawl fishery through participation of vessels with local ownership addresses has declined over time. While two or, in one case, three Alaska communities had CVs with local ownership addresses participated in the fishery each year 2004-2010, no Alaska community outside of Kodiak has been listed as the ownership address of any BSAI Pacific cod trawl CVs in the most recent nine years covered by the data (2011-2019) and all have an annual average of less than one vessel active in the fishery over the span of years shown. Of the Alaska communities outside of Kodiak appearing in the data 2004-2010, Sand Point appears in six of those seven years and with more than one vessel active in the fishery for three of those years. In contrast, Kodiak had no local ownership address vessels active in the fishery in three of the seven years 2004-2010 but has had at multiple vessels active every year 2011-2019, with six or seven vessels active in five of those 10 years.

Table 2-48 provides BSAI Pacific cod trawl CV ex-vessel gross revenue information by ownership address community and year (2004-2019) to the extent possible within data confidentiality restrictions, along with annual averages in terms of inflation-adjusted dollars and percentages of the grand total for all geographies combined. Given the few CVs with historical ownership addresses outside of Kodiak, the Seattle MSA, and Newport, Oregon, little can be shown at the community level. The overall pattern of distribution of revenue is clear, however, with Alaska ownership address vessels accounting for about three percent of the grand total of annual average ex-vessel gross revenue, with Washington and Oregon ownership address vessels accounting for roughly three-quarters and one-fifth of all CV trawl-caught BSAI Pacific cod ex-vessel gross revenue, respectively. Ex-vessel gross revenue data for 2020 have been added for comparative purposes but as none of the proposed action alternatives, elements, or options include 2020 in the range of historical qualifying years, these data are not included in annual average calculations.

Table 2-48 BSAI Pacific cod trawl CVs ex-vessel gross revenue by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020***	Annual Average 2004-2019 (\$ millions)	Annual Average 2004-2019 (percent)
	Kodiak	**	\$1.02	\$0.00	\$0.00	*	\$0.00	*	\$0.46	\$1.62	\$1.17	*	\$0.16	\$0.34	\$1.13	\$1.26	\$1.04	*	\$0.55
Other Alaska	*	\$0.55	*	\$0.13	*	\$0.53	*	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.14	0.58%
Alaska Total	\$0.45	\$0.32	*	\$0.13	*	\$0.53	*	\$0.58	\$1.57	\$1.14	*	\$0.16	\$0.48	\$1.44	\$1.49	\$1.04	*	\$0.68	2.89%
Seattle MSA****	\$14.07	**	\$18.74	\$24.19	\$28.62	\$10.93	\$10.24	\$14.19	**	\$14.38	**	**	**	**	**	\$13.02	\$10.47	\$16.37	69.54%
Other Washington	\$2.00	*	\$1.41	\$1.47	\$1.89	\$0.69	\$0.60	\$2.10	*	\$1.43	*	*	*	*	*	\$0.86	\$1.39	\$1.18	5.01%
Washington Total	\$16.07	\$12.81	\$20.16	\$25.67	\$30.51	\$11.62	\$10.84	\$16.29	\$20.51	\$15.81	\$18.22	\$13.20	\$18.27	\$17.53	\$19.42	\$13.88	\$11.86	\$17.55	74.55%
Newport OR	\$4.83	\$4.96	\$6.25	\$5.67	\$5.80	**	\$2.86	**	\$6.97	\$4.65	\$4.17	\$3.15	\$4.31	\$3.86	\$3.36	\$2.39	\$1.75	\$4.50	19.12%
Other OR & Other States	\$1.34	\$2.10	**	*	**	*	*	*	*	*	*	*	*	*	\$0.81	\$0.78	**	\$0.81	3.43%
Grand Total	\$22.69	\$20.19	\$27.97	\$32.00	\$39.04	\$15.26	\$14.52	\$23.25	\$30.16	\$22.12	\$22.84	\$16.66	\$23.39	\$23.40	\$25.09	\$18.10	\$14.93	\$23.54	100.00%

* Denotes confidential data.

** Data suppressed to protect confidential data in other cells.

***2020 data added for comparative purposes but are not included in average annual calculations (see text).

****Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-49 provides information on BSAI Pacific cod trawl CV dependency on BSAI Pacific cod compared to all other areas, gear types, and species fished by those same vessels, as measured by percentage contribution to annual average ex-vessel gross revenue to the extent possible within data confidentiality restrictions. As shown, dependency on trawl-caught BSAI Pacific cod ranged widely across geographies, but dependency is relatively modest for Alaska address vessels when compared to those from other states. This is consistent with the primary historical focus of Kodiak ownership address trawl vessels on GOA rather than BSAI trawl fisheries. It is important to note, however, that the importance of a fishery to the operations of vessels (and processors) is not just a function of percentage contribution to overall gross revenues as, for example, a fishery may contribute revenue during what

would otherwise be a slow time of year, which could be important for covering fixed costs, helping to make or keep the vessel ready for the next major fishery, employment/retention of crew, and/or maintaining favorable business relationships with processors, among other factors. In addition to this type of diversity information being useful (in combination with the data presented in previous annual participation and annual ex-vessel gross revenue tables) for understanding historical fishing practices in, and dependence on, the BSAI Pacific cod trawl CV fishery, it is also useful as one gauge of the existing capacity of fishing vessels used in the BSAI Pacific cod trawl fishery to engage in other fisheries.

Table 2-49 BSAI Pacific cod trawl CVs ex-vessel gross revenue diversification by community of vessel historical ownership address, all communities, 2004-2019 (millions of 2019 real dollars)

Geography	Annual Average Number of BSAI Pcod Trawl CVs 2004-2019	BSAI Pcod Trawl CVs Annual Average Ex-Vessel Gross Revenues from BSAI Pcod Only 2004-2019 (\$ millions)	BSAI Pcod Trawl CVs Annual Average Total Ex-Vessel Gross Revenues from All Area, Gear, and Species Fisheries 2004-2019 (\$ millions)	BSAI Trawl Pcod CVs BSAI Pcod Ex-Vessel Value as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Alaska Total	4.1	\$0.68	\$8.35	8.17%
Seattle MSA*	36.9	\$16.37	\$96.69	16.93%
Other Washington	3.3	\$1.18	\$4.14	28.44%
Washington Total	40.2	\$17.55	\$100.84	17.40%
Newport OR	7.5	\$4.50	\$19.37	23.24%
Other OR & Other States	2.6	\$0.81	\$6.02	13.43%
Grand Total	54.4	\$23.54	\$134.57	17.49%

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-50 provides information on overall community CV fleet dependency on trawl-caught BSAI Pacific cod. This table includes all commercial fishing CVs, not just vessels that participated in the BSAI Pacific cod trawl fishery for those communities that had at least local ownership address BSAI Pacific cod trawl CV participating in the fishery in any year 2004-2019. It compares the ex-vessel revenue from trawl-caught BSAI Pacific cod to ex-vessel revenue from all other areas, gear types, and species fished by all commercial fishing vessels with ownership addresses in that same community. As shown, for Alaska, that dependency is less than one percent.⁴⁵ In contrast, Newport, Oregon ownership address community fleet is relatively more dependent on the BSAI Pacific cod trawl fishery, as measured by contribution to total ex-vessel gross revenues, than the other communities or aggregations of communities shown.

⁴⁵ If the ex-vessel gross revenue data BSAI Pacific cod trawl vessels with Sand Point, Unalaska/Dutch Harbor, Anchorage/Girdwood, and Petersburg ownership address were removed from the Alaska data (as they were not active in the fishery in recent years) as well as the community fleet-level data for those communities and the just the ex-vessel gross revenue of Kodiak ownership address vessels active in the BSAI Pacific cod trawl fishery was compared against the larger Kodiak community fleet alone, the percentage dependency of the Kodiak community fleet alone would still be less than one percent.

Table 2-50 BSAI Pacific cod trawl CV and all CV ex-vessel gross revenue diversification by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars)

Geography	Annual Average Number of BSAI Pcod Trawl CVs 2004-2019	Annual Average Number of All Commercial Fishing CVs in those Same Communities (the "Community CV Fleet") 2004-2019	All Commercial Fishing CVs Annual Average Ex-Vessel Gross Revenues from BSAI Pcod Trawl Only 2004-2019 (\$ millions)	All Commercial Fishing CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2004-2019 (\$ millions)	All Commercial Fishing Vessels BSAI Pcod Trawl Ex-Vessel Gross Revenue as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Alaska Total	4.1	878.5	\$0.68	\$281.27	0.24%
Seattle MSA*	36.9	381.3	\$16.37	\$625.41	2.62%
Other Washington	3.3	56.3	\$1.18	\$56.28	2.09%
Washington Total	40.2	437.5	\$17.55	\$681.69	2.57%
Newport OR	7.5	18.1	\$4.50	\$32.90	13.68%
Other OR and Other States	2.6	54.7	\$0.81	\$19.58	4.13%
Grand Total	54.4	1,388.8	\$23.54	\$1,015.44	2.32%

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

BSAI Pacific Cod Trawl Catcher Vessel AFA Status

Table 2-51 provides information on the AFA status of BSAI Pacific cod trawl CVs by community and region of ownership address. All else being equal, AFA status would likely reduce the vulnerability of individual vessels to adverse impacts, if any, of the proposed alternatives through co-op or other internal vessel class compensation mechanisms and/or separate accounting of PSC thresholds unique to that vessel class (thereby insulating these vessels somewhat from adverse consequences of actions of vessels outside of their restricted class over which they have very little influence or control). As shown, while the percentage of AFA vessels among local ownership address BSAI Pacific cod trawl CVs varies by geography, AFA vessels make up over three-quarters of all relevant vessels for all geographies combined, over two-thirds of all relevant vessels for all individual geographies except for Alaska (and the one-vessel in the residual "other states" category), and four out of seven of the Alaska vessels.

Table 2-51 BSAI Pacific cod trawl CV AFA program designation by community of vessel ownership address, 2019

Geography	Number of BSAI Pcod Trawl CVs			Percent of BSAI Pcod Trawl CVs		
	Total CVs	AFA Designation		Total CVs	AFA Designation	
		Yes	No		Yes	No
Kodiak AK	7	4	3	100.0%	57.1%	42.9%
Seattle MSA*	41	34	7	100.0%	82.9%	17.1%
Other Washington	3	2	1	100.0%	66.7%	33.3%
Washington Total	44	36	8	100.0%	81.8%	18.2%
Newport	6	5	1	100.0%	83.3%	16.7%
Other Oregon	3	2	1	100.0%	66.7%	33.3%
Oregon Total	9	7	2	100.0%	77.8%	22.2%
Other States	1	0	1	100.0%	0.0%	100.0%
Total	61	47	14	100.0%	77.0%	23.0%

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

BSAI Pacific Cod Trawl Catcher Vessel Crew

In the absence of EDR data for BSAI Pacific cod trawl CV crew employment and earnings, GOA EDR data are used for crew on trawl CVs that reported EDR data for the GOA and operated in the both the BSAI and GOA in the years 2015 through 2019 (the only years for which data are available). Table 2-52 provides the number of vessels by community of ownership address for which these data exist.

Table 2-52 BSAI Pacific cod trawl CVs for which EDR crew data exist, by community of CV ownership address, 2015-2019 (number of vessels)

Geography	2015	2016	2017	2018	2019	Total Unique Vessels
Kodiak, Alaska	2	3	6	6	7	7
Seattle MSA, Washington	12	16	18	20	16	24
Other Washington	2	2	2	2	1	4
Lincoln County, Oregon	2	2	4	5	5	7
Other States	1	0	0	1	1	2
Grand Total	19	23	30	34	30	43

Source: GOA trawl EDR data.

Table 2-53 provides information on the number of vessels that were active in the BSAI Pacific cod trawl fishery for which EDR data exist compared to the total number of vessels in the fishery. As shown, in the three most recent years for which EDR data are available, roughly half of the active vessels provided GOA EDR crew information. It was assumed that these data are still useful for rough numbers of crew members for the vessels for which data exist, as individual vessels likely had similar crews for both the BSAI and GOA trawl groundfish fisheries. However, it is unknown how representative vessels that fish both the GOA and the BSAI are of vessels that only fish the BSAI. Further, no BSAI-specific crew earnings data are available for any of the vessels, including those that reported GOA trawl EDR data.

Table 2-53 BSAI Pacific cod trawl CVs for which EDR crew data exist, as a percentage of all active BSAI Pacific cod trawl CVs, by year, 2015-2019

Active BSAI Pacific Cod Trawl Catcher Vessels	2015	2016	2017	2018	2019
Number of CVs included in existing (GOA Trawl) EDR data	19	23	30	34	30
Number of CVs not included in existing (GOA Trawl) EDR data	29	33	31	31	31
Total number of CVs	48	56	61	65	61
Percent of CVs included in existing EDR data	39.6%	41.1%	49.2%	52.3%	49.2%

Source: Previous tables.

Table 2-54 provides information on the correspondence of BSAI Pacific cod trawl CV ownership address community and the community of residence address provided by crew members on those vessels for the years 2015-2019 combined. As shown, 167 crew members reported being from 13 different Alaska communities, with the large majority (87 percent) working aboard either Kodiak (55 percent) or Seattle MSA (32 percent) ownership address vessels.⁴⁶

⁴⁶ For more detail on crew members by state and territory for the years 2015-2019 combined, see Table 8-3 (in Section 8.3). As shown in that table, crew members listed 21 states (and 1 territory) other than Alaska, Washington, and Oregon as their residence address over this period; total number communities as represented in the data by state is also provided.

Table 2-54 Crew members aboard BSAI Pacific cod trawl CVs for which EDR crew data exist by community of crew residence address and CV ownership address, all years 2015-2019 combined (number of distinct crew license numbers)

Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total
	Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States	
Kodiak	75	38	12	8	0	129
Chiniak	2	0	0	0	0	2
King Cove	0	1	0	0	0	1
Sand Point	0	2	0	0	0	2
Unalaska/Dutch Harbor	1	2	0	0	0	3
Kenai	0	1	0	0	0	1
Soldotna	0	2	0	0	0	2
Anchor Point	8	1	0	1	0	10
Anchorage/Girdwood	2	1	1	0	0	4
Palmer	4	3	0	2	0	9
Wasilla	0	0	0	1	0	1
Petersburg	0	3	0	0	0	3
Haines	0	0	0	1	0	1
Alaska Subtotal	92	54	13	12	0	167
Seattle MSA Washington	8	86	8	2	2	105
Other Washington	7	25	18	3	1	54
Washington Subtotal	15	111	26	5	3	159
Lincoln County Oregon	13	37	3	13	0	66
Other Oregon	11	19	1	6	1	38
Oregon Subtotal	24	56	4	19	1	104
Other States/Territories	12	46	1	1	1	61
Unknown	42	32	14	16	3	103
Grand Total	185	298	58	53	8	593

Source: GOA trawl EDR data.

Table 2-55 provides information on the correspondence of BSAI Pacific cod trawl CV ownership address community and the community of residence address provided by crew members on those vessels for 2019, the most recent year for which EDR data are available.⁴⁷ As shown, 45 crew members reported being from five different Alaska communities, with the large majority (73 percent) working aboard Kodiak ownership address vessels. Of the 38 crew members from Kodiak, 74 percent worked aboard vessels with Kodiak ownership addresses. Of the crew members from Alaska communities other than Kodiak, five out of eight worked aboard vessels with Kodiak ownership addresses.⁴⁸

⁴⁷ For information on the distribution of crew members by crew license type, see Table 8-5 (in Section 8.3), i.e., ADF&G crew licenses or CFEC gear operator permits. Skippers are required to have gear operator permits, but more than one person with a gear operator permit may be working on a vessel at any one time, whether the person who holds the permit is acting as a regular crew member (as some individual captain one vessel and crew on others) or is a relief captain/crew member, or the like.

⁴⁸ For information on individual years 2015-2018 showing year-to-year variability, see Table 8-4 (in Section 8.3).

Table 2-55 Crew members aboard BSAI Pacific cod trawl CVs for which EDR crew data exist by community of crew residence address and CV ownership address, 2019 (number of distinct crew license numbers)

Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total
	Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States	
Kodiak	28	6	0	5	0	38
Unalaska/Dutch Harbor	1	0	0	0	0	1
Anchor Point	3	0	0	1	0	4
Palmer	1	0	0	1	0	2
Haines	0	0	0	1	0	1
Alaska Subtotal	33	6	0	8	0	45
Seattle MSA Washington	4	23	0	1	1	28
Other Washington	4	4	0	2	0	10
Washington Subtotal	8	27	0	3	1	38
Lincoln County Oregon	2	5	0	2	0	9
Other Oregon	2	5	0	2	0	9
Oregon Subtotal	4	10	0	4	0	18
Other States/Territories	3	12	0	1	0	16
Unknown	15	8	1	9	2	33
Grand Total	63	63	1	25	3	150

Source: GOA trawl EDR data

While the EDR crew data presented in this section are suggestive, overall the unavailability of BSAI-specific data in combination of the total unavailability of data for roughly half of the CVs that participated in the BSAI Pacific cod trawl fishery in recent years (and less, if any, in less recent years) is a substantive obstacle to a comprehensive analysis of the human dimensions of the fishery. For example, because the data in the tables in this section were derived from vessels that are dependent, to some extent, on GOA fisheries, the Alaska component of the crew may be less on the vessels for which crew data do not exist, resulting in an overstatement of Alaska crew address as a percentage for the overall fleet in the current tables. Without the data, however, those types of assumptions/conclusions remain speculative.

BSAI Pacific Cod Trawl Catcher Vessels Making Deliveries to AI Shoreside Processors and BSAI Catcher/Processors Acting as Motherships

Trawl CVs with a history of making deliveries to AI shoreside processors (including shore-based processors and floating processors) or BSAI catcher/processors acting as motherships may be affected differently than other CVs under some potential combinations of elements and options within the range of alternatives being considered. These two sets of vessels are subsets of the set of vessels shown in Table 2-47.

Catcher vessels making deliveries to AI shoreside processors

The next three tables provide data on catcher vessels delivering to AI shoreside, shore-based, and floating processors, respectively. Table 2-56 provides information on the community of historical ownership address for CVs making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI shoreside processors, including both shore-based processors and floating processors, over the years 2004-2019. As shown, while three Alaska communities appear in the data as the CV ownership addresses in six of the first seven years covered by the data (2005-2010), these ties were to one vessel each and for one year in Kodiak, two years in Petersburg, and three years for Sand Point (and no two Alaska communities having vessels participate in this portion of the fishery in the same year). In contrast, the Seattle MSA appears in the data as the ownership address during at least one year for 36 of the 46 unique vessels making deliveries to AI shoreside processors during 2004-2019 and for the most recent nine years

covered by the data (2011-2019), all non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI shoreside-processors were made by CVs with Washington ownership addresses, with the exception of one vessel with a Newport ownership address in 2019 and one vessel with an ownership address in a state other than Alaska, Washington, or Oregon in 2018 and 2019.

Table 2-56 BSAI Pacific cod trawl CVs making deliveries to AI shoreside processors (shore-based and floating processors combined) by community of catcher vessel historical ownership address, 2004-2019 (number of vessels)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
Kodiak	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5%	1
Sand Point**	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.5%	1
Petersburg	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0.1	1.0%	1
Alaska Total	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0.4	3.0%	3
Seattle MSA*	14	12	18	22	22	20	17	6	10	6	4	0	0	0	9	7	10.4	84.8%	36
Other Washington	3	0	2	3	2	1	0	0	0	0	0	0	0	0	2	0	0.8	6.6%	5
Washington Total	17	12	20	25	24	21	17	6	10	6	4	0	0	0	11	7	11.3	91.4%	41
Newport	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	1.5%	1
Other Oregon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Oregon Total	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	1.5%	1
Other States/Unknown	1	1	1	1	1	0	1	0	0	0	0	0	0	0	1	1	0.5	4.1%	1
Grand Total	18	14	23	28	26	22	19	6	10	6	4	0	0	0	12	9	12.3	100.0%	46
Number of SBPRs + FLPRs	3	3	3	3	4	3	3	2	2	2	2	0	0	0	2	2	2.1	--	6

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

**The catcher vessel shown having a Sand Point ownership address in the primary dataset used for this analysis is shown in at least one other dataset as having a King Cove ownership address in those same years.

Note: Due to ownership movement between communities over the years shown, total unique catcher vessels per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-57 provides information on the community of historical ownership address for CVs making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI shore-based processors (only) over the years 2004-2019. As shown, while three Alaska communities appear in the data as the CV ownership addresses in four of the first six years covered by the data (2006-2009), these ties were to one vessel each and for one year each for Kodiak and Petersburg and in two years for Sand Point. In contrast, the Seattle MSA appears in the data as the ownership address during at least one year for 29 of the 37 unique vessels making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI shore-based processors during 2004-2019 and for the most recent 10 years covered by the data (2010-2019), all non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI shore-based processors were made by CVs with Washington ownership addresses. Also shown in the table, only one shore-based processing plant was in operation in the AI region during the period shown. While multiple processing entities operated the plant over this time, the same physical facility in the community of Adak was the site of each of these operations (and for this reason it is shown in this table in the fishing communities portion of the analysis as a single shore-based processor).⁴⁹

⁴⁹ The physical structures that have housed shore-based processing operations in Adak in the post-military installation era are owned by the Aleut Corporation and/or its subsidiaries. The processing entities that operated in those structures and received landings of BSAI CV trawl-caught Pacific cod over the period 2004-2019 were: (1) Adak Fisheries LLC, 2004-2009; (2) Adak Seafood LLC, 2010; (3) Icicle Seafoods Inc., 2012-2013; (4) Adak Cod Cooperative LLC, 2014; and (5) Golden Harvest Alaska Seafood LLC, 2018-2019.

Table 2-57 BSAI Pacific cod trawl CVs making deliveries to AI shore-based processors by community of catcher vessel historical ownership address, 2004-2019 (number of vessels)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
Kodiak	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8%	1
Sand Point**	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.6%	1
Petersburg	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.1	0.8%	1
Alaska Total	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0.3	3.2%	3
Seattle MSA*	12	8	9	16	13	15	2	0	9	6	3	0	0	0	7	5	6.6	84.0%	29
Other Washington	1	0	1	3	2	1	0	0	0	0	0	0	0	0	2	0	0.6	8.0%	3
Washington Total	13	8	10	19	15	16	2	0	9	6	3	0	0	0	9	5	7.2	92.0%	32
Newport	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8%	1
Other Oregon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Oregon Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.8%	1
Other States/Unknown	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.2	2.4%	1
Grand Total	13	8	12	22	17	17	2	0	9	6	3	0	0	0	10	6	7.8	100.0%	37
<i>Number of SBPRs</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0.8</i>	<i>--</i>	<i>1</i>

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

**The catcher vessel shown having a Sand Point ownership address in the primary dataset used for this analysis is shown in at least one other dataset as having a King Cove ownership address in those same years.

Note: Due to ownership movement between communities over the years shown, total unique catcher vessels per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-58 provides information on the community of historical ownership address for CVs making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to AI floating processors (only) over the years 2004-2019. As shown, two Alaska communities appear in the data as the CV ownership addresses for one vessel each in one year in this period (Sand Point 2005 and Petersburg 2010). In contrast, the Seattle MSA appears in the data as the ownership address during at least one year for 28 of the 35 unique vessels making deliveries to AI floating processors during 2004-2019 and for the most recent nine years covered by the data (2011-2019), all non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to floating processors were made by CVs with Washington ownership addresses, except for one vessel with a Newport ownership address in 2019. Also shown in the table, five unique AI floating processors were operating during this period, with two floaters operating 2004-2007 and 2009-2010, three in 2008, and one 2011-2014 and 2018-2019).

Table 2-58 BSAI Pacific cod trawl CVs making deliveries to AI floating processors by community of catcher vessel historical ownership address, 2004-2019 (number of vessels)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
Kodiak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Sand Point**	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	1.0%	1
Petersburg	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1	1.0%	1
Alaska Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.1	2.0%	2
Seattle MSA*	6	5	12	8	15	7	16	6	6	5	2	0	0	0	2	2	5.8	90.2%	28
Other Washington	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2.9%	3
Washington Total	8	5	13	8	15	7	16	6	6	5	2	0	0	0	2	2	5.9	93.1%	31
Newport	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	2.0%	1
Other Oregon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Oregon Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	2.0%	1
Other States/Unknown	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0.2	2.9%	1
Grand Total	9	7	14	8	15	7	18	6	6	5	2	0	0	0	2	3	6.4	100.0%	35
Number of FLPRs	2	2	2	2	3	2	2	1	1	1	1	0	0	0	1	1	1.3	--	5

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

**The catcher vessel shown having a Sand Point ownership address in the primary dataset used for this analysis is shown in at least one other dataset as having a King Cove ownership address in those same years.

Note: Due to ownership movement between communities over the years shown, total unique catcher vessels per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Catcher vessels making deliveries to BSAI catcher/processors acting as motherships

Table 2-59 provides information on the community of historical ownership address for CVs making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to BSAI catcher/processors acting as motherships over the years 2004-2019. As shown, Kodiak appears in the data as the CV ownership address for a single vessel in three of the first five years covered by the data (and this activity represents a single unique vessel). In contrast, the Seattle MSA appears in the data as the ownership address during at least one year for 19 of the 21 unique vessels making non-CDQ, federal fishery BSAI trawl-caught Pacific cod deliveries to BSAI catcher/processors acting as motherships during this period. Aside from the earlier Kodiak vessel participation, Seattle MSA ownership address vessels account for all activity on the table except for one unique Newport ownership address vessel that was active in 2012 and 2016 and one other vessel with an Oregon ownership address outside of Newport that was active in 2008 (only).

Table 2-59 BSAI Pacific cod trawl CVs making deliveries to BSAI catcher/processors acting as motherships by community of vessel historical ownership address, 2004-2019 (number of vessels)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
Kodiak	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	3.8%	1
Alaska Total	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	3.8%	1
Seattle MSA*	2	1	2	3	6	5	5	11	11	3	2	4	10	5	2	2	4.6	92.5%	19
Other Washington	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Washington Total	2	1	2	3	6	5	5	11	11	3	2	4	10	5	2	2	4.6	92.5%	19
Newport	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0.1	2.5%	1
Other Oregon	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	1.3%	1
Oregon Total	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0.2	3.8%	2
Other States/Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Grand Total	3	2	2	3	8	5	5	11	12	3	2	4	11	5	2	2	5.0	100.0%	21

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Note: Due to ownership movement between communities over the years shown, total unique catcher vessels per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Cross-Cutting BSAI Pacific Cod Trawl Catcher Vessel Quantitative Community Engagement Indicators

In addition to being home to BSAI Pacific cod trawl CVs with local ownership addresses active in the fishery and/or being home to crew members serving on those vessels, communities may be associated with the fishery in several other ways. These include:

- Being the community of ownership address of LLP licenses actively used in the fishery;
- Being the homeport of CVs actively engaged in the fishery;
- Being communities that are members of CDQ entities with ownership interest in CVs that either have participated in the fishery or that utilize LLP licenses may be affected by some potential combinations of elements and options within the range of alternatives being considered.

These are each detailed in turn below.

BSAI Pacific cod trawl CV LLP license ownership address communities

Table 2-60 provides information on the historical distribution of LLP licenses by community or region of ownership address. As with BSAI Pacific cod trawl vessel ownership, LLP license ownership among states is heavily concentrated in Washington, and specifically within the Seattle MSA, while within Alaska and Oregon, ownership is concentrated in Kodiak and Newport, respectively. Within Alaska, however, LLP license ownership address by community over time shows a different community pattern than was seen with CV ownership address by community over time.

Table 2-60 BSAI Pacific cod trawl CV active LLP licenses by year, by community of license historical ownership address, 2004-2019 (number of licenses)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Licenses 2004-2019 (number)
Kodiak	3	2	0	0	1	0	1	5	6	4	0	2	1	4	4	5	2.4	4.0%	9
False Pass	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	0.5%	1
Sand Point	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1%	1
Homer	0	0	0	0	0	0	0	1	1	1	0	0	1	1	1	1	0.4	0.7%	1
Juneau/Douglas	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1%	1
Alaska Total	4	4	1	2	2	0	1	6	7	5	0	2	2	5	5	6	3.3	5.5%	11
Seattle MSA*	45	42	42	45	45	35	32	31	38	37	43	40	47	48	51	49	41.9	71.1%	90
Other Washington	3	4	4	3	4	4	3	4	4	6	3	3	3	4	1	3	3.5	5.9%	4
Washington Total	48	46	46	48	49	39	35	35	42	43	46	43	50	52	52	52	45.4	77.1%	90
Newport	9	7	7	7	8	7	7	7	7	7	6	6	7	6	6	7	6.9	11.8%	13
Other Oregon	5	4	1	2	3	1	1	2	2	1	2	2	2	2	2	2	2.1	3.6%	5
Oregon Total	14	11	8	9	11	8	8	9	9	8	8	8	9	8	8	9	9.1	15.4%	18
Other States/Unknown	5	2	3	2	1	1	1	1	1	0	0	0	0	0	1	1	1.2	2.0%	1.2
Grand Total	71	63	58	61	63	48	45	51	59	56	54	53	61	65	66	68	58.9	100.0%	108

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Note: Due to ownership movement between communities over the years shown, total unique LLP licenses per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

While Kodiak is the state center of ownership location in both CV ownership address and LLP license ownership address and in both instances the diversity of Alaska community participation declined over time, three of the four communities outside of Kodiak are different in the two cases.

Anchorage/Girdwood, Petersburg, and Unalaska/Dutch Harbor,⁵⁰ which appear in the data as CV ownership address communities are absent in the active LLP license ownership community data. On the other hand, False Pass, Homer, and Juneau/Douglas, absent in the CV ownership address information, are shown as being communities with ownership addresses of LLP licenses actively used in the fishery. Sand Point appears in both ownership sets, but while it is a CV ownership address community in six years (2004-2009), it appears only as the ownership address community of one active LLP license in one year (2007). Further, while False Pass is shown as the ownership address of one active LLP license each year 2004-2008 and Juneau/Douglas appears as the ownership address of one active LLP license in one year (2005), no LLP licenses actively used in the fishery were shown as having an ownership address in any Alaska community in 2009 or 2014. After 2008, active LLP license ownership addresses within Alaska are limited to Kodiak and Homer. Aside from 2014, both Kodiak and Homer were the location of LLP licenses actively used in the BSAI Pacific cod trawl fishery each year 2011-2019, except 2015 when two Kodiak ownership address LLP licenses were the only Alaska ownership address licenses actively used in the fishery.

⁵⁰ In most Council SIAs and community analyses, the term “Unalaska” is typically used to refer to the City of Unalaska including its port of Dutch Harbor, which is fully encompassed within the municipal boundaries of the City of Unalaska. Within some fishery data sources, however, Unalaska and Dutch Harbor fishery statistics are reported separately, as there are separate Unalaska and Dutch Harbor mailing addresses and zip codes. In this RIR, those statistics are combined for reporting as they represent two components of the same community and the term “Unalaska/Dutch Harbor” is consistently used for the community to clearly signify that those separate data values have been combined. It is understood that use of the name “Unalaska” for the community is more technically accurate and otherwise preferred as the name for the community, especially by Alaska Native and other long-term residents of the community. No disrespect or discounting of those preferences is implied by the use of the term Unalaska/Dutch Harbor in this document.

The following two tables show the distribution of licenses with non-transferable and transferable AI endorsements that are associated with CVs greater than or equal to 60 feet LOA ($\geq 60'$) and $<60'$ CVs, respectively. These two types of LLP license AI endorsements were awarded under Amendment 92 and were intended to continue to foster shoreside deliveries of Pacific cod in an area that has seen limited opportunities for deliveries to shore-based processors operating in local communities in recent years⁵¹ and to provide opportunities for small trawl vessel operators. While these two sets of LLP licenses with non-transferable and transferable AI endorsements, respectively, are subsets of the larger set of 108 LLP licenses shown in Table 2-60, the following two tables show community of historical ownership address for each year 2004-2019 regardless of whether or not that license was actively used in the fishery during that year (unlike Table 2-60, which shows only LLP licenses that were active in any given year).

Table 2-61 provides information on the distribution of BSAI Pacific cod trawl $\geq 60'$ catcher vessel LLP licenses with non-transferable AI endorsements by community or region of license historical ownership address. As shown, the four unique licenses in this category have exclusively had Washington ownership addresses during the most recent 12 years covered by the data (2008-2019). During the years 2004-2007, three of the four licenses had a Washington ownership address and the fourth had an ownership address in a state other than Alaska, Washington, or Oregon. Each of these four licenses was awarded a non-transferable AI endorsement when Amendment 92 became effective in 2009 and each of the four already had a BS trawl endorsement at that time.

Table 2-61 BSAI Pacific cod trawl $\geq 60'$ CV non-transferable AI endorsed licenses by year, by community of license historical ownership address, 2004-2019 (number of licenses)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Licenses 2004-2019 (number)
Alaska Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Seattle MSA*	0	0	0	0	0	0	0	0	1	1	1	2	2	2	2	2	0.8	20.3%	2
Other Washington	3	3	3	3	4	4	4	4	3	3	3	2	2	2	2	2	2.9	73.4%	4
Washington Total	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	3.8	93.8%	4
Oregon Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Other States/Unknown	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3	6.3%	1
Grand Total	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4.0	100.0%	4

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Note: Due to ownership movement between communities over the years shown, total unique licenses per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-62 provides information on the distribution of BSAI Pacific cod trawl $<60'$ CV LLP licenses with transferable AI endorsements by community or region of license historical ownership address. As shown, Anchorage/Girdwood appears in the data as the ownership address of a single license with a transferable AI endorsement for the first 14 of the 16 years covered by the data and Juneau/Douglas does so for the most recent five years covered by the data, for a total of two unique licenses with Alaska ownership addresses over the period. In contrast, the Seattle MSA appears in the data as the ownership address during at least one year during this period for seven of the eight unique licenses with AI endorsements. No transferable AI endorsed licenses had ownership addresses in Oregon or any state other than Alaska, Washington, or Oregon 2004-2019, although 2018 and 2019 ownership address information is missing for one relevant LLP license in the dataset used for this analysis (and is thus shown in the “Other States/Unknown” category in the table). Each of the eight relevant licenses was awarded a transferable AI

⁵¹ Adak and Atka are the only two communities in the region that have been the location of operating shore-based processing plants in recent years. The only shore-based processing entities in the region that have accepted BSAI non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries to date have been located in Adak.

endorsement when Amendment 92 became effective in 2009, with individual licenses varying in their existing set of other endorsements at that time. In addition to the transferable AI endorsements at present: one license also has trawl and non-trawl endorsements in each of the BS, Central GOA, and Western GOA regions; one has a non-trawl BS endorsement and trawl and non-trawl endorsements in both the Central GOA and Western GOA regions; two have trawl and non-trawl endorsements in both the Central GOA and Western GOA regions (but neither trawl or non-trawl BS endorsements); one has trawl and non-trawl endorsements in the Central GOA and a non-trawl endorsement in Western GOA (and neither trawl nor non-trawl BS endorsements); and the remaining three licenses have trawl endorsements in the Central GOA and the Western GOA (but no non-trawl endorsements in the Central GOA or Western GOA and none of the three have trawl or non-trawl BS endorsements).

Table 2-62 BSAI Pacific cod trawl <60' CV licenses with transferable AI endorsements by year, by community of license historical ownership address, 2004-2019 (number of licenses)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Licenses 2004-2019 (number)
	Anchorage/Girdwood	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0.9	10.9%
Juneau/Douglas	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0.3	3.9%	1
Alaska Total	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1	1.2	14.8%	2
Seattle MSA*	5	5	5	5	5	5	5	6	6	6	6	5	5	5	4	4	5.1	64.1%	7
Other Washington	2	2	2	2	2	2	2	1	1	1	1	1	1	1	2	2	1.6	19.5%	3
Washington Total	7	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	6.7	83.6%	7
Oregon Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Other States/Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	1.6%	1
Grand Total	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8.0	100.0%	8

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Note: Due to ownership movement between communities over the years shown, total unique licenses per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-63 shows the correspondence between BSAI Pacific cod trawl CV ownership address community and community of ownership address of the LLP license or licenses used by those vessels in the BSAI Pacific cod trawl fishery in 2019. In most instances, where more than one LLP license was used on a given vessel, those licenses had a common community of ownership address, with the few exceptions described in the table notes. The grand totals shown in this table, unlike the previous table, reflect the total count of active vessels that used the licenses rather than a total count of active licenses. As shown, patterns of correspondence between vessel and license ownership address vary by state. Alaska ownership address vessels were limited to Kodiak ownership addresses, but these seven vessels used LLP licenses with Kodiak (5), Homer (1), and Oregon (1) ownership addresses. All 44 Washington ownership address vessels used only Washington ownership address LLP licenses; the nine vessels with Oregon ownership addresses used LLP licenses with Oregon (6) and Washington (3) ownership addresses.

Table 2-63 Correspondence of community of vessel ownership address and community of LLP license ownership address of BSAI Pacific cod trawl CVs, 2019

Catcher Vessel Ownership Address	LLP License Ownership Address							Grand Total
	Alaska		Washington		Oregon		Other/ Unknown	
	Kodiak	Homer	Seattle MSA	Other Washington	Newport Oregon	Other Oregon		
Kodiak, Alaska	5	1	0	0	0	1	0	7
Seattle MSA*	0	0	38	3	0	0	0	41
Other Washington	0	0	2	1	0	0	0	3
Washington Total	0	0	40	4	0	0	0	44
Newport	0	0	1	0	5	0	0	6
Other Oregon	0	0	2	0	0	1	0	3
Oregon Total	0	0	3	0	5	1	0	9
Other States/Unknown	0	0	0	0	0	0	1	1
Grand Total	5	1	43	4	5	2	1	61

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties .

Note: Due to ownership movement between communities, cell counts may not sum to state or grand totals. For vessels that utilized multiple licenses, data were cleaned by defaulting to the same community for all duplicates. In two instances, the license ownership communities differed for two licenses utilized by the same vessel. In one case, there was one Newport and one Other Oregon license address that was flagged as Newport for this table; in the other, there was one Seattle MSA and one Other Washington license address that was flagged as Seattle MSA for this table. In a separate situation, one LLP license appeared in one dataset with a Kodiak ownership address and another with an Anchorage/Girdwood ownership address; it was assigned a Kodiak address for this table based on a judgement call informed by general knowledge of the history of the license and the vessel with which it is associated.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-64 shows the correspondence between BSAI Pacific cod trawl $\geq 60'$ CV ownership address community and community of ownership address of licenses with non-transferable AI endorsements used on those vessels in 2019. As shown, ownership addresses of the relevant four vessels are equally divided between Washington and Oregon, while the ownership addresses of the relevant four LLP licenses are exclusively in Washington.

Table 2-64 Correspondence of community of BSAI Pacific cod trawl $\geq 60'$ catcher vessel ownership address and community of ownership address of licenses with non-transferable AI endorsements, 2019

Catcher Vessel Ownership Address	Non-Transferable AI Endorsed License Ownership Address						Grand Total
	Alaska	Washington		Oregon		Other/ Unknown	
		Seattle MSA	Other Washington	Newport Oregon	Other Oregon		
Alaska Total	0	0	0	0	0	0	0
Seattle MSA*	0	1	0	0	0	0	1
Other Washington	0	0	1	0	0	0	1
Washington Total	0	1	1	0	0	0	2
Newport	0	0	1	0	0	0	1
Other Oregon	0	1	0	0	0	0	1
Oregon Total	0	1	1	0	0	0	2
Other States/Unknown	0	0	0	0	0	0	0
Grand Total	0	2	2	0	0	0	4

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties .

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-65 shows the correspondence between BSAI Pacific cod trawl $< 60'$ CV ownership address community and community of ownership address of licenses with transferable AI endorsements used on those vessels in 2019. As shown, ownership of the relevant eight vessels is concentrated in Washington and states other than Alaska, Washington, and Oregon, although one of the licenses has a Juneau/Douglas ownership address (which is that of a CDQ group).

Table 2-65 Correspondence of community of BSAI Pacific cod trawl <60' catcher vessel ownership address and community of ownership address of licenses with transferable AI endorsements, 2019

Catcher Vessel Ownership Address	Transferable AI Endorsed License Ownership Address						Grand Total
	Juneau/Douglas Alaska	Washington		Oregon		Other/ Unknown	
		Seattle MSA	Other Washington	Newport Oregon	Other Oregon		
Alaska Total	0	0	0	0	0	0	0
Seattle MSA*	0	4	0	0	0	0	4
Other Washington	0	0	2	0	0	0	2
Washington Total	0	4	2	0	0	0	6
Oregon Total	0	0	0	0	0	0	0
Other States/Unknown	1	0	0	0	0	1	2
Grand Total	1	4	2	0	0	1	8

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

BSAI Pacific cod CV trawl vessel homeports

Table 2-66 shows the correspondence between BSAI Pacific cod trawl CV ownership address community and the homeport of those vessels for 2019. As shown, all vessels with Alaska ownership addresses are also homeported in Alaska and, for all but one, ownership address community and homeport are the same (Kodiak), with the exception being a vessel with a Kodiak ownership address and a homeport of Sand Point. For vessels with Oregon ownership addresses, all but one are homeported in Oregon (with the exception being a Newport ownership address vessel homeported in Kodiak). Of the 41 vessels with Seattle MSA ownership addresses, roughly one-quarter (10 vessels) are homeported in Alaska, with seven out of the 10 homeported in Kodiak. Of the total of 14 vessels homeported in Kodiak, more than half (eight vessels) have ownership addresses in the Pacific Northwest.

Table 2-66 Correspondence of community of vessel ownership address and homeport of BSAI Pacific cod trawl CVs, 2019

Catcher Vessel Ownership Address	Homeport										Grand Total
	Alaska						Washington		Oregon		
	Anchorage	Juneau	Kodiak	Petersburg	Sand Point	Unalaska/ Dutch Hbr	Seattle MSA	Other WA	Newport Oregon	Other OR	
Kodiak, Alaska	0	0	6	0	1	0	0	0	0	0	7
Seattle MSA*	2	1	7	0	0	2	28	1	0	0	41
Other Washington	0	0	0	0	0	0	2	1	0	0	3
Washington Total	2	1	7	0	0	2	30	2	0	0	44
Newport	0	0	1	0	0	0	0	0	4	1	6
Other Oregon	0	0	0	0	0	0	0	0	2	1	3
Oregon Total	0	0	1	0	0	0	0	0	6	2	9
Other States/Unknown	0	0	0	1	0	0	0	0	0	0	1
Grand Total	2	1	14	1	1	2	30	2	6	2	61

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Note: Due to ownership movement between communities, cell counts may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-67 shows the correspondence between BSAI Pacific cod trawl $\geq 60'$ CV ownership address community for those vessels utilizing licenses with non-transferable AI endorsements and homeport of those same vessels in 2019. As shown, while ownership of the relevant four vessels is divided equally between Washington and Oregon, the homeports of those vessels include Kodiak in addition to communities in Washington and Oregon.

Table 2-67 Correspondence of community of vessel ownership address and homeport of BSAI Pacific cod trawl ≥60' CVs utilizing licenses with non-transferable AI endorsements, 2019

Catcher Vessel Ownership Address	Homeport						Grand Total
	Kodiak Alaska	Washington		Oregon		Other/ Unknown	
		Seattle MSA	Other Washington	Newport Oregon	Other Oregon		
Alaska Total	0	0	0	0	0	0	0
Seattle MSA*	0	1	0	0	0	0	1
Other Washington	0	0	1	0	0	0	1
Washington Total	0	1	1	0	0	0	2
Newport	1	0	0	0	0	0	1
Other Oregon	0	0	0	1	0	0	1
Oregon Total	1	0	0	1	0	0	2
Other States/Unknown	0	0	0	0	0	0	0
Grand Total	1	1	1	1	0	0	4

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 2-68 shows the correspondence between BSAI Pacific cod trawl <60' CV ownership address community for those vessels utilizing licenses with transferable AI endorsements and homeport of those same vessels in 2019. As shown, while ownership of the relevant eight vessels is concentrated in Washington and states other than Alaska, Washington, and Oregon, five of the eight vessels were homeported in three different Alaska communities.

Table 2-68 Correspondence of community of vessel ownership address and homeport of BSAI Pacific cod trawl <60' CVs utilizing licenses with transferable AI endorsements, 2019

Catcher Vessel Ownership Address	Homeport								Grand Total
	Alaska			Washington		Oregon		Other/ Unknown	
	Kodiak	Sand Point	Petersburg	Seattle MSA	Other Washington	Newport Oregon	Other Oregon		
Alaska Total	0	0	0	0	0	0	0	0	0
Seattle MSA*	0	2	0	2	0	0	0	0	4
Other Washington	0	1	0	0	1	0	0	0	2
Washington Total	0	3	0	2	1	0	0	0	6
Oregon Total	0	0	0	0	0	0	0	0	0
Other States/Unknown	1	0	1	0	0	0	0	0	2
Grand Total	1	3	1	2	1	0	0	0	8

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

CDQ entities with ownership interest in relevant BSAI trawl catcher vessels

CDQ entities have a variety of ownership ties to BSAI trawl catcher vessels that may be impacted under different potential combinations of elements and options within the range of alternatives being considered. These include BSAI Pacific cod trawl CVs that directly participate in the non-CDQ directed cod fishery and BSAI trawl CVs that do not participate in the non-CDQ directed cod fishery but that lease out their AFA BSAI Pacific cod sideboard allocations, which provides the CDQ ownership entities with a revenue stream used to fund an array of CDQ programs. The pattern of ownership in these two sets of

BSAI trawl CVs varied by CDQ group in 2019 as reported by each CDQ management staff and/or in the relevant CDQ 2019 annual reports⁵² are summarized in the following bullet points:

- The **Aleutian Pribilof Island Development Association** (APICDA) does not currently have an ownership interest in any BSAI trawl CVs in either category but did have an ownership interest in one relevant CV during some previous years in the 2004-2019 era (and may again in future years).
- The **Bristol Bay Economic Development Corporation** (BBEDC) owns 50 percent of Dona Martita Fisheries LLC that owns (among other things) the AFA inshore pollock CVs *Alaskan Defender*, *Bering Defender*, *Defender*, and *Northern Defender*. These vessels have not participated in the BSAI Pacific cod trawl fishery in recent years, if ever, but all have pursued the strategy of leasing out their AFA BSAI Pacific cod sideboard allocations (thereby providing an additional revenue stream to BBEDC and the other vessel owners).
- The **Central Bering Sea Fishermen's Association** (CBSFA), through its wholly owned subsidiary St. Paul Fishing Company, has a 75 percent ownership interest in the BSAI Pacific cod trawl CVs *Starlight* and *Starward* (with Unisea having a 25 percent ownership interest in those vessels) and a 30 percent ownership interest in the BSAI Pacific cod trawl CV *Fierce Allegiance* (with Mary and Rick Mezich and Unisea holding the balance of ownership interest in that vessel). All three CVs participate in the non-CDQ BSAI Pacific cod CV trawl fishery (and CBSFA does not lease CDQ quota to any of these vessels).
- BSAI Partners, owned by **Coastal Villages Region Fund** (CVRF) and Siu Alaska Corporation, a wholly owned subsidiary of **Norton Sound Economic Development Corporation** (NSEDC), are majority owners that (with minority owner Maruha) own the AFA pollock trawl catcher vessels *Alaska Rose*, *Bering Rose*, *Destination*, *Great Pacific*, *Messiah*, and *Sea Wolf*.⁵³ These vessels have not participated in the BSAI Pacific cod trawl fishery in recent years, if ever, but all have pursued the strategy of leasing out their AFA BSAI Pacific cod sideboard allocations (thereby providing an additional revenue stream to CVRF, NSEDC, and the other vessel owners).
- The **Yukon Delta Fisheries Development Association** (YDFDA) has a 75 percent ownership interest in the BSAI trawl catcher vessels *American Beauty* and *Ocean Leader* (with Nichiro Peter Pan Investment, Inc. holding the balance of ownership interest). The *American Beauty* has been regularly participating in the non-CDQ BSAI Pacific cod CV trawl fishery, but the *Ocean Leader* has not. The *Ocean Leader*, however, has had the *American Beauty* fish its AFA BSAI Pacific cod sideboard allocation in the past.

The vessels noted above as BSAI Pacific cod trawl CVs with CDQ ownership links that directly participate in the non-CDQ directed BSAI Pacific cod fishery appear in other sections of this analysis as associated with multiple different non-CDQ communities based on the complex nature of vessel ownership. Table 2-69 shows the correspondence between CDQ group ownership interest in relevant CVs with community of CV ownership address, CV homeport, and community of CV LLP license ownership address. As shown, CV ownership address is the Seattle MSA for all vessels, as is the community of ownership address of LLP licenses used on those vessels, with two exceptions. In the case of the two exceptions, which are both vessels in which CBSFA has an ownership interest, Wasilla Alaska is shown as the community of ownership address, which is also the location of CBSFA offices. CV homeports show a different pattern where Unalaska Alaska is shown as the homeport for all vessels with

⁵² All CDQ ownership interest percentages specified are publicly available in the relevant CDQ 2019 annual reports (BBEDC and YDFDA) or a combination of a 2019 annual report and the CDQ group website (CBSFA) and in each case were confirmed as accurate by CDQ management staff.

⁵³ BSAI Partners formerly owned the *Ms. Amy* as well, but that vessel is no longer active in federally managed fisheries in the North Pacific. The catch history earned by the *Ms. Amy* is now associated with *Messiah*.

NSEDC/CVRF ownership (and all those CVs are AFA vessels and members of Unalaska Fleet Cooperative, delivering to Alyeska Seafoods in Unalaska). The homeport for all other CVs shown in Seattle, with one exception, that being one CV with BBEDC ownership interest that has Juneau as its homeport.

Table 2-69 Correspondence of CDQ group ownership interest in relevant BSAI Pacific cod trawl catcher vessels with community of vessel ownership address, catcher vessel homeport, and community of LLP license ownership address, 2019

Catcher Vessel Name	CDQ Group with Ownership Interest	CV Ownership Address Community	CV Homeport	LLP License Ownership Address Community
Alaskan Defender	BBEDC	Seattle MSA	Seattle, WA	Seattle MSA
Bering Defender	BBEDC	Seattle MSA	Seattle, WA	Seattle MSA
Defender	BBEDC	Seattle MSA	Seattle, WA	Seattle MSA
Northern Defender	BBEDC	Seattle MSA	Juneau, AK	Seattle MSA
Fierce Allegiance	CBSFA	Seattle MSA	Seattle, WA	Seattle MSA
Starlight	CBSFA	Seattle MSA	Seattle, WA	Wasilla, AK
Starward	CBSFA	Seattle MSA	Seattle, WA	Wasilla, AK
Alaska Rose	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
Bering Rose	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
Destination	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
Great Pacific	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
Messiah	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
Sea Wolf	NSEDC/CVRF	Seattle MSA	Unalaska, AK	Seattle MSA
American Beauty	YDFDA	Seattle MSA	Seattle, WA	Seattle MSA
Ocean Leader	YDFDA	Seattle MSA	Seattle, WA	Seattle MSA

Note: Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: Identification of relevant CDQ CV ownership interest by BBEDC, CBSFA, CVRF, NSEDC, and YDFDA 2021; CV ownership address, homeport, and LLP license ownership address from NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA.

2.8.9.1.2. Shore-based processors in Alaska accepting BSAI trawl-caught Pacific cod deliveries

The following tables provide a series of quantitative indicators of sector engagement in and dependency on the BSAI Pacific cod trawl fishery, by community and/or regional geography depending on data confidentiality constraints, for shore-based processors operating in Alaska, as noted in the following paragraphs. Overall community shore-based processor dependency (as measured in percentage of total ex-vessel value paid for all deliveries from all fisheries made to the relevant processors) is also shown to the extent possible within data confidentiality constraints.

Table 2-70 provides information on the distribution of relevant shore-based processors in Alaska communities active in the period 2004-2019. For the purposes of this portion of the analysis, relevant shore-based processors are defined as those shore-based entities (as identified by F_ID [intent to operate] and SBPR [shore-based processor]⁵⁴ codes in AKFIN data) accepting trawl-caught BSAI Pacific cod deliveries. As shown, five Alaska communities were the locations of relevant shore-based processing over

⁵⁴ “SBPR” is used as an abbreviation for “shore-based processor(s)” in tables (only) in this section. “FLPR” is used as an abbreviation for “floating processor(s)” in tables (only) in this section.

this period, with processors in two of those communities accepting trawl-caught BSAI Pacific cod deliveries in each year included in the data (Unalaska/Dutch Harbor and Akutan), with one community (Unalaska/Dutch Harbor) having multiple processors do so in each year.⁵⁵ Processor count data for 2020 have been added for comparative purposes, but as none of the proposed action alternatives or options include 2020 in the range of historical participation qualifying years, these data are not included in annual average calculations or unique shore-based processor counts.

Table 2-70 Shore-based processors in Alaska accepting trawl-caught BSAI Pacific cod deliveries by community of operation, 2004-2019 (number of processors)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020**	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique SBPRs 2004-2019 (number)
	Unalaska/Dutch Harbor/Anchorage*	3	3	3	4	4	2	3	4	3	4	4	3	4	3	3	3	4	3.3	49.07%
Akutan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	14.81%	1
Adak	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	1	0	0.8	11.11%	5
King Cove**	2	2	1	1	1	1	0	1	1	1	0	1	1	1	1	1	1	1.0	14.81%	2
Sand Point	1	1	1	1	1	1	0	1	0	1	0	1	0	0	1	1	0	0.7	10.19%	1
False Pass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	na
Grand Total	8	8	7	8	8	6	5	7	6	8	6	6	6	5	7	7	7	6.8	100.00%	15

*The Unalaska/Dutch Harbor SBPR count includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have operated in Unalaska/Dutch Harbor.

**The King Cove SBPR count includes one FLPR operating in the community in 2004 and 2005. All other FLPR data are attributed to Seattle (location of ownership address) due to a lack of operating location data.

**2020 data added for comparative purposes but are not included in average annual calculations or unique SBPR counts (see text).

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Table 2-71 provides information on the ex-vessel values associated with trawl-caught BSAI Pacific cod deliveries to shore-based processors by community and year (2004-2019) to the extent possible within data confidentiality constraints and the analytic decision to group Akutan with Unalaska/Dutch Harbor based on the operational similarities between the large, multispecies, BSAI-oriented processing plants in the two communities. As shown, Unalaska/Dutch Harbor and Akutan combined accounted for approximately 70 percent of all deliveries of trawl-caught BSAI Pacific cod to shore-based processors, as measured by ex-vessel values paid, over this period. Ex-vessel values data for 2020 have been added for comparative purposes but as none of the proposed action alternatives, elements, or options include 2020 in the range of historical participation qualifying years, these data are not included in annual average calculations.

⁵⁵ Floating processor activity, where location of operation is known from the quantitative dataset used for this analysis, is grouped with shore-based processors. As noted in Table 2-70, this was limited to King Cove only and for two years only. All other floating processors activity (i.e., where operating location is unknown) is attributed to the ownership address of the relevant floating processors, which without exception is the Seattle MSA. For the communities of Unalaska/Dutch Harbor and Akutan specifically, it is known through other sources that processing of trawl-caught BSAI Pacific cod regularly occurred during all or some of the years 2004-2019 aboard floating processors within their respective city limits (see the “Unalaska/Dutch Harbor, Akutan, and Adak” discussion in Section 2.8.9.2.1 for additional detail).

Table 2-71 Ex-vessel values of trawl-caught BSAI Pacific cod deliveries to shore-based processors in Alaska by community of operation, 2004-2019 (millions of 2019 real dollars)

Community(ies)	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020***	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)
Akutan/Unalaska/Dutch Harbor/Anchorage****	\$6.18	\$6.61	\$7.35	\$6.31	\$12.75	\$1.54	**	**	**	\$10.95	**	**	**	**	\$9.94	\$6.49	\$7.94	\$8.72	71.69%
Adak/King Cove****/Sand Point/False Pass	\$7.41	\$4.89	\$4.44	\$11.39	\$6.57	\$5.43	*	*	*	\$2.21	*	*	*	*	\$6.04	\$4.13	\$1.56	\$3.61	29.68%
Grand Total	\$13.59	\$11.50	\$11.79	\$17.69	\$19.31	\$6.97	\$6.16	\$9.68	\$17.66	\$13.16	\$13.53	\$10.14	\$10.71	\$8.73	\$15.98	\$10.62	\$9.50	\$12.16	100.00%

*Confidential data suppressed.
 **Data suppressed to protect confidential data in other cells.
 ***2020 data added for comparative purposes but are not included in average annual calculations (see text).
 ****The Unalaska/Dutch Harbor SBPR data includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have operated in Unalaska/Dutch Harbor.
 *****The King Cove SBPR data includes one FLPR operating in the community in 2004 and 2005. All other FLPR data are attributed to Seattle (location of ownership address) due to a lack of operating location data.
 Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Table 2-72 provides information on average annual shore-based processor dependency on deliveries of trawl-caught BSAI Pacific cod compared to all area and species fisheries landings processed by those same processors for the years 2010-2019, as measured in percentage of ex-vessel values associated with deliveries made to the processors. As shown, of the deliveries made to the combined relevant Unalaska/Dutch Harbor and Akutan processors, approximately three percent of all ex-vessel values of landings of all species were associated with trawl-caught BSAI Pacific cod deliveries over that period, while for the processors in Adak, King Cove, and Sand Point combined, that figure was approximately four percent.

Table 2-72 Shore-based processors in Alaska accepting BSAI trawl-caught Pacific cod deliveries ex-vessel gross revenue diversity by community of operation, 2004-2019 (millions of 2019 real dollars)

Community(ies)	Annual Average Number of BSAI Trawl-Caught Pcod SBPRs 2004-2019	BSAI Pcod SBPRs Annual Average Ex-vessel Values Paid for BSAI Trawl-Caught Pcod Only 2004-2019 (\$ millions)	BSAI Pcod SBPRs Annual Average Total Ex-vessel Values Paid for All Area, Gear, and Species Fisheries 2004-2019 (\$ millions)	BSAI Pcod SBPRs Ex-Vessel Values Paid for BSAI Trawl-Caught Pcod as a Percentage of Total Ex-vessel Values Paid (all area, gear, and species fisheries) Annual Average 2004-2019
Akutan/Unalaska/Dutch Harbor/Anchorage*	4.3	\$8.72	\$281.62	3.10%
Adak/King Cove**/Sand Point	2.4	\$3.61	\$82.18	4.39%
Grand Total	6.8	\$12.33	\$363.80	3.39%

*The Unalaska/Dutch Harbor SBPR count includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have operated in Unalaska/Dutch Harbor.
 **The King Cove SBPR data includes the data from one FLPR operating in the community in 2004 and 2005. All other FLPR data are attributed to Seattle (location of ownership address) due to a lack of operating location data.
 Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

While the relatively modest dependency of the large, multi-species plants in Unalaska/Dutch Harbor and Akutan can be attributed to their diversified portfolio of processing activities, which include larger volume and higher value per unit volume fisheries, the situation with the Adak/King Cove/Sand Point grouping is more complicated. While separate data cannot be provided for these three communities, a general knowledge of the industry would suggest that trawl-caught landings of BSAI Pacific cod have been more substantial in Adak than the other two communities, based in part on the location of Adak relative to the fishery, and known differences in historical foci of the plants, with the King Cove and Sand Point plants having a large proportion of their efforts directed toward GOA fisheries, while the plant in Adak, as noted in multiple previous Council analyses, has had a substantial focus on BSAI Pacific cod during those years it has been operational.

Table 2-73 provides information on average annual total shore-based processor dependency on trawl-caught BSAI Pacific cod (all shore-based processors in the communities that had at least one shore-based processor that accepted trawl-caught BSAI Pacific cod deliveries, not just the shore-based processors that participated in that fishery) compared to all area and species fishery landings processed by all processors in the community(ies) for the years 2004-2019, within the constraints of confidentiality restrictions, as

measured by ex-vessel values associated with those landings. As shown, for that span of years, trawl-caught BSAI Pacific cod ex-vessel value of landings accounted for about two percent of all shore-based processor ex-vessel value of landings for Unalaska/Dutch Harbor and Akutan combined, while for the other communities as a group that figure remained closer to four percent figure seen for only those plants directly engaged in the BSAI Pacific cod trawl fishery (reflecting the fact that for most years the communities included in the latter grouping each had a single active shore-based processor).

Table 2-73 All areas and species ex-vessel gross revenue diversity by community of operation for all shore-based processors (for Alaska communities with at least one shore-based processor accepting BSAI trawl-caught Pacific cod deliveries), 2004-2019 (millions of 2019 real dollars)

Community(ies)	Annual Average Number of BSAI Trawl-Caught Pcod SBPRs 2004-2019	Annual Average Number of All SBPRs in those Same Communities (the "Community SBPR Sector") 2004-2019	All Community SBPRs Annual Average Ex-vessel Values Paid for BSAI Trawl-Caught Pcod Only 2004-2019 (\$ millions)	All Community SBPRs Annual Average Total Ex-vessel Values Paid from All Area, Gear, and Species Fisheries 2004-2019 (\$ millions)	All Community SBPRs Annual Average BSAI Trawl-Caught Pcod Ex-vessel Values Paid as a Percentage of Total Ex-Vessel Values Paid (all area, gear, and species fisheries) Annual Average 2004-2019
Akutan/Unalaska/Dutch Harbor/Anchorage*	4.3	19.3	\$8.72	\$375.91	2.32%
Adak/King Cove**/Sand Point	2.4	4.8	\$3.61	\$101.76	3.55%
Grand Total	6.8	24.0	\$12.33	\$477.67	2.58%

*The Unalaska/Dutch Harbor SBPR count includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have operated in Unalaska/Dutch Harbor.

**The King Cove SBPR data includes the data from one FLPR operating in the community in 2004 and 2005. All other FLPR data are attributed to Seattle (location of ownership address) due to a lack of operating location data.

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

No EDR processing crew employment and earnings data like those available for shore-based processors accepting deliveries of trawl-caught GOA groundfish are available for shore-based processors accepting deliveries of trawl-caught BSAI Pacific cod. Overall, the unavailability of these data is a substantive obstacle to a comprehensive analysis of the human dimensions of the fishery.

None of the CDQ groups reported any current ownership interest in any of the shore-based processors accepting deliveries of trawl-caught BSAI Pacific cod from the non-CDQ directed fishery when contacted for this analysis. NSEDC, through its wholly owned subsidiary Siu Alaska Corporation, did have a partial ownership interest in the Bering Fisheries shore-based processor that formerly operated in Unalaska/Dutch Harbor, but that plant is no longer in operation.⁵⁶ Shore-based processing of trawl-caught BSAI Pacific cod from the non-CDQ directed fishery does, however, occur in Akutan, an APICDA community, and that activity provides multiple benefits to the community. There has been interest indicated in processing BSAI Pacific cod in the shore-based processing plants in False Pass and Atka, two other APICDA communities where APICDA does have partial shore-based processing ownership interests, but such processing has not occurred to date, with the exception of the processing of some <60' sector pot-caught BSAI Pacific cod in one of the False Pass shore-based plants in 2019 (and the processing of some CV trawl-caught BSAI Pacific cod and some <60' sector pot-caught BSAI Pacific cod in one of the False Pass shore-based plants in 2020, outside of the historical qualifying year date ranges being considered under any of the proposed action alternatives and options).

Shore-based processors in Alaska accepting Aleutian Islands trawl-caught Pacific cod deliveries

Table 2-74 provides information on shore-based processors in Alaska accepting trawl caught deliveries of Aleutian Islands (as opposed to BSAI) Pacific cod over the years 2004-2019. This is a subset of the shore-based processors in Alaska accepting trawl caught deliveries of BSAI Pacific cod data shown in Table

⁵⁶ As noted in the BSAI Crab Rationalization Ten-Year Program Review SIA (Northern Economics 2016), Siu Alaska Corporation and Copper River Seafoods formed Dutch Harbor Acquisitions LLC to purchase the assets of Harbor Crown Seafoods which formerly operated a processing plant in facilities leased from the Ounalashka Corporation in Unalaska/Dutch Harbor. Dutch Harbor Acquisitions, which operated the plant (in conjunction with others) for most of its active span (2011-2014) under the name Bering Fisheries, is shown in the 2004-2019 data used for the current analysis as having accepted deliveries of trawl-caught BSAI Pacific cod from the non-CDQ directed fishery in 2011, 2013, and 2014.

2-70. As shown, in all but two years when the Adak shore-based processor was operating, trawl-caught deliveries of AI Pacific cod were also made to shore-based processors in other communities. While presumably under the those proposed action alternative, element, and option combinations that would include an Adak set-aside these would be the processing communities that would be most likely to potentially lose deliveries, what cannot be shown due to data confidentiality restrictions are the quantitative differences in the importance of deliveries to Adak and those to other communities. Specifically, the volume and/or value of relevant landings in Adak and in any of the other communities shown are confidential in all years 2004-2019, except for Unalaska/Dutch Harbor alone or in combination with Akutan in 2007 (only). In qualitative terms, however, it can be stated that the volume of AI Pacific cod trawl-caught deliveries to shore-based processors in any community or communities outside of Adak in any year 2004-2019 were negligible relative to the volume (and value) of other fisheries landings made in those same communities and relative to volume and value of trawl-caught AI Pacific cod landings made in Adak in any non-zero landings year, with the exception of 2010 when there was an anomalously low volume of landings in Adak.

Table 2-74 Shore-based processors in Alaska accepting trawl-caught AI Pacific cod deliveries by community of operation, 2004-2019 (number of processors)

Geography	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique SBPRs 2004-2019 (number)
	Unalaska/Dutch Harbor/Anchorage	1	1	1	3	1	0	0	0	1	0	0	0	0	0	2	1	0.7	37.9%
Akutan	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0.3	13.8%	1
Adak	1	1	1	1	1	1	1	0	1	1	1	0	0	0	1	1	0.8	41.4%	5
King Cove*	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	6.9%	1
Grand Total	3	3	2	5	3	2	2	0	2	1	1	0	0	0	3	2	1.8	100.0%	11

*The King Cove SBPR count includes one FLPR operating in the community in 2004 and 2005. All other FLPR data are attributed to Seattle (location of ownership address) due to a lack of operating location data.
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Shore-based processors, AFA shoreside CV pollock cooperatives, and deliveries of Bering Sea trawl-caught Pacific cod

The major shore-based processors in Unalaska/Dutch Harbor and Akutan are each associated with AFA pollock cooperatives. These include the four of the six AFA shoreside CV cooperatives: the Unalaska Fleet Cooperative, the UniSea Fleet Cooperative, and the Westward Fleet Cooperative in Unalaska/Dutch Harbor and the Akutan Catcher Vessel Association in Akutan. For the large Unalaska/Dutch Harbor and Akutan shore-based plants as a group, approximately 50 percent of the targeted Bering Sea Pacific cod harvested by AFA trawl CVs was delivered to the main shore-based plant associated with their co-op over the most recent four years for which data are available (2017-2020). If other shore-based plants and floating processors owned by the same firms that own the main Unalaska/Dutch Harbor and Akutan AFA co-op affiliated shore-based plants are included, approximately 85 percent of targeted Bering Sea Pacific cod harvested by AFA trawl CVs was delivered to the processing firms associated with their co-op over these same years.

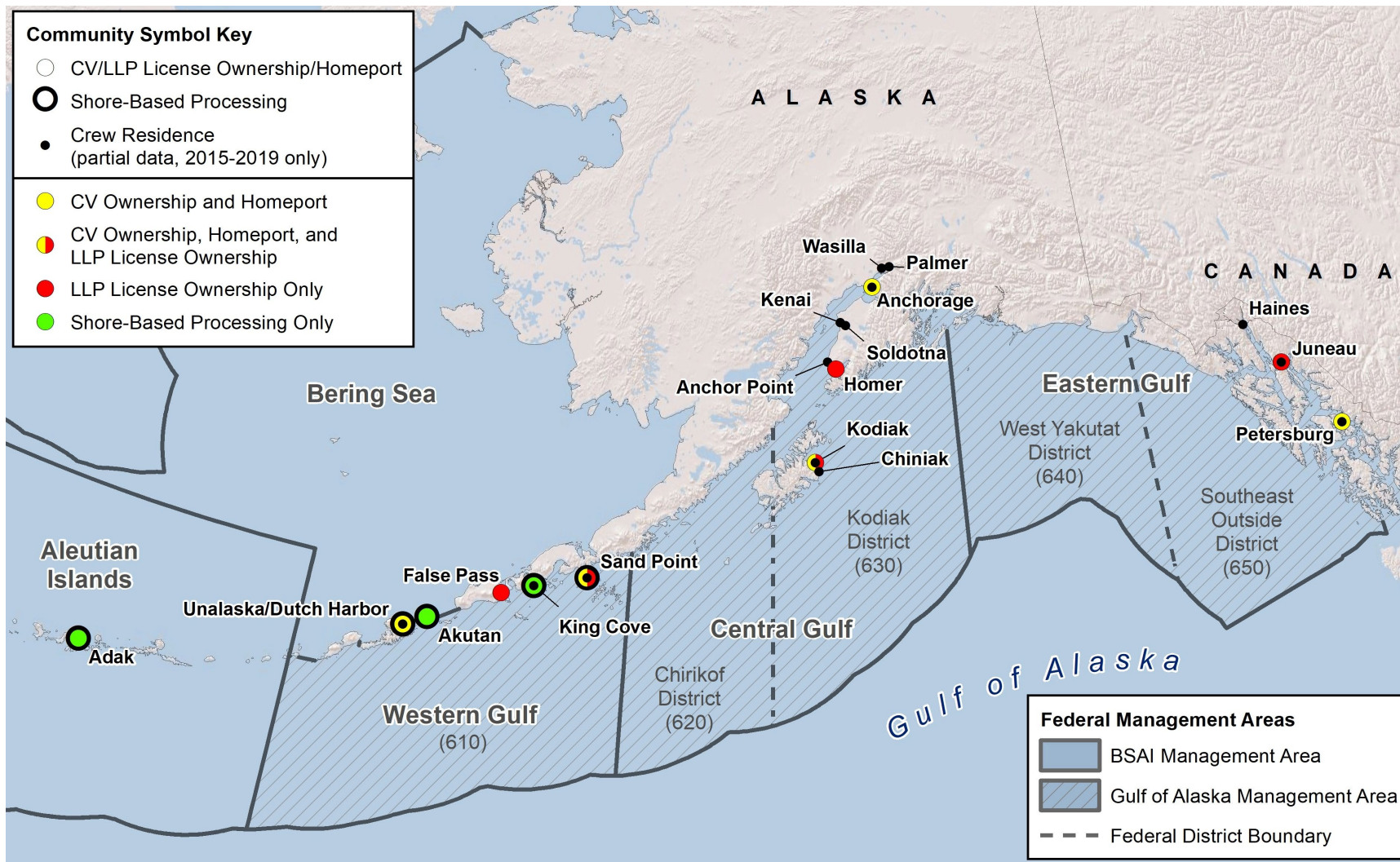
The remaining two AFA shoreside CV cooperatives, the Northern Victor Fleet Cooperative and the Peter Pan Fleet Cooperative, have different patterns of targeted Bering Sea Pacific cod deliveries by the AFA CVs to the main plant with which they are affiliated and/or other processing facilities owned by the same firms. While data confidentiality constraints preclude quantitative analyses, the main plant associated with the Northern Victor Fleet Cooperative is generally known to accept few, if any, targeted trawl-caught deliveries of Bering Sea Pacific cod, but other processing platforms owned by the same firm take a large majority of these deliveries from the CVs in the affiliated AFA co-op. The Peter Pan Fleet Cooperative, affiliated with a shore-based processing plant in King Cove, shows yet a different pattern of deliveries of targeted trawl-caught Bering Sea Pacific cod from its AFA co-op CVs, which is likely influenced by the

plant's relative distance from the main Bering Sea Pacific cod fishing grounds, especially in years when the race-for-fish is exacerbated by the lower TACs taken in shorter seasons.

2.8.9.1.3. Summary of geographic distribution of Alaska community engagement in the BSAI Pacific cod CV trawl fishery

Figure 2-5 summarizes the “geographic footprint” of Alaska community engagement in the BSAI Pacific cod CV trawl fishery by participation type. Communities shown on the map are those that were: (1) the community of ownership address of CVs that made landings and/or LLP licenses that were used in the fishery one or more years 2004-2019; and/or (2) the location of one or more shore-based processors that accepted trawl-caught deliveries of BSAI Pacific cod in one or more years 2004-2019; and/or (3) the community of residence address provided by crew members on BSAI Pacific cod trawl CVs that completed GOA trawl EDRs in one or more years 2015-2019; and/or (4) the homeport of BSAI Pacific cod trawl CVs active in the fishery in 2019.

Figure 2-5 Map of Alaska Community Engagement in the BSAI Pacific Cod CV Trawl Fishery by Engagement Type, 2004-2019



2.8.9.1.4. Other potentially affected sectors

The community linkages of two other BSAI Pacific cod sectors potentially affected by the proposed action alternatives are described in this section. These are:

- Pacific cod HAL and Pot <60' catcher vessels
- Pacific cod HAL catcher/processors

BSAI Pacific Cod Hook-and-Line and Pot <60' Catcher Vessels'

The following discussion of the engagement of communities in the BSAI Pacific cod HAL and pot <60' CV sector is included in this section (despite these sectors not being directly affected by the proposed alternatives) because one or more of the potential combinations of elements and options within the range of alternatives being considered may have the effect of lowering annual average of BSAI Pacific cod final apportionment to the <60' sectors from their 2004-2019 historical levels. These regularly occurring if annually variable in scale reallocations from several different sectors, including the trawl CV sector, have been utilized to by the <60' fleet to access and harvest more than half of their total catch of BSAI Pacific cod over the 2004-2019 period. As described in detail below, in most recent years the incremental contribution of the trawl CV sector to these overall reallocations have been large enough that a substantial diminishment or effective elimination of the trawl CV reallocations would likely result in adverse consequences to individual participants in the <60' sector and to one or more Alaska community small boat fleets.

The following tables, in combination with the detailed tables in Section 8.4 that are referenced in this section, provide a series of quantitative indicators of sector engagement in and dependency on the BSAI Pacific cod HAL and pot <60' fisheries, by community and/or regional geography depending on data confidentiality constraints. For Alaska communities, overall community CV fleet dependency is also shown to the extent possible within data confidentiality constraints. No data on crew employment, earnings, or community of residence are available for the BSAI Pacific cod HAL or pot <60' fleets.

Table 2-75 provides a count, by community of ownership address and year (2004-2019), of BSAI Pacific cod HAL CVs <60' for all Alaska communities with any vessels active in the fishery during this time, as well as for the Seattle MSA; Washington communities outside of the Seattle MSA as a group; all Oregon communities combined; and all other states/unknown combined. As shown, more Alaska communities (19) participated in this sector through active local ownership address CVs than in the BSAI Pacific cod CV trawl sector (five; see Table 2-47), but overall only two communities (or aggregation of communities) among the states involved averaged one or more vessels with local ownership addresses active on an annual average basis during this period: Unalaska/Dutch Harbor (2.8 vessels) and Kodiak (1.1 vessels). Both communities have seen a decline in participation in the most recent years covered by the data shown, with no vessels with Unalaska/Dutch Harbor ownership addresses participating in the <60' HAL CV BSAI Pacific cod fishery in two of the most recent four years (2016-2017), and only one vessel participating in each of the other two years (2018-2019). No Kodiak ownership address vessels participated in the fishery in the most recent seven years covered by the data (2013-2019). Vessel count data for 2020 have been added for comparative purposes, but as none of the proposed action alternatives or options include 2020 in the range of historical participation qualifying years, these data are not included in annual average calculations or unique vessel counts.

Table 2-75 BSAI Pacific cod HAL CVs <60' by community of vessel historical ownership address, 2004-2019 (number of vessels)

FMA	Community [CDQ Group]	Alaska Borough or Census Area (CA)*	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020**	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
AI	Adak***	Aleutians West CA	0	1	1	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0.4	4.7%	2
BS	Unalaska/Dutch Harbor****	Aleutians West CA	1	6	3	5	3	4	3	3	4	5	4	2	0	0	1	1	0	2.8	30.4%	13
BS	King Salmon [BBEDC]	BBB	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.2	2.0%	1
BS	Mekoryuk [CVRF]	Bethel CA	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0.1	0.7%	1
BS	Nome [NSEDG]	Nome CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.1	0.7%	1
BS	Akutan [APICDA]	AEB	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7%	1
CGOA	Kodiak	KIB	3	3	5	2	2	1	0	0	1	0	0	0	0	0	0	0	0	1.1	11.5%	10
CGOA	Port Lions	KIB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	0.7%	1
CGOA	Anchor Point/Soldotna	KPB	0	2	0	0	2	2	1	0	0	0	0	0	0	0	0	0	1	0.4	4.7%	3
CGOA	Homer	KPB	0	2	0	1	1	1	0	0	0	0	0	0	0	1	1	2	4	0.6	6.1%	7
CGOA	Nikolaevsk	KPB	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0.3	2.7%	3
CGOA	Anchorage/Girdwood	MA	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7%	2
CGOA	Willow	MSB	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0.3	3.4%	2
CGOA	Cordova	Valdez-Cordova CA	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2.0%	2
EGOA	Juneau/Douglas	CBJ	0	0	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0.2	2.0%	3
EGOA	Ketchikan	KGB	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0.2	2.0%	1
EGOA	Petersburg	PB	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7%	1
EGOA	Sitka	CBS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0.1	1.4%	2
(Interior)	Delta Junction	SE Fairbanks CA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0.1	0.7%	1
--	Seattle MSA Washington	--	2	0	1	1	2	0	1	1	1	0	1	1	0	1	1	1	1	0.9	9.5%	7
--	Other Washington	--	0	1	2	1	2	0	1	1	1	1	0	0	0	0	1	0	0	0.7	7.4%	7
--	Oregon	--	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.7%	1
--	Other	--	0	0	0	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0.4	4.1%	4
GRAND TOTAL			7	18	16	14	19	13	9	8	8	10	6	5	1	2	5	7	7	9.3	100.0%	61

*Communities listed by census area are a part of the Unorganized Borough. Borough abbreviations: BBB = Bristol Bay Borough; AEB = Aleutians East Borough; KIB = Kodiak Island Borough; KPB = Kenai Peninsula Borough; MA = Municipality of Anchorage; MSB = Matanuska-Sustina Borough; CBJ = City and Borough of Juneau; KGB = Ketchikan Gateway Borough; PB = Petersburg Borough; CBS = City and Borough of Sitka.

**2020 data added for comparative purposes but are not included in average annual calculations or unique vessel counts (see text).

***Adak is not a part of any CDQ entity, but is the only CQE community in the BSAI region.

****Unalaska is not a CDQ community, but is an ex-officio member of APICDA.

Note: Due to ownership movement between communities over the years shown, the number of vessels per community may not sum to grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Data confidentiality constraints limit the amount of revenue information that can be provided for the BSAI Pacific cod HAL <60' sector on a community or even aggregated community basis outside of Unalaska/Dutch Harbor. Kodiak is the only other community for which data from any individual year are not confidential and then for only three years (2004-2006).

Tables that provide the additional detail on revenue and relative economic dependency are included in Section 8.4, but in summary, Unalaska/Dutch Harbor ownership address CVs that participated in this <60' fishery sector over the period 2004-2019 generated approximately \$0.26 million in annual average ex-vessel gross revenue from the BSAI Pacific cod deliveries (Table 8-6), which accounted for about 23.5 percent of all ex-vessel gross revenues for these same vessels (Table 8-7). During this same period, the Unalaska/Dutch Harbor "community fleet" (all commercial fishing vessels participating in any area, gear, and species fisheries) annually averaged approximately \$4.8 million in ex-vessel gross revenue, of which HAL <60' sector-caught BSAI Pacific cod accounted for about 5.5 percent of the total combined revenue (Table 8-8). The annual average of 2.8 vessels active in the BSAI Pacific cod HAL <60' fishery was approximately 14 percent of the annual average number of vessels (20.6) in the Unalaska/Dutch Harbor "community fleet" (Table 8-8).

Shore-based processing of deliveries of BSAI Pacific cod from the HAL <60' sector throughout the years 2004-2019 occurred in Unalaska/Dutch Harbor⁵⁷ and Akutan, along with 11 of those 16 years in Adak.⁵⁸ In addition, in 2019 only, shore-based processing occurred in Nome. Except for Nome, shore-based processing of trawl-caught BSAI Pacific cod commonly occurred in these same BSAI communities (and no other BSAI communities) during the same period. For this reason, any effective redistribution of historical levels of catch (as opposed to historical levels of allocation) of BSAI Pacific cod between trawl and HAL <60' vessel sectors that could be reasonably foreseeable under at least some of the potential combinations of elements and options within the range of alternatives being considered (if historically common annual levels of roll-overs from the trawl sector to the HAL <60' sector were to decrease) would likely be neutral from a shore-based processor perspective at the BSAI community or BSAI community group level (because the trawl and HAL <60' CV sectors deliver to the same shore-based processors the same BSAI communities). That outcome would, of course, not be neutral from a community fleet level perspective, as the pattern distribution of the sectors across Alaska communities are quite different.

Table 2-76 provides a count, by community of ownership address and year (2004-2019), of BSAI Pacific cod pot CVs <60' for all Alaska communities with any vessels active in the fishery during this time, as well as for the Seattle MSA; Washington communities outside of the Seattle MSA as a group; Oregon communities combined; and all other states/unknown combined. As shown, more Alaska communities (15) participated in this sector through active local ownership address CVs than in the BSAI Pacific cod CV trawl sector (five; see Table 2-47), but overall only two communities (or aggregation of communities) among the states involved averaged two or more vessels with local ownership addresses active on an annual average basis during this period: Unalaska/Dutch Harbor (3.9 vessels), Kodiak (5.5 vessels), and "other Washington" (2.1 vessels). Communities, or groups of communities, that averaged one or more vessels active in this <60' sector annually included Homer (1.9 vessels), Wasilla (1.1 vessels), and the Seattle MSA (1.3 vessels). The number of vessels participating in the fishery annually has shown a general upward trend over the years 2004-2019 and/or a distinct uptick in the most recent years for three of the four noted Alaska communities (with the exception being Unalaska/Dutch Harbor); notable recent year increases in participation in the sector have also been seen in King Cove, Sand Point, Seward, Anchorage/Girdwood, and Petersburg. Vessel count data for 2020 have been added for comparative purposes, but as none of the proposed action alternatives, elements, or options include 2020 in the range of historical participation qualifying years, these data are not included in annual average calculations or unique vessel counts. As shown, three communities that do not appear in the data for the years 2004-2019 do appear in the data for 2020 as the ownership address location for one BSAI Pacific cod pot <60' CV each: False Pass, Haines, and Tenakee Springs.

⁵⁷ The Unalaska/Dutch Harbor SBPR data includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have actually operated in Unalaska/Dutch Harbor.

⁵⁸ In 2020, shore-based processing of deliveries of BSAI Pacific cod from the HAL < 60' sector took place in all three communities (Unalaska/Dutch Harbor, Akutan, and Adak).

Table 2-76 BSAI Pacific cod pot CVs <60' by community of vessel historical ownership address, 2004-2019 (number of vessels)

FMA	Community (CDQ Group)	Alaska Borough or Census Area (CA)*	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020**	Annual Average 2004-2019 (number)	Annual Average 2004-2019 (percent)	Unique Vessels 2004-2019 (number)
BS	Unalaska/Dutch Harbor***	Aleutians West CA	1	5	7	4	4	4	3	4	2	3	4	5	5	4	4	3	4	3.9	18.2%	15
BS	St. Paul (CBSFA)	Aleutians West CA	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3%	1
WGOA	King Cove	AEB	2	1	0	2	0	0	0	0	0	0	0	0	0	0	3	3	3	0.7	3.2%	5
WGOA	Sand Point	AEB	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	0.2	0.9%	2
WGOA	False Pass	AEB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	na
CGOA	Kodiak	KIB	5	5	5	6	5	2	4	5	6	5	5	4	6	6	9	10	10	5.5	25.9%	17
CGOA	Homer	KPB	0	0	0	1	1	0	0	0	2	2	3	2	5	4	5	6	6	1.9	9.1%	8
CGOA	Kenai	KPB	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0.2	0.9%	1
CGOA	Seward	KPB	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0.5	2.4%	1
CGOA	Chignik Lagoon	LPB	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3%	1
CGOA	Anchorage/Girdwood	MA	0	0	0	0	1	0	0	0	0	0	0	0	0	1	3	3	1	0.5	2.4%	4
CGOA	Wasilla	MSB	0	0	0	0	0	0	1	1	2	2	2	2	2	2	2	2	2	1.1	5.3%	2
EGOA	Juneau/Douglas	CBJ	0	0	0	0	1	1	1	0	0	0	1	1	1	1	0	1	1	0.5	2.4%	5
EGOA	Haines	CBJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	na
EGOA	Tenakee Springs	CBJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	na	na	na
EGOA	Ketchikan	KGB	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3%	1
EGOA	Klawock	Prince of Wales-Hyder CA	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0.1	0.6%	1
EGOA	Petersburg	PB	1	1	0	0	0	1	0	0	1	0	2	3	2	3	4	4	4	1.1	5.3%	6
--	Seattle MSA Washington	--	1	0	0	0	1	1	0	1	1	4	3	2	2	2	1	2	1	1.3	6.2%	6
--	Other Washington	--	1	0	1	2	1	4	3	3	5	2	1	1	1	0	4	5	6	2.1	10.0%	13
--	Oregon	--	0	0	1	2	2	2	0	0	0	2	1	0	0	0	0	0	0	0.6	2.9%	4
--	Other	--	0	1	0	0	0	0	0	0	1	1	0	0	1	3	3	2	4	0.8	3.5%	6
GRAND TOTAL			11	13	16	17	16	17	14	15	20	24	21	21	27	26	39	43	47	21.3	100.0%	79

*Communities listed by census area are a part of the Unorganized Borough. Borough abbreviations: AEB = Aleutians East Borough; KIB = Kodiak Island Borough; KPB = Kenai Peninsula Borough; LPB = Lake and Peninsula Borough; MA = Municipality of Anchorage; MSB = Matanuska-Susitna Borough; CBJ = City and Borough of Juneau; KGB = Ketchikan Gateway Borough; PB = Petersburg Borough.
 **2020 data added for comparative purposes but are not included in average annual calculations or unique vessel counts (see text).
 ***Unalaska is not a CDQ community, but is an ex-officio member of APICDA.
 Note: Due to ownership movement between communities over the years shown, the number of vessels per community may not sum to grand totals.
 Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Data confidentiality constraints limit the amount of revenue information that can be provided for the BSAI Pacific cod pot <60' sector on a community or even aggregated community basis outside of Unalaska/Dutch Harbor and Kodiak, and even in those two communities data are confidential for two years (2004 and 2012) and one year (2009), respectively. The only other Alaska communities with data for one or more years that are not confidential are King Cove (2018 and 2019), Homer (2014 and 2016-2019) and Petersburg (2016 and 2018-2019).

Tables that provide the additional detail on revenue and relative economic dependency are included in Section 8.4, but in summary:

- Unalaska/Dutch Harbor ownership address CVs that participated in BSAI Pacific cod pot <60' sector over the period 2004-2019 generated approximately \$0.97 million in annual average ex-vessel gross revenue from the BSAI Pacific cod deliveries (Table 8-9), which accounted for about 46.5 percent of all ex-vessel gross revenues for these same vessels (Table 8-10). During this same period, the Unalaska/Dutch Harbor “community fleet” (all commercial fishing vessels participating in any area, gear, and species fisheries) annually averaged approximately \$4.8 million in ex-vessel gross revenue, of which pot <60' sector-caught BSAI Pacific cod accounted for about 20.2 percent of the total combined revenue of the Unalaska/Dutch Harbor “community fleet” (Table 8-11). The annual average of 3.9 vessels active in the BSAI Pacific cod pot <60' fishery made up approximately 19 percent of the annual average number of vessels (20.6) in the Unalaska/Dutch Harbor “community fleet” (Table 8-11).
- Kodiak ownership address CVs that participated in BSAI Pacific cod pot <60' sector over the period 2004-2019 generated approximately \$3.06 million in annual average ex-vessel gross revenue from the BSAI Pacific cod deliveries (Table 8-9), which accounted for about 42.7

percent, respectively, of all ex-vessel gross revenues for these same vessels (Table 8-10). During this same period the Kodiak “community fleet” (all commercial fishing vessels participating in any area, gear, and species fisheries) annually averaged approximately \$126.5 million in ex-vessel gross revenue, of which pot <60’ sector-caught BSAI Pacific cod accounted for about 2.4 percent of the total combined revenue of the “community fleet” (Table 8-11). The annual average of 5.5 vessels active in the BSAI Pacific cod pot <60’ fishery made up approximately 2.1 percent of the annual average number of vessels (260) in the Kodiak “community fleet” (Table 8-11).

Shore-based processing of deliveries of BSAI Pacific cod from the pot <60’ sector throughout the years 2004-2019 occurred in BSAI communities of Unalaska/Dutch Harbor⁵⁹ and Akutan, along with eight of those 16 years in Adak. Shore-based processing of trawl-caught BSAI Pacific cod commonly occurred in these same BSAI communities. In addition, shore-based processing of pot <60’ sector-caught BSAI Pacific cod occurred in one or more years in the GOA communities of King Cove (9 of the 16 years), Kodiak (2014, 2015, and 2017), Sand Point (2006 and 2019), and False Pass (2019). In King Cove and Sand Point, shore-based processing of trawl-caught BSAI Pacific cod commonly occurred in these same communities, but trawl-caught BSAI Pacific cod was not processed in Kodiak or False Pass in any year 2004-2019.⁶⁰ In general, processing volumes and values of BSAI Pacific cod deliveries made by trawl vessels and pot <60’ vessels to shore-based processors in the GOA communities as a group were modest compared to those made to shore-based processors in the BSAI communities as a group.⁶¹

In terms of overall relative scale of the BSAI Pacific cod HAL <60’, pot <60’, and trawl CV sectors as measured in 2004-2019 annual average ex-vessel gross revenues (including vessels from all regions and states and including all deliveries in the BSAI Pacific cod fishery, not just those to shore-based processors), the combined HAL and pot sectors averaged approximately \$10.81 million per year, about 6.4 percent (\$0.69 million, Table 8-6) of which was attributed to the HAL <60’ sector and 93.6 percent (\$10.11 million, Table 8-9) was attributed to the pot <60’ sector. During this same period, the annual average ex-vessel gross revenues from BSAI Pacific cod fishery deliveries by trawl CV sector was approximately \$23.54 million (Table 2-48). The smaller scale of the <60’ sector fisheries does not, however, mean they are unimportant at the local sector or local fleet level for some communities.

Looking at a combination of the BSAI Pacific cod HAL and pot <60’ fisheries, for Unalaska/Dutch Harbor ownership address vessels, these fisheries accounted for roughly one-quarter and one-half, respectively, of the total ex-vessel gross revenues of the vessels participating in those fisheries. Looking at the Unalaska/Dutch Harbor local ownership address “community fleet” as a whole, a relatively small fleet composed of relatively small vessels, these two fishery sectors together accounted for one-quarter of all ex-vessel gross revenues for the entire local fleet 2004-2019.

For Kodiak, with a local ownership address “community fleet” including many more (and many larger) vessels than are in the Unalaska/Dutch Harbor “community fleet,” the contribution of the BSAI Pacific cod HAL and pot <60’ fisheries combined over the years 2004-2019 accounted for less than three percent of the total “community fleet” ex-vessel gross revenues. However, the \$3.06 million in ex-vessel gross revenues generated on an annual average basis 2004-2019 for BSAI Pacific cod landings by the Kodiak ownership address pot <60’ sector (Table 8-11) was over five times greater than the approximately \$0.55

⁵⁹ The Unalaska/Dutch Harbor SBPR data includes one SBPR shown in the data as operating in Anchorage in 2011 and another SBPR shown as operating in Anchorage in 2013 and 2014. In both cases these processors are known to have actually operated in Unalaska/Dutch Harbor.

⁶⁰ As noted in Section 2.8.9.1.2, however, some trawl-caught BSAI Pacific cod was delivered to one of the False Pass shore-based processors in 2020 (i.e., outside of the historical qualifying year date ranges included in any of the proposed action alternatives and options, see Table 2-70).

⁶¹ In 2020, shore-based processing of deliveries of BSAI Pacific cod from the pot < 60’ sector took place in Unalaska/Dutch Harbor, Akutan, Adak, King Cove, Sand Point, and False Pass (i.e., in each of the communities where it had taken place in one or more years 2004-2019, except Kodiak).

million in ex-vessel gross revenues generated on an annual average basis for BSAI Pacific cod landings by the Kodiak ownership address trawl sector over this same period (Table 2-48)

It is clear that the reallocations of BSAI Pacific cod due to reallocations from all other sectors to the <60' HAL and Pot sectors, which over the period 2004-2019 ranged from 1,247 mt (2005) to 7,500 mt (2014) per year (Table 2-5 and Table 2-29), are important to those same local sectors and community fleets. These reallocations allowed the combined BSAI HAL and pot <60' CVs to access and harvest an annual average of 221 percent of their initial BSAI Pacific cod allocation over the years 2004-2019, ranging from 141 percent (2009) to 305 percent (2019) in any given year.

The incremental contribution of reallocations of BSAI Pacific cod specifically from the BSAI Pacific cod CV trawl sector to the BSAI Pacific cod <60' HAL and pot sectors followed a different pattern. As shown in Table 2-8, none of these reallocations occurred during the years 2004-2009. As shown in the same table, however, in the most recent 10 years covered by the dataset used for this analysis (2010-2019), these reallocations occurred eight of those 10 years (all but 2013 and 2017) and accounted for 12 percent of total reallocations from all sectors received by the BSAI Pacific cod <60' HAL and Pot sector in the low year (2012) and 60 percent in the high year (2019). Of the eight years when reallocations from the BSAI Pacific cod trawl sector were received by the BSAI Pacific cod <60' HAL and Pot sectors: in three of them reallocations from the BSAI Pacific cod trawl sector accounted for more than 50 percent of all reallocations received by the BSAI Pacific cod <60' HAL and Pot sectors from all sectors combined; in three they accounted for between 25 to 49 percent; and in the remaining two they accounted for between 12 to 24 percent of all reallocations received by the BSAI Pacific cod <60' HAL and Pot sectors from all other sectors combined.

Table 2-77 summarizes some of the key data referenced in the previous two paragraphs and provides additional information on the reallocations from the BSAI Pacific cod CV trawl sector as a percentage of final allocations of the BSAI Pacific cod <60' HAL and pot sector by year 2004-2019. As shown, these reallocations occurred in eight of the 10 most recent years covered by the table (2010-2019) and, in those eight years, accounted for 5.6 percent of the final allocation of the BSAI Pacific cod <60' HAL and pot sector in the low year (2012) and 40.5 percent in the high year (2019). Including the years in which no reallocations from the BSAI Pacific cod CV trawl sector to the BSAI Pacific cod <60' HAL and pot sector occurred, reallocations from BSAI Pacific cod CV trawl sector to the BSAI Pacific cod <60' HAL and pot sector accounted for 18.4 percent of final allocations to that BSAI Pacific cod <60' HAL and pot sector on an annual average basis 2010-2019.

Table 2-77 BSAI Pacific cod HAL and pot CV <60' sector reallocations from the BSAI Pacific cod trawl CV sector as a percentage of final allocations by year, 2004-2019

Year	Final Allocation (initial allocation plus all reallocations) (mt)	Initial Allocation (mt)	Total reallocation received from all sectors (mt)	Total reallocation received from all sectors as a percent of final allocation	Reallocation received from Trawl CV sector only (mt)	Reallocation received from Trawl CV sector only as a percent of total reallocation received from all sectors	Reallocation from Trawl CV Sector Only as Percent of Final Allocation
2004	2,961	1,416	1,545	52.2%	0	0.0%	0.0%
2005	2,601	1,354	1,247	47.9%	0	0.0%	0.0%
2006	3,242	1,246	1,996	61.6%	0	0.0%	0.0%
2007	2,928	1,121	1,807	61.7%	0	0.0%	0.0%
2008	5,210	3,033	2,177	41.8%	0	0.0%	0.0%
2009	4,434	3,137	1,297	29.3%	0	0.0%	0.0%
2010	5,509	2,998	2,511	45.6%	500	19.9%	9.1%
2011	9,005	4,055	4,950	55.0%	2,590	52.3%	28.8%
2012	8,880	4,645	4,235	47.7%	500	11.8%	5.6%
2013	9,177	4,627	4,550	49.6%	0	0.0%	0.0%
2014	12,018	4,518	7,500	62.4%	2,000	26.7%	16.6%
2015	10,630	4,438	6,192	58.3%	3,500	56.5%	32.9%
2016	10,674	4,476	6,198	58.1%	2,000	32.3%	18.7%
2017	9,271	4,259	5,012	54.1%	0	0.0%	0.0%
2018	8,748	3,627	5,121	58.5%	2,200	43.0%	25.1%
2019	9,800	3,214	6,586	67.2%	3,970	60.3%	40.5%

BSAI Pacific Cod Hook-and-Line Catcher/processors

BSAI Pacific cod HAL C/Ps, also known as freezer longliners, could also be adversely affected by implementation of one or more of the proposed action alternatives, but in different ways than the BSAI Pacific cod HAL and Pot <60' CV sector. Like the BSAI Pacific cod HAL and Pot <60' CVs, HAL C/Ps have received reallocations from the CV trawl sector as well as from other sectors and, as shown in Table 2-8, over the years 2004-2019, the HAL C/P sector was the largest net recipient of reallocations from the BSAI Pacific cod trawl CV sector. In contrast to the continuing relative importance of these type of reallocations to the HAL and Pot <60' CV sector, however, over the years 2009-2019, reallocations from all other sectors accounted for 3.4 percent of the BSAI Pacific cod HAL C/P sector's final allocation. Reallocations from the trawl CV sector alone accounted for less than one percent of the HAL C/P sector's final allocation over these same years, such that potential adverse impacts from the discontinuation or diminishment of reallocations from the reallocations from the trawl CV sector to the HAL C/P sector as a result implementation of the proposed action alternatives would be negligible.

As discussed in Sections 2.9.6 and 2.10.4.2, however, participants in this sector could otherwise be adversely affected by some combinations of proposed action alternatives, elements, and options and external circumstances. Specifically, the BSAI Pacific cod HAL C/Ps would be potentially vulnerable to adverse effects in those circumstances where Aleutian Islands shore-based processor provisions (Element 6), in combination with low Aleutian Islands TACs could limit the ability of HAL C/Ps to directed fish for Pacific cod in the Aleutian Islands.

With respect to community affiliations, in 2019, 17 BSAI Pacific cod HAL C/Ps participated in the fishery. Of those: 16 had ownership addresses in the Seattle MSA; one had an "Other Washington" (in this case Lynden) ownership address; and one had an Anchorage, Alaska ownership address.

What is not apparent in ownership address information, however, is the ties to Alaska communities through CDQ ownership interests in 10 of the 17 HAL C/Ps that were active in the fishery that year (i.e.,

59 percent of all HAL C/Ps directly participating in the fishery). Table 2-78 shows the correspondence of the CDQ groups holding ownership interest in the 10 relevant vessels that were active in the fishery in 2019 with community of C/P ownership address, the ownership address of LLP licenses used on those C/Ps, and the homeports of those same vessels.⁶²

Table 2-78 Correspondence of CDQ group ownership interest in relevant BSAI Pacific cod HAL C/Ps with community of C/P ownership address, C/P homeport, and community of LLP license ownership address, 2019

C/P Vessel Name	CDQ Group with Ownership Interest	C/P Ownership Address Community	LLP License Ownership Address Community	C/P Homeport
Arctic Prowler	APICDA	Seattle MSA	Seattle MSA	Seattle MSA
Ocean Prowler	APICDA	Seattle MSA	Seattle MSA	Seattle MSA
Siberian Sea	APICDA	Seattle MSA	Seattle MSA	Seattle MSA
U.S. Liberator	APICDA	Seattle MSA	Seattle MSA	Seattle MSA
Alaskan Leader	BBEDC	Seattle MSA	Other WA	Kodiak, AK
Bering Leader	BBEDC	Seattle MSA	Seattle MSA	Kodiak, AK
Bristol Leader	BBEDC	Other WA	Other WA	Kodiak, AK
Northern Leader	BBEDC	Seattle MSA	Other WA	Kodiak, AK
Lilli Ann	CVRF	Anchorage, AK	Anchorage, AK	Scammon Bay, AK
Baranof	YDFDA	Seattle MSA	Seattle MSA	Seattle MSA

Note: Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: Identification of relevant CDQ BSAI Pacific cod HAL C/P ownership interest by APICDA, BBEDC, CBSFA, CVRF, NSEDC, and YDFDA 2021; CP ownership address and LLP license ownership address from NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA; CP homeport from 2021 CFEC Vessel file (except for Lilli Ann where 2019 data was used as the most recent available under that vessel name).

As the HAL C/P sector operates under a voluntary cooperative system, not all vessels that have C/P, HAL, and Bering Sea and/or Aleutian Island endorsements and access to LLP licenses with Pacific cod HAL C/P Aleutian Islands or Bering Sea endorsements and thus were able to participate in the sector actively did so in 2019. Additionally, some LLP license owners, within the constraints of Freezer Longline Coalition rules and NMFS regulations, leased out the use of their appropriately endorsed LLP licenses to third parties to generate income from the fishery. Looking at the larger pool of relevant vessels and LLP licenses, the depth of CDQ group ownership interest in this sector is even more apparent in the dataset which shows:

- CDQ groups have ownership interest in 17 out of the 37 (46 percent) of the LLP licenses with Pacific cod HAL C/P Aleutian Islands or Bering Sea endorsements. This ownership interest is

⁶² Ownership interest structure varies by CDQ group. APICDA Joint Ventures, a wholly owned subsidiary of APICDA, owns 50% of Aleutian Longline LLC which includes the relevant vessels and LLP licenses noted in the table and following bulleted paragraphs. BBEDC owns a 50% interest in the relevant vessels and LLP licenses noted through a series of LLCs including Alaska Leader Vessel LLC, Bering Leader Fisheries LLC, Bristol Leader Fisheries LLC, Northern Leader Fisheries LLC, and Kodiak Fisheries LLC, among others. Coastal Villages Longline LLC, a subsidiary of CVRF, holds CVRF's 100% ownership interest in its three BSAI Pacific cod HAL C/P endorsed LLP licenses and the licenses are used on a mix of vessels that varies each year with, for example, the quota having been low enough in 2021 that all CVRF fish can be caught by one vessel. YDFDA has a 41% ownership interest in the BSAI Pacific cod HAL C/P Baranof and the LLP license used on that vessel via Romanzof Fishing Company LLC.

spread across five of the six CDQ groups as APICDA has ownership interest in seven of these LLP licenses, BBEDC in four, CVRF in three, YDFDA in two, and NSEDC in one. Of the 17 LLP licenses with identified CDQ ownership interest, four have Anchorage ownership addresses, nine have Seattle MSA ownership addresses, and four have other Washington ownership addresses (all in Lynden WA). Of the 20 LLP licenses with Pacific cod HAL C/P Aleutian Islands or Bering Sea endorsements without identified CDQ ownership interest, all have Seattle MSA ownership addresses.

- CDQ groups have ownership interest in 11 out of the 28 (39 percent) of the vessels that have C/P, HAL, and Bering Sea and/or Aleutian Island endorsements (10 of which are shown in Table 2-78). This ownership interest is spread across four of the six CDQ groups: APICDA has ownership interest in four of these vessels, BBEDC in four, CVRF in two,⁶³ and YDFDA in one.⁶⁴ (NSEDC is the only CDQ with ownership interest in LLP licenses with Pacific cod HAL C/P Aleutian Islands or Bering Sea endorsements but no ownership interest in a C/P that participates in the sector.⁶⁵) Of the 11 vessels with CDQ ownership interest, two have Anchorage ownership addresses, six have Seattle MSA ownership addresses, and three have other Washington ownership addresses (all in Lynden). Of the 17 vessels without identified CDQ ownership interest that have C/P, HAL, and Bering Sea and/or Aleutian Island endorsements one has an Anchorage, Alaska ownership address and the rest have Seattle MSA ownership addresses. Additionally, of the 17 vessels without identified CDQ ownership interest, four have homeports in Alaska (two in Petersburg and one each in Juneau/Douglas and Unalaska/Dutch Harbor) with the remaining 13 shown in the data as homeported in the Seattle MSA.

In addition to five of the six CDQ groups having ownership interests in the vessels and the LLP licenses utilized in the freezer longline sector, the Bristol Bay Native Corporation (BBNC) has relatively recently acquired substantial ownership interest in the BSAI Pacific cod HAL C/P sector. BBNC is one of the 13 Alaska Native Regional Corporations created under the Alaska Native Claims Settlement Act (ANCSA) and encompasses 31 villages/communities, including the 17 member communities of the BBEDC CDQ group and another 14 ANCSA communities that were too far inland or too close to the Gulf of Alaska to have qualified for inclusion in the CDQ program. In October 2019, BBNC acquired controlling interest in Clipper Seafoods and Blue North Fisheries, which were merged into a new Alaska seafood company, Bristol Wave Seafoods, a subsidiary of BBNC.⁶⁶ Going into Bristol Wave Seafoods, Clipper Seafoods and Blue North Fisheries together accounted for a total of 10 freezer longliners (following the retirement of one of the Blue North Fisheries vessels).⁶⁷ In the dataset used for this analysis, all Bristol Wave Seafoods BSAI Pacific cod HAL C/Ps have ownership addresses listed as being in the Seattle MSA, as do

⁶³ In addition to the Lilli Ann, CVRF also has an ownership interest (via Coastal Villages Longline LLC) in the HAL C/P Flicka, which was not active in the BSAI Pacific cod fishery in 2019 (and thus is not shown in Table 2-78). The vessel ownership address of Flicka and the LLP license utilized by the vessel is shown in the dataset as Anchorage, AK and its homeport is listed as Newtok, AK.

⁶⁴ In addition to previously noted ownership in the Baranof, YDFDA (via Akulurak LLC) also has an 85% ownership interest in the BSAI Pacific cod HAL C/P Courageous (and the LLP license that has been associated with that vessel). That vessel is not enumerated as currently active here, however, as according to the YDFDA website, "YDFDA decided to tie up the vessel [Courageous] and fish the Bering Sea Pacific cod license elsewhere to maximize revenues" (https://ydfda.org/sites/default/files/2021-02/YDFDA_2019%20AnnReport%20-%20Lower%20Resolution_0.pdf accessed 7/6/2021) nor was it active in 2019 (and thus is not shown in Table 2-78 either), although it remains an asset of YDFDA.

⁶⁵ NSEDC, whose ownership of the relevant LLP license is through its wholly owned subsidiary Siu Alaska Corporation, formerly had ownership interest in and operated the HAL C/P Glacier Bay. It no longer has any HAL C/P ownership interest but has retained and leases out its LLP license.

⁶⁶ <https://www.bbnc.net/our-operations/seafood/> accessed 7/10/2021.

⁶⁷ The Clipper Seafoods HAL C/Ps included the Clipper Endeavor, Clipper Epic, Clipper Surprise, Frontier Explorer, Frontier Mariner, and Frontier Spirit. Blue North HAL C/Ps included the Blue Attu, Blue Ballard, Blue Gadus, and Blue North (with the Blue Pacific not having been active after 2016). All 10 active vessels have their homeports listed as Seattle per the Alaska CFEC database (<https://www.cfec.state.ak.us/plook/#vessels> accessed 7/13/2021).

the LLP licenses with Pacific cod HAL C/P Aleutian Islands or Bering Sea endorsements used aboard those vessels.

2.8.9.2. The Community Context of the BSAI Pacific Cod Trawl Fishery

The among Alaska communities, Unalaska/Dutch Harbor, Akutan, Adak, and Kodiak (and, to a lesser extent, King Cove and Sand Point) appear to potentially be substantially engaged in or dependent on portions of the BSAI Pacific cod fishery. Extensive descriptive information is available and readily accessible for each of these communities in documents prepared in whole or in part to support the Council's management decision making process for other actions. These include the 2005 Comprehensive Baseline Commercial Fishing Community Profiles for Unalaska, Akutan, King Cove, and Kodiak⁶⁸ and the 2008 parallel volume that includes Sand Point and Adak.⁶⁹ While these sources are now somewhat dated, they represent the most current comprehensive fishing-oriented profiles available. Council SIAs containing more recent if less broadly comprehensive information on these communities include: the 2020 BSAI Halibut ABM of PSC Limits SIA;⁷⁰ the 2017 BSAI Crab Rationalization 10-year program review SIA;⁷¹ the 2017 Central GOA Rockfish Program Review SIA;⁷² and the 2016 GOA Trawl Bycatch Management Analysis SIA,⁷³ among others. The detailed community descriptions in those documents are incorporated by reference rather than recapitulated here; summary information from these previous analyses has been incorporated where appropriate. The following sections focus on the key points of engagement and dependency of these communities with respect to the relevant sectors of the BSAI Pacific cod fishery.

2.8.9.2.1. Alaska Communities

Table 2-79 provides an overview of more recent demographic characteristics for Unalaska/Dutch Harbor, Akutan, Adak, Kodiak, King Cove and Sand Point than are available in the resources noted above as incorporated by reference. Also included in this table are False Pass and Homer, communities noted below as having at least limited and/or recent direct engagement in the fishery, as well as Atka, which may benefit from AI processor provisions, should Element 6 of the suite of alternatives, elements, and options be included in the ultimately adopted PA. Table 2-80 provides updated data on school enrollments in those same communities, for both kindergarten through 12th grade (KG-12) and pre-kindergarten through 12th grade (PK-12), by community for the 2020-2021 school year. Table 2-81 provides an institutional summary for those same communities, including borough and municipal incorporation type information, status as an Alaska Native village under ANCSA, federally recognized tribe status, and CDQ membership status.

⁶⁸ https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/AKCommunityProfilesVol1.pdf

⁶⁹ https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/AKCommunityProfilesVol2.pdf

⁷⁰ <https://meetings.npfmc.org/CommentReview/DownloadFile?p=4cfeb17d-174d-4653-b8df-ff23af54531c.pdf&fileName=C2%20BSAI%20Halibut%20ABM%20SIA%20.pdf>

⁷¹ https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Crab/AppendixA-SocialImpactAssessment.pdf

⁷² https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Rockfish/CGOA_RockfishReview_SIA1017.pdf

⁷³ https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/GOAtrawlSIA.pdf

Table 2-79 Selected demographic characteristics: Alaska communities engaged in the BSAI Pacific cod CV fishery 2004-2019, Atka, and the State of Alaska

Community	2010 Decennial Census Data				2019 American Community Survey Data				
	Total Population	Alaska Native/ Native American Residents (percent of total population)	Minority* Residents (percent of total population)	Residents Living in Group Quarters** (percent of total population)	Per Capita Income (dollars)	Median Household Income (dollars)	Number of Family House- holds	Median Family Income (dollars)	Low-Income*** Residents (percent of total population)
Adak	326	5.5%	81.9%	66.6%	\$35,193	\$70,000	25	\$68,750	16.4%
Atka	61	95.1%	95.1%	0.0%	\$23,247	\$48,750	8	-	14.0%
Unalaska/Dutch Harbor	4,376	6.1%	66.3%	48.0%	\$39,292	\$94,750	611	\$101,250	5.7%
Akutan	1,027	5.5%	90.8%	91.2%	\$32,871	\$48,125	48	\$49,167	16.3%
False Pass	35	77.1%	80.0%	0.0%	\$40,780	\$54,250	8	\$68,750	0.0%
King Cove	938	38.4%	89.9%	46.7%	\$32,761	\$73,229	188	\$74,444	13.6%
Sand Point	976	39.0%	86.1%	35.9%	\$34,675	\$67,500	265	\$82,292	14.3%
Kodiak	6,130	9.9%	62.7%	1.3%	\$32,699	\$73,310	1,165	\$83,693	8.6%
Homer	5,003	4.1%	11.7%	0.8%	\$34,709	\$60,993	1,371	\$83,036	10.3%
State of Alaska	626,932	14.1%	37.1%	1.8%	\$36,787	\$77,640	166,325	\$92,588	10.7%

*Defined as all persons other than those self-identified being in both "white" and "non-Hispanic" census categories.

**Defined as "other noninstitutional facilities," which excludes institutionalized populations, college/university student housing, and military quarters.

***Defined as those persons living below the poverty threshold by the U.S. Census Bureau in the 2014-2018 American Community Survey. As a point of reference, a family of four (two adults and two children) had a poverty threshold of \$25,926 in 2019.

Source: US Census 2010; US Census 2020.

Table 2-80 School total enrollments, 2020/2021 school year (as of October 1, 2020), Kindergarten-Grade 12 and Pre-Kindergarten-Grade 12, by community for Alaska communities engaged in the BSAI Pacific cod CV fishery 2004-2019 and Atka

Community	School District	School	Total KG-12	Total PK-12
Adak	Aleutian Region School District	Adak School	15	15
Atka	Aleutian Region School District	Yakov E. Netsvetov School	10	10
Unalaska	Unalaska City School District	Eagle's View Elementary School	226	226
Unalaska	Unalaska City School District	Unalaska Jr/Sr High School	161	161
Akutan	Aleutians East Borough School District	Akutan School	17	17
False Pass	Aleutians East Borough School District	False Pass School	10	11
King Cove	Aleutians East Borough School District	King Cove School	75	83
Sand Point	Aleutians East Borough School District	Sand Point School	104	117
Kodiak	Kodiak Island Borough School District	East Elementary	260	336
Kodiak	Kodiak Island Borough School District	Main Elementary	181	181
Kodiak	Kodiak Island Borough School District	North Star Elementary	234	234
Kodiak	Kodiak Island Borough School District	Peterson Elementary	195	195
Kodiak	Kodiak Island Borough School District	Kodiak Middle School	420	420
Kodiak	Kodiak Island Borough School District	Kodiak High School	611	611

Source: <https://education.alaska.gov/data-center>, accessed 6/26/2021.

Table 2-81 Community institutional summary: Alaska communities engaged in the BSAI Pacific cod CV fishery 2004-2019 and Atka

Community	Alaska Native Community Name (Language)	Borough	Municipal Government	Incorporation Type (and Date)	ANCSA Community	ANCSA Regional Corporation	ANCSA Village Corporation	Federally Recognized Tribe	CDQ Community (Group)
Adak	Adaax (Unangan Aleut)	Unorganized Borough	City of Adak	2nd Class City (2001)	No	Aleut Corporation	--	--	No
Atka	Atx'ax' (Unangan Aleut)	Unorganized Borough	City of Atka	2nd Class City (1988)	Yes	Aleut Corporation	Axam Corporation	Native Village of Atka	Yes (APICDA)
Unalaska	Iluulux' (Unangan Aleut)	Unorganized Borough	City of Unalaska	1st Class City (1942)	Yes	Aleut Corporation	Ounalashka Corporation	Qawalangin Tribe of Unalaska	No*
Akutan	Achan-ingiiga (Unangan Aleut)	Aleutians East Borough	City of Akutan	2nd Class City (1979)	Yes	Aleut Corporation	Akutan Corporation	Native Village of Akutan	Yes (APICDA)
False Pass	IsanaX (Unangan Aleut)	Aleutians East Borough	City of False Pass	2nd Class City (1990)	Yes	Aleut Corporation	Isanotski Corporation	Native Village of False Pass	Yes (APICDA)
King Cove	Agdaagux' (Unangan Aleut)	Aleutians East Borough	City of King Cove	1st Class City (1947)	Yes	Aleut Corporation	The King Cove Corporation	Agdaagux Tribe of King Cove**	No
Sand Point	Not Available	Aleutians East Borough	City of Sand Point	1st Class City (1978)	Yes	Aleut Corporation	Shumagin Corporation	Qagan Tayagungin Tribe of Sand Point Village***	No
Kodiak	Sun'aq (Sugt'stun)	Kodiak Island Borough	City of Kodiak	Home Rule City (1940)	Yes	Koniag, Inc.	Natives of Kodiak, Incorporated	Sun'aq Tribe of Kodiak	No

*Although Unalaska is not a CDQ community, it is an ex-officio member of APICDA.

**There are two federally recognized tribes located in the contemporary community of King Cove. In addition to the tribe noted above, the Native Village of Belkofski is also present in the community.

***There are three federally recognized tribes located in the contemporary community of Sand Point. In addition to the tribe noted above, Pauloff Harbor Village and the Native Village of Unga are also present in the community.

Source: DCRA Community Database, <https://dcra-cdo-dcoed.opendata.arcgis.com/> Accessed 10/6/2020.

Unalaska/Dutch Harbor, Akutan, and Adak

The communities of Unalaska/Dutch Harbor, Akutan, and Adak over the years 2004-2019 were directly engaged in the BSAI Pacific cod trawl fishery primarily as the location of shore-based processing operations that accepted deliveries of trawl-caught BSAI Pacific cod. Aside from one vessel in 2007 with an Unalaska/Dutch Harbor ownership address, no BSAI Pacific cod trawl CVs with ownership addresses in any of these communities participated in the fishery in any year 2004-2019 nor were any LLP licenses with ownership addresses in any of these communities used aboard vessels active in the fishery during that period.

Together, the shore-based processors in Unalaska/Dutch Harbor and Akutan accounted for approximately 70 percent of all trawl-caught BSAI Pacific cod CV deliveries over the years 2004-2019, making those communities, which are approximately 35 miles apart as the crow flies, the economic center of the shore-based processing component⁷⁴ of fishery in absolute terms. A general knowledge of the fishery, however, would suggest that the large plants in these communities are relatively less economically dependent on trawl-caught BSAI Pacific cod deliveries than is the plant in Adak during the years it has operated, given the more diversified processing portfolio of the much larger Unalaska/Dutch Harbor and Akutan plants. This is not to say that the fishery is unimportant to the annual operational rounds of any of those plants as,

⁷⁴ While not reflected in the quantitative dataset used for this analysis (due to a lack of adequate location of operation information in the data), it is important to note that both Unalaska/Dutch Harbor and Akutan are the location of regular floating processor participation in the fishery. In the case of Akutan one floating processor, owned and operated by the same firm that owns and operates the shore-based processor in the community, has processed trawl-caught BSAI Pacific cod within city limits in Akutan Bay in each year 2004-2019. In the case of Unalaska/Dutch Harbor one floating processor, owned and operated by a firm that also operated the shore-based processing plant in Adak during two separate intervals 2004-2019, has processed trawl caught BSAI Pacific cod in Wide Bay (itself a part of Unalaska Bay) within the city limits of Unalaska each year 2013-2019 (and other floating processors owned by the same firm intermittently participated in the same fishery within Unalaska city limits in several earlier years during the 2004-2019 period). From the community perspective, floating processor activity within city limits is equivalent to shore-based processing activity with respect to both local fish tax and shared state fish tax revenue. These floating processors also typically generate at least some ancillary support service business activity in their community of operation, but this varies widely by community based on the presence of support service business providers and community fishery support infrastructure.

for example, a fishery may also be valuable for providing income and employment opportunities for processing crews during an otherwise slow time of the year, a chance to recover at least a portion of fixed costs during that time, and/or opportunities for maintaining positive business relationships with CVs with which the plant may have ongoing ties (in addition to being valuable in absolute terms). Further, processing of Pacific cod at these plants is separate and distinct from other processing activities in the Unalaska/Dutch Harbor and Akutan plants, requiring separate processing lines and considerable investment in processing infrastructure and personnel.

As noted in the previous section, shore-based processing of deliveries of BSAI Pacific cod by the HAL <60' fleet over the years 2004-2019 took place almost exclusively in Unalaska/Dutch Harbor and Akutan. Shore-based processing of deliveries by BSAI Pacific cod by the pot <60' fleet also took place in Unalaska/Dutch Harbor and Akutan in the BSAI region (and, to a lesser extent, in King Cove, Sand Point, and Kodiak in the GOA region).

Also as noted in the previous section, no BSAI Pacific cod HAL and/or pot <60' CVs active in the fishery 2004-2019 had Akutan ownership addresses and only one Adak ownership address vessel participated in the HAL portion of that sector during that same period (specifically in seven out of the nine years 2005-2013). In contrast, a substantial portion of the Unalaska/Dutch Harbor ownership address CV fleet participated in both the HAL and/or pot components of the <60' fishery each year 2004-2019. While Unalaska/Dutch Harbor participates at an industrial scale in all the major BSAI fisheries through the locally operating shore-based processing sector and support service sectors, the local CV fleet is composed of relatively small vessels that are relatively few in number. The revenues generated by the HAL and pot <60' CVs in the BSAI Pacific cod fisheries are substantial not just for the vessels directly involved but also at the Unalaska/Dutch Harbor "community fleet" level.

Unalaska, traditionally an Aleut community, has become a relatively large, plural community with population growth that has accompanied port and fisheries-related development. Despite being an ANCSA village and having a federally recognized tribe, Unalaska did not qualify for CDQ membership based in part on having previously developed harvesting or processing capability sufficient to support substantial groundfish participation in the BSAI. It is, however, an *ex-officio* member of the Aleutian Pribilof Island Community Development Association (APICDA) CDQ group, a status that facilitates the participation of Unalaska residents in a range of APICDA programs. While the Unalaska/Dutch Harbor local commercial fishing fleet is typically represented in the Council and other regulatory processes by the Unalaska Native Fishermen's Association which, according to tribal leadership has a close working relationship with the Qawalangin Tribe of Unalaska, membership is not limited to those residents of Alaska Native descent. The demographics of the owners and crew of the specific <60' HAL/pot vessels that would potentially experience adverse impacts under one or more of the proposed alternatives are unknown, but a general knowledge of the fleet would suggest that its demographics are largely reflective of the general/residential population of the community.

Adak is also a relatively diverse community with a shore-based processor and is still transitioning from its days as a relatively large military base in the 1990s to a small civilian Alaskan community. While neither an ANCSA community nor the location of a federally recognized tribe, Adak does have strong ties to the Aleut Corporation (AC), which is the ANCSA regional corporation, and its subsidiaries, which have been heavily involved with the conversion of the former military installation into a civilian community with a local economy based on commercial fishing and maritime support services. The AC and its subsidiaries own much of the infrastructure in the community, including the buildings that have housed a succession of shore-based seafood processing operations, and are otherwise directly involved in fishery issues as the recipient of a directed fishery allocation of AI pollock to support the economic development of the community of Adak. While not a CDQ community, Adak is the only community outside of the GOA with a Community Quota Entity (CQE). The local CQE, the Adak Community Development Corporation, is involved with range of fishery issues, including (1) managing the community's 10 percent allocation of the Western Aleutian golden king crab quota initially allocated under the BSAI crab rationalization

program to aid in the development of seafood harvesting and processing activities within the community and (2) increasing Adak ownership of IFQ in the halibut and sablefish fisheries through the CQE program. The City of Adak is financially involved in the local seafood processing plant as it bought processing equipment from a former plant operator and then financed the sale of the gear to the most recent plant operator, which ceased operations in June 2020.

Akutan, a community within the Aleutians East Borough (AEB), is somewhat unique demographically since it is the home of a large shore-based processor and the demographics of the processing workforce residing in company housing at the plant site⁷⁵ tend to overshadow those of the comparatively small, predominately Alaska Native population residing within the traditional community footprint. The dual nature of the community demographics and socioeconomic attributes is reflected in the history of the community involvement in the CDQ program. Initially (in 1992), Akutan was deemed not eligible for participation in the CDQ program as the community was home to “previously developed harvesting or processing capability sufficient to support substantial groundfish participation in the BSAI...” though the community met other qualifying criteria. The Akutan Traditional Council subsequently initiated action to show that large industrial enclave-style development of the locally operating shore-based processor was essentially socially and economically separate and distinct from the traditional community of Akutan. With the support of APICDA and others, Akutan was successful in obtaining CDQ community status in 1996 and became a member community of APICDA.

Since becoming the sites of shore-based processing operations, Unalaska/Dutch Harbor, Akutan, and Adak have historically had a substantial proportion of their populations living in group quarters, and the percentage of minority residents in all three communities has been much higher than the percentage of Alaska Native residents alone. One specific demographic challenge faced by Adak and Akutan has been retaining a large enough number of families with children to qualify for state funding of a school in the community (which requires a minimum of 10 students). The loss of any families with school age children from the community raises concerns about the ability to keep the school open which, were they to close, would make retention of other families with school age children in the community all the more difficult.⁷⁶

With respect to local economies, the importance of commercial fishing for Unalaska/Dutch Harbor cannot be overstated, as Unalaska/Dutch Harbor has ranked as the number one U.S. port in volume of landings since 1992 and has ranked second in value of landings (behind New Bedford, Massachusetts) since 2000. In recent years, employment statistics for Unalaska/Dutch Harbor have shown that the top three employers in the community were seafood processing companies, and that their employees accounted for over half of all employment in the city. The support service sector for the commercial fishing fleet is by far the most developed in the BSAI region, and Unalaska and firms dependent on the fisheries, such as stevedoring and shipping, regularly rank as some of the largest employers. There is no other community in the region with the level of development or the range of support services provided to the various fishery sectors operating in the BSAI region, which include accounting and bookkeeping, banking, construction and engineering, diesel sales and service, electrical and electronics services, freight forwarding, hydraulic services, logistical support, marine pilots/tugs, maritime agencies, gear replacement and repair, vessel repair, stevedoring, vehicle rentals, warehousing, and welding, among others (AECOM 2010; NOAA 2014).

Akutan, in contrast, has seen little in the way of fishery support service development, but the local processing operation accounts for a large percentage of local private sector employment and income

⁷⁵ According to the owner/operator’s website, the Akutan shoreplant has become the largest seafood production facility in North America with more than 1,400 company-housed employees present during peak seasons (accessed 6/30/2021).

⁷⁶ In the case of Adak, it is known that following the closure of the local processing plant in 2020, a family with four school age children left the community (Minor, personal communication, 8/6/2020), moving the number of potential school enrollees closer to the minimum required for state funding. This drop is reflected in the state enrollment numbers shown Table 2-80 when compared with the state enrollment numbers from the 2019-2020 school year.

opportunities. Adak also has few support capabilities relatively to those available in Unalaska/Dutch Harbor aside from its deep-water port, a fueling station capable of accommodating large vessels, and the ability to support larger-scale aircraft operations at its airport than any other civilian community west of Cold Bay which, along with the local housing supply, has been used to facilitate fishing vessel crew transfers among other logistical fishery support functions.

Table 2-82 provides information on City of Unalaska tax revenue deriving from sources directly related to fishing activities (the city raw seafood tax, the state shared fisheries business tax, and the state shared fisheries resource landing tax) compared to all general fund revenues received by the city for fiscal years 2010-2019. As shown, for the City of Unalaska, between roughly 37 percent and 50 percent of all general fund revenues in any given year derive from direct fishery revenue sources. These figures do not include revenue from other taxes and fees from activities in the community that are fishing related (e.g., property taxes paid by fisheries businesses, fuel transfer tax revenue, and harbor fee revenue, among others).

Table 2-82 City of Unalaska selected fisheries-related general fund revenues, fiscal years 2010-2019

Fiscal Year	Revenue (dollars) by Direct Fishery Revenue Source				Direct Fishery Revenue Source Total	All General Fund Revenue	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
	Direct Fishery Revenue Source			Direct Fishery Revenue Source Total			
	City Raw Seafood Tax	Shared State Fisheries Business Tax	Shared State Fisheries Resource Landing Tax				
FY 2010	\$3,594,173	\$4,547,084	\$4,676,603	\$12,817,860	\$29,604,371	43.3%	
FY 2011	\$5,371,768	\$3,199,290	\$3,531,739	\$12,102,797	\$29,152,912	41.5%	
FY 2012	\$5,260,999	\$4,143,777	\$3,469,263	\$12,874,039	\$31,634,417	40.7%	
FY 2013	\$4,784,198	\$4,398,441	\$4,898,543	\$14,081,182	\$32,609,892	43.2%	
FY 2014	\$4,449,921	\$4,377,934	\$6,974,887	\$15,802,742	\$34,376,971	46.0%	
FY 2015	\$4,981,770	\$3,639,448	\$5,014,309	\$13,635,527	\$34,525,170	39.5%	
FY 2016	\$5,123,372	\$4,099,315	\$3,034,438	\$12,257,125	\$30,723,626	39.9%	
FY 2017	\$4,657,385	\$4,276,287	\$8,272,661	\$17,206,333	\$34,371,441	50.1%	
FY 2018	\$4,475,150	\$4,014,323	\$4,532,106	\$13,021,579	\$30,300,957	43.0%	
FY 2019	\$4,761,506	\$3,528,499	\$5,220,958	\$13,510,963	\$36,419,248	37.1%	

Source: City of Unalaska, Alaska. Comprehensive Annual Financial Reports, Fiscal Years 2010-2019. <https://www.commerce.alaska.gov/dcra/dcrepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 4/25/2020.

Table 2-83 provides information on City of Akutan tax revenues deriving from direct fishery revenue sources (the city raw seafood tax, the state shared fisheries business tax, and the state shared fisheries resource landing tax) compared to all general fund revenues received by the city for fiscal years 2010-2019. As shown, for the City of Akutan, between roughly 75 percent and 99 percent of all general fund revenues in any given year derive from direct fishery revenue sources.

Table 2-83 City of Akutan selected fisheries-related general fund revenues, fiscal years 2010-2019

Fiscal Year	Revenue (dollars) by Direct Fishery Revenue Source				All General Fund Revenue	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
	Direct Fishery Revenue Source					
	City Raw Seafood Tax	Shared State Fisheries Business Tax	Shared State Fisheries Resource Landing Tax	Direct Fishery Revenue Source Total		
FY2010	\$753,127	\$1,088,369	\$307,561	\$2,149,057	\$2,588,527	83.0%
FY 2011	\$1,222,653	\$827,408	\$154,758	\$2,204,819	\$2,926,637	75.3%
FY 2012	\$1,385,057	\$853,570	\$244,134	\$2,482,761	\$3,077,710	80.7%
FY 2013	\$1,663,209	\$1,186,396	\$178,611	\$3,028,216	\$3,831,293	79.0%
FY 2014	\$1,715,128	\$1,217,118	\$157,540	\$3,089,786	\$3,602,184	85.8%
FY 2015	\$1,774,963	\$1,029,663	\$69,412	\$2,874,038	\$3,418,630	84.1%
FY 2016	\$2,098,763	\$943,814	\$173,049	\$3,215,626	\$3,253,634	98.8%
FY 2017	\$2,044,698	\$1,082,206	\$210,114	\$3,337,018	\$3,784,609	88.2%
FY 2018	\$1,985,328	\$1,358,949	\$4,916	\$3,349,193	\$3,796,184	88.2%
FY 2019	\$2,101,784	\$1,097,955	\$163,372	\$3,363,111	\$3,887,032	86.5%

Note: in 2013, the City of Akutan raised its local fish tax from 1.0 to 1.5 percent.
 Source: City of Akutan, Alaska Basic Financial Statements, Required Supplementary Information, Additional Supplementary Information, and Compliance Reports, fiscal years 2010-2013 and 2015-2019; Certified Financial Statement, fiscal year 2014.
<https://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 9/15/2020.

Table 2-84 provides information on City of Adak tax revenues deriving from direct fishery revenue sources (the city raw seafood tax, the state shared fisheries business tax, and the state shared fisheries resource landing tax) compared to all general fund revenues received by the city for fiscal years 2010-2019. As shown, for the City of Adak, between roughly 25 percent and 49 percent of all general fund revenues in any given year derive from direct fishery revenue sources.

Table 2-84 City of Adak selected fisheries-related general fund revenues, fiscal years 2010-2019

Fiscal Year	Revenue (dollars) by Direct Fishery Revenue Source					Direct Fishery Revenue Source Total	All General Fund Revenue	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
	Direct Fishery Revenue Source							
	City Raw Seafood Tax	State Fisheries Business Tax from DOR	State Fisheries Resource Landing Tax from DOR	State Fisheries Business Tax from DCCED	State Fisheries Resource Landing Tax from DCCED			
FY 2010	na	\$311,439	\$97,736	\$308,178	\$0	\$717,353	\$1,464,483	49.0%
FY 2011	na	\$13,567	\$54,949	\$98,973	\$92,919	\$260,408	\$1,015,485	25.6%
FY 2012	na	\$143,848	\$40,219	\$122,743	\$165,964	\$472,774	\$1,916,341	24.7%
FY 2013	\$108,094	\$75,469	\$61,035	\$145,816	\$115,360	\$505,774	\$1,507,930	33.5%
FY 2014	\$140,193	\$168,370	\$86,452	\$139,135	\$111,999	\$646,149	\$1,410,574	45.8%
FY 2015	\$65,349	\$122,489	\$54,660	\$108,405	\$40,443	\$391,346	\$1,310,497	29.9%
FY 2016	\$76,313	\$67,968	\$1,683	\$110,149	\$14,351	\$270,465	\$1,084,898	24.9%
FY 2017	\$108,602	\$44,636	\$103,209	\$82,413	\$158,858	\$497,718	\$1,208,202	41.2%
FY 2018	\$290,839	\$34,908	\$74,247	\$121,121	\$79,832	\$600,947	\$1,549,197	38.8%
FY 2019	\$330,883	\$34,131	\$161,256	\$73,844	\$121,952	\$722,066	\$1,478,153	48.8%

Source: City of Adak, Alaska. Annual Consolidated Financial Statements Fiscal Years 2010-2019.
<https://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 9/15/2020.

Kodiak

Kodiak over the years 2004-2019 was directly engaged in the BSAI Pacific cod trawl fishery primarily as a community of ownership address for BSAI Pacific cod trawl CVs and LLP licenses used in the fishery. While four other Alaska communities appear in the BSAI Pacific cod trawl fishery data as having CVs with local ownership addresses active in the fishery for between one and six years during the seven-year

span 2004-2010, all Alaska address ownership of trawl CVs active in the fishery was exclusive to Kodiak for the most recent nine years covered by the data (2011-2019). A similar, if less complete and more recent level of consolidation of Alaska community of ownership address of LLP licenses used in the BSAI Pacific cod trawl CV fleet has also occurred. While three other Alaska communities appear in the data as being communities of ownership address of LLP licenses used in the BSAI Pacific cod trawl CV fishery in the five years 2004-2008, Alaska community(ies) of ownership address of LLP licenses used in the fishery 2009-2019 have been limited to Kodiak, or Kodiak and Homer, in the nine out of 11 years during that period when any Alaska ownership address LLP licenses were used in the fishery.

Kodiak, with a 2010 census population of 6,130,⁷⁷ is a relatively large community by Alaska standards, the home of a large CV fleet, and the location of operation of a large shore-based processing sector. While the community is the node for engagement Alaska ownership address vessels within the BSAI Pacific cod trawl CV sector, this engagement is modest at the community level relative to the engagement its local fleet in other fisheries. Although individual vessel operations vary in their fishery portfolios and the focus of their fishing efforts shows considerable year-to-year variability, the level of economic dependency of Kodiak ownership address trawl CVs as a group on the BSAI Pacific cod fishery is less than 10 percent as measured by relative contribution to average annual ex-vessel gross revenues 2004-2019. While not an insignificant amount, it reflects a heavier focus on GOA rather than BSAI fisheries.

Kodiak ownership address BSAI Pacific cod <60' pot CVs are more numerous than Kodiak ownership address BSAI Pacific cod trawl CVs, their annual average ex-vessel gross revenues from the BSAI Pacific cod fishery is higher than their trawl vessel counterparts, and their economic dependency on the BSAI Pacific cod fishery, as measured by a greater than 40 percent contribution to their annual average total ex-vessel gross revenue as group, is also higher than the analogous figure for their trawl vessel counterparts. No shore-based processors in Kodiak accepted deliveries of trawl-caught BSAI Pacific cod in the years 2004-2019, but some accepted deliveries of pot-caught BSAI Pacific cod from vessels in the <60' sector, although these were modest compared to the deliveries to Kodiak shore-based processors from GOA fisheries (and compared to pot-caught BSAI Pacific cod deliveries from the <60' sector to shore-based processors in the BSAI region).

Kodiak has a robust, well-developed fishery support services sector. This sector provides services to not only to the local fleet, including BSAI Pacific cod trawl and pot <60' vessels, but to vessels from other communities working in a wide range of fisheries as well.

Sand Point and King Cove

The AEB communities of Sand Point and King Cove have somewhat similar types of engagement in the BSAI Pacific cod trawl CV fishery and BSAI Pacific cod pot <60' CV fishery. Sand Point was linked to the trawl fishery through local ownership addresses of CVs in the six years 2004-2009 (including multiple vessels in three of those years) but has not been the ownership address of any BSAI Pacific cod trawl CVs in the most recent 10 years covered by the data used for this analysis (2010-2019). Sand Point was also the ownership address of one LLP license used in the BSAI Pacific cod fishery for one year during this period (2007), but in no other year 2004-2019. King Cove was not the community of ownership address for any BSAI Pacific cod trawl CVs, or of any LLP licenses used in that fishery in any year 2004-2019.

⁷⁷ This figure only represents population of the City of Kodiak. The City of Kodiak is an incorporated municipality within the Kodiak Island Borough. There are multiple unincorporated census designated places within the Kodiak Island Borough with substantial populations adjacent to the city limits of the City of Kodiak or nearby on the road system with easy access to the City of Kodiak. This larger populated area could, under a range of circumstances, usefully be considered a "community" for the purposes of fishery management impact analyses, as could the Kodiak Island Borough, depending on the nature and magnitude of community and social impacts anticipated to result from specific proposed fishery management changes. In the case of the current analysis, under any of the proposed alternatives, no high and adverse community-level impacts are anticipated for the City of Kodiak, the Kodiak Island Borough, or aggregations of populations larger than the City but smaller than the Borough.

Both Sand Point and King Cove were, however, the location of shore-based processors accepting trawl-caught deliveries of BSAI Pacific cod regularly over the period 2004-2019, with the processor in Sand Point accepting deliveries in 11 out of those 16 years and the processor in King Cove accepting deliveries in 14 of those 16 years. All trawl-caught deliveries of BSAI Pacific cod accepted by either plant during this period were from the Bering Sea. In general, the value of these deliveries was modest compared to other deliveries accepted at these plants over that time span, as both plants are largely focused on GOA fisheries rather than BSAI fisheries, although there are some distinct differences between the plants. The Sand Point plant has previously been characterized as more of a whitefish-oriented plant and the King Cove plant as more of a salmon- and shellfish-oriented plant, but both plants have become more diversified, multi-species operations over time.

The plant in Sand Point is owned and operated by the same company that owns and operates plants in two other communities in the AEB, Akutan and False Pass, as well as plants in St. Paul and elsewhere in Alaska. Trawl-caught deliveries of BSAI Pacific cod made to the Sand Point plant were characterized by management as occurring in relatively small amounts and typically only when their Akutan plant, which is larger and closer to the Bering Sea fishing grounds, was otherwise at maximum capacity during peak race-for-fish conditions. This situation, exacerbated by the particularly short seasons in the last two years of the 2004-2019 period, is not anticipated by management to occur if the fishery is managed under a LAPP program. The King Cove plant, which changed ownership in late 2020, is owned and operated by a company that also owns and operates a fishing support facility in Sand Point (which includes a parts stock room and a bookkeeping facility), a salmon processing plant in the unincorporated AEB community of Port Moller, and other fishing support facilities and processing plants elsewhere in Alaska.

Sand Point and King Cove were both communities of ownership address for BSAI Pacific cod pot <60' CVs both early and late in the 2004-2019 period. Sand Point was the ownership address of two unique vessels, one of which was active in that fishery in each of three years: 2009, 2018, and 2019. King Cove was the ownership address of five unique vessels, one of which was active in that fishery in 2005, two in 2004 and 2007, and three each in 2018 and 2019. Shore-based processors in both Sand Point and King Cove commonly accepted deliveries of BSAI Pacific cod from vessels in the pot <60' sector over the 2004-2019 period, although these were modest compared to the deliveries to shore-based processors in both communities from GOA fisheries (and compared to pot-caught BSAI Pacific cod deliveries from the <60' sector to shore-based processors in the BSAI region).

Sand Point and King Cove, with 2010 census populations of 976 and 938 persons respectively, are similarly sized and situated communities, with both having relatively large and robust multi-species local fishing fleets for their size. While the engagement in and dependency on the BSAI Pacific cod trawl CV, pot <60' CV, and/or shore-based processing sectors is modest compared to their engagement in and dependency on other fisheries in these communities, the diversification of engagement and dependency of the local fleet and processing sectors represented by these activities is valued in the communities. Local residents, businesses, and governmental entities are acutely aware of the long-term adaptive importance of employment and income plurality strategies at the individual entity and community level in communities and a region where employment and income opportunities (and the natural resources and/or outside funding mechanisms upon which they are based) are subject to both short- and long-term fluctuations in availability and abundance.

Other Alaska Communities

Other Alaska communities engaged through direct participation in the non-CDQ BSAI Pacific cod CV trawl fishery

False Pass, among other Alaska communities in terms of engagement in the BSAI Pacific cod fishery stands out as being: the community of ownership address for an LLP license used in the BSAI Pacific cod trawl CV sector in each of the five years 2004-2008; the community of operation of a shore-based

processor that accepted BSAI Pacific cod deliveries from the <60' pot CV sector in 2019;⁷⁸ and the location of substantial recent shore-based processing capacity increase, with the opening of one new plant in June 2019 and the recent expansion of an existing plant following a change in ownership structure, with both firms having expressed interest in expanding their operations into Bering Sea whitefish.⁷⁹ APICDA Joint Ventures has retained a 25 percent ownership interest in one of the two shore-based processors in the community (False Pass Seafoods, formerly Bering Pacific Seafoods) with Trident Seafoods Corporation, the managing partner, holding 75 percent ownership interest.⁸⁰

Atka, while not directly engaged in the BSAI Pacific cod trawl fishery over the years 2004-2019, stands out as a community that would potentially benefit were Element 6, AI Processor Provisions, to be included in an ultimately selected PA. Atka has experienced the closure of Atka Pride Seafoods, the local processing plant that was a 50/50 joint venture between APICDA and the Atka Fishermen's Association. It was not open in 2018 or 2019 due to a combination of factors including lowered halibut quotas, competition with the processing operation in Adak, and other factors not directly related to fishing conditions, according to APICA leadership.

Both False Pass and Atka are small, predominantly Alaska Native communities, are ANCSA villages, have federally recognized tribes, and are CDQ communities and members of APICDA. Both False Pass and Atka are facing the demographic challenge of retaining a large enough number of families with children to qualify for state funding of a local school. In the 2020/2021 both communities had the minimum number of students to reach the threshold.⁸¹

Homer also stands out as a community of ownership address location of one LLP used in the Pacific cod trawl CV sector in seven out of the last nine years covered by the data used for this analysis (2011-2019). It was also the community of ownership address of an annual average 2004-2019 of 1.9 and 0.6 BSAI Pacific cod <60' pot and HAL vessels, respectively, which represent the highest levels of engagement in those sectors among Alaska communities outside of Unalaska/Dutch Harbor and Kodiak in both instances.

Other Alaska communities engaged through CDQ entity participation in the non-CDQ BSAI Pacific cod CV trawl fishery

As noted above, the BBEDC, CBSFA, CVRF, NSEDC, YDFDA CDQ groups currently have a variety of ownership ties to BSAI trawl catcher vessels that may be impacted under different potential combinations of elements and options within the range of alternatives being considered, as did APICDA during some previous years in the 2004-2019 period. These include BSAI Pacific cod trawl CVs that directly participate in the non-CDQ directed cod fishery and BSAI trawl CVs that do not participate in the non-CDQ directed cod fishery but that lease out their AFA Pacific cod sideboard allocations, which provides

⁷⁸ As noted in Table 2-76, False Pass was also the community of ownership address of one BSAI Pacific cod < 60' pot CV in 2020 (but did not appear in the data as the ownership community of any relevant vessels 2004-2019).

⁷⁹ As noted in Section 2.8.9.1.2 and shown in Table 2-70, in addition to the < 60' pot CV deliveries mentioned immediately above, some trawl-caught BSAI Pacific cod was delivered to one of the False Pass shore-based processors in 2020 (i.e., outside of the historical qualifying year date ranges included in any of the proposed action alternatives and options). This same plant accepted BSAI Pacific cod < 60' pot CV deliveries in 2020. According to the involved firm, further planned processing of Bering Sea Pacific cod in False Pass in 2020 and 2021 was disrupted by COVID-19 pandemic conditions, which resulted in deliveries otherwise intended for the False Pass plant being tendered to processors in other communities. Under its current ownership structure, the other processing plant in False Pass has to date been focused exclusively on salmon processing and was closed all of 2020 due to COVID-19 pandemic conditions, with operations restarting in May 2021.

⁸⁰ APICDA Joint Ventures has also retained a 25 percent ownership interest in False Pass Fuel Services with Trident Seafoods Corporation holding the remaining 75 percent ownership interest (<https://www.apicda.com/partners/>).

⁸¹ Not obtaining state funding may not mean the immediate closure of a local school, as local school districts can choose to fully fund schools if they are able to do so. For example, the False Pass school during the 2019-2020 school year had only six Kindergarten-Grade 12 students and seven pre-kindergarten through Grade 12 students but remained open. The experience of school districts in the region, however, would suggest that this is at best a temporary measure and one that is not sustainable over the longer term.

the CDQ ownership entities with a revenue stream used to fund an array of CDQ programs. There are a total of 65 Alaska communities represented in the CDQ program, all of which qualified as ANCSA villages and are the home of one or more federally recognized Alaska Native tribal entities.

2.8.9.2.2. Pacific Northwest Communities

The Seattle MSA, with a population of over 3.4 million persons in 2010, is the community most substantially engaged in many of the important North Pacific fisheries in general and the BSAI Pacific cod trawl CV fishery specifically (as measured by absolute participation numbers of vessels and crew, as well as volume and value of landings from those vessels). Conversely, this area is among the least substantially dependent of the engaged communities on those fisheries, based on the fishing employment and earnings numbers and the overall economic value of those fisheries relative to the size of the overall Seattle metropolitan area labor pool and the scale, diversity, and resilience of its economy.

While community level dependence on the BSAI Pacific cod trawl fishery sectors relevant to this analysis is not a salient issue for the Seattle MSA, the scale of Seattle MSA engagement in the fishery is profound, as is the importance to some individual operations. In the BSAI Pacific cod trawl CV sector, for the years 2004-2019, on an average annual basis, Seattle MSA ownership address vessels accounted for approximately 70 percent of all vessels and approximately 70 percent of all ex-vessel gross revenues. For Newport, local ownership address vessels accounted for approximately 14 percent of all vessels and approximately 20 percent of all ex-vessel gross revenues over this same period.

As BSAI Pacific cod CV ownership in Alaska was consolidating toward Kodiak over the years 2004-2019, ownership outside of Alaska was consolidating toward the Seattle MSA in those same years. While ownership remains concentrated in Newport as well as in the Seattle MSA, declines in ownership were seen in all communities or aggregates of communities outside of Alaska except the Seattle MSA over the 2004-2019 period, including Newport. The pattern of concentration of engagement in the Pacific Northwest readily apparent in the BSAI Pacific cod CV sector is not seen in the BSAI Pacific cod HAL and pot <60' CV sector.

While not the location of shore-based processing of BSAI Pacific cod caught by either the trawl CV or HAL/pot <60' CV sectors, the Seattle MSA is the location of regional or company headquarters for several the processing firms engaged in the BSAI Pacific cod fishery through ownership of shore-based processing plants operating in Alaska that routinely accepted BSAI Pacific cod deliveries from trawl CVs as well as HAL and pot <60' CVs. The Seattle MSA is also the center of ownership of floating processors (for which operating location data are largely unavailable) that have processed a substantial amount of the overall catch from both CV sectors. As noted in Section 2.8.7.1, over the period 2004 through June 2020, floating processors as a group had largest number of deliveries annually of BSAI Pacific cod by the trawl CV sector, more than the shore-based processing plant or plants operating in any single Alaska community. Additionally, the Seattle MSA is the ownership address for both C/Ps that are qualified to act as motherships under Amendment 120 and regularly take CV trawl-caught deliveries of BSAI Pacific cod. As also noted in Section 2.8.7.1, over the period 2004 through June 2020, the two C/Ps acting as motherships together had more deliveries annually of BSAI Pacific cod by the trawl CV sector than were taken by the shore-based plant or plants operating in any single community in Alaska, with one exception.

Further, the Seattle MSA has extensive fishery support services available, as does the Newport/Lincoln County, Oregon area to a lesser degree, including some types or scale of services unavailable anywhere in Alaska. The Seattle MSA is an important supplier of logistical services to the fleet, including corporate headquarters support, shipyard services, other repairs and maintenance, and supplies, as well as other services support, including the provision of financial, legal, and other services; marketing; and product shipment and storage (NOAA 2014). From an outside perspective, the Seattle fleet(s) and support operations might be considered components of interest-based rather than place-based communities; from the Seattle perspective, however, Seattle has been and remains a place-based North Pacific fishing community (NOAA 2014).

2.9. Elements and Options

The following elements and options were adopted by the Council in June 2021. The Council's PA is shown in **bold**.

2.9.1. Element 1 – Cooperative Style Systems

This element defines the cooperative style for the proposed PCTC Program. The element would allow more than two cooperatives to form. Cooperative formation must be in association with a legally permitted processor. The language for Element 1 considered by the Council is provided below, with

The Council's preferred alternative is shown in **bold print**.

Element 1. Cooperative Style System

Voluntary harvester cooperatives.

Holders of qualified trawl CV LLP licenses under Element 2 must join a cooperative annually in association with an eligible licensed processor (FFP or FPP) to harvest trawl CV allocations of Pacific cod. Harvesters may change cooperatives and cooperative associations may change annually without penalty.

No limitation on the number of LLP license holders or eligible catch history needed to form a cooperative.

No limitation on the number of cooperatives that may form.

Inter-cooperative formation is allowed.

Option: A minimum of three LLP licenses are needed to form a cooperative.

2.9.1.1. Voluntary harvester cooperatives with processor association

The element would require cooperative formation in association with a legally permitted processor for CVs to harvest a cooperative's annual BSAI Pacific cod allocation derived from eligible LLP licenses. Holders of an eligible LLP license under this option could not elect to fish their LLP license's QS in the limited access fishery. Holders of eligible LLP licenses must join a cooperative to access the CQ derived from the eligible LLP license. The Council has identified two options for multiple cooperatives. Under one option, there is no limitation on the number of eligible LLP licenses or percentage of catch history necessary to form a cooperative, while the second option would require a minimum of three eligible LLP licenses to form a cooperative. Harvesters would have full discretion to choose a cooperative initially⁸² and may freely move among cooperatives annually thereafter. Holders of LLP licenses that are assigned QS may form a cooperative and are free to associate with any licensed processor without forfeiture or penalty. A licensed processor includes shoreside processors, stationary floating processors, motherships, and C/Ps⁸³. Shoreside processors and stationary floating processors⁸⁴ require a Federal Processor Permit (FPP), while motherships and C/Ps require a Federal Fishing Permit (FFP).

As noted above, one option for cooperative formation would not require a minimum number of LLP license holders or eligible LLP licenses to form a cooperative. In other words, at its most basic level, a

⁸² There may be limitations on CVs choosing a C/P cooperative.

⁸³ C/Ps may be limited by previous Council actions in their ability to act as a mothership in the BSAI trawl CV Pacific cod fishery.

⁸⁴ Processing vessel that operates solely within Alaska State waters.

cooperative could form with just one LLP license holder with one eligible LLP license in association with a licensed processor. The other option under Element 1 would require a minimum of three eligible LLP licenses to form a cooperative. For example, under this option, a cooperative could form in association with an eligible processor with three LLP license holders each with an eligible LLP license or in another example a cooperative could form with one LLP license holder with three eligible LLP licenses. As noted in Element 2, the number of qualified LLP licenses ranges from 86 using 2014 through 2019 qualifying years to 108 using 2004 through 2019 qualifying years. Despite the large number of qualified LLP licenses and the potential for numerous cooperatives, it is likely there will be far fewer cooperatives than possible with no minimum number of LLP licenses or LLP license holders or even requiring three eligible LLP licenses given the potential ease of intra-cooperative transfers among members of the cooperative. In addition, processor associations would also likely limit the number of potential cooperatives formed. Although there is no limitation on the number of cooperatives a processor may associate with, the likely complexities associated with having to manage multiple cooperative agreements would likely result in a processor associating with only one cooperative. This would also apply to processors that receive a percentage of the available harvester quota under Element 5.4 (see section 2.9.5.3 for more details).

In June 2021, the Council considered an option of three unique LLP license holders using the 10 percent ownership rule to form a cooperative to limit cooperatives of a single person. After consideration by the Council during the June 2021 meeting, the Council removed this option from consideration due the option creating potentially difficult barriers for cooperative formation.

Under a multiple cooperative formation structure, the bargaining power changes during the cooperative formation process. In general, the fewer LLP license holders or licenses or the smaller percentage of QS necessary to form a cooperative, the easier it is to form a cooperative. This cooperative formation approach does not preclude other holders of eligible LLP licenses from joining a cooperative if they agree to the terms of the cooperative's bylaws. Lower LLP license holder thresholds for cooperative formation increases the opportunity of sector participants (particularly those with less common views of circumstances) to join a cooperative. The holders of the most divergent views can review the terms and conditions of each cooperative agreement to determine which best meets their needs. Holders of eligible LLP licenses that do not like the conditions for membership in cooperatives that have formed could form their own cooperative or attempt to find other eligible LLP license holders willing to form a separate cooperative. Changes in TAC such that the AI exceeds the BS could also shift bargaining power between those LLP license holders with a BS only area endorsement and those that also have an AI endorsement.

Any cooperatives that form would need to reach an agreement with a processor. Because processors may not wish to be associated with multiple cooperatives if it results in an increased reporting burden and increased quota transfer costs, processors may help to limit the number of cooperatives that form. Alternatively, an eligible LLP license holder with some benefit to offer a cooperative could use competing cooperatives to negotiate more favorable terms and conditions than could be negotiated if their options to join a cooperative were more limited.

The terms⁸⁵ of the cooperative agreement, and consequently, the cooperative and processor association are subject to negotiation between the cooperative members (qualified LLP license holders) and the processor. Given the flexibility of the harvesters to move among cooperatives and cooperatives to change provisions (such as delivery requirements or terms) the terms of the cooperative will be fully voluntary, and harvesters could receive compensation for concessions. Business relationships are likely to be important factors that affect cooperative and processor association choices.

Given the potential number of cooperatives that could form under the PCTC Program, the complexity of monitoring requirements by NOAA Fisheries would likely increase under this option. Sideboards, allocation of harvest shares to processors, AI processor provisions, transferability, and gear conversion

⁸⁵ Within the limits that the cooperatives are intended to only conduct and coordinate harvest activities of the members (Element 9).

options currently under consideration in the PCTC program would also add to management and monitoring burdens. It is possible that staffing needs would increase, or staff responsibilities would expand for NOAA Fisheries staff, since they are responsible for monitoring catch on a cooperative level, performing transfers of CQ between cooperatives, and notifying enforcement if quotas have been exceeded. NMFS is expected to realize increased implementation costs at the onset of the program, including rulemaking, database coding, and other implementation components.

Element 1 includes language that would authorize the use of inter-cooperative formation (a civil contract that defines how cooperatives will work together). A similar inter-cooperative agreement is currently utilized by the BS pollock cooperatives under the AFA, which shifts a large portion of the administrative and monitoring obligations to the industry with agency oversight. A similar system could be developed for the PCTC program to reduce the agency management and monitoring burden. Therefore, shifting a portion of the management and monitoring burden to the cooperatives, has the potential for a multiple cooperative structure to increase certain management and enforcement costs while reducing others. Incremental Agency costs for management, enforcement, and data collection would be subject to cost recovery as described in Element 13.

2.9.2. Element 2 – Allocation to LLP Licenses

Element 2 provides direction on LLP license eligibility and how the initial allocation of QS would be assigned. In addition, Element 2 includes the following options: 1) Establish a minimum threshold percentage of catch history by LLP holder to receive QS, 2) allocation of QS when LLP licenses are stacked on a trawl CV, 3) allocation of and use of QS between the AI and BS, 4) allocation of QS to LLP license for only A and B seasons, 5) management of species not allocated to the cooperatives, 6) remove BSAI Pacific cod sideboard limits.

All of the allocations described in this section are made without accounting for an allocation of QS to processors, based on their processing activity during the qualifying period. Allocations to processors are described in Section 2.8.5.

The Council's PA is shown in **bold** below.

Catch history to determine allocations under this management action will not be considered beyond December 31, 2019.

2.1. Eligibility – Any LLP license assigned to a vessel that made qualifying catch history (legal landings) of targeted trawl CV BSAI Pacific cod during the qualifying years (or an LLP license as of December 31, 2019, assigned to an American Fisheries Act (AFA) trawl CV that had BSAI Pacific cod catch in 1997)⁸⁶ and any transferable Aleutian Islands (AI) endorsement is eligible to receive QS.

Option: Establish a minimum threshold percentage range of 0.25%-1% by LLP holder for eligibility to receive QS. Partial ownership of LLP licenses counts toward the minimum threshold using the individual and collective rule. Does not apply to those 8 LLP licenses with a transferable AI endorsement.

2.2. Harvester Allocations – Eligible LLP licenses must be assigned to a cooperative for the cooperative to receive annual Pacific cod CQ. The initial allocation of QS will be made to eligible LLP licenses or transferable AI endorsements, with each LLP license's or transferable AI endorsement's QS based on the Pacific cod qualifying catch history (legal landings) of targeted

⁸⁶The latter criteria (LLP assigned to an AFA trawl CV that had BSAI Pacific cod catch in 1997) is only applicable if one of the blend options is selected under Option 2.2.4.

BSAI Pacific cod authorized by that LLP license or a transferable AI endorsement⁸⁷ during the following qualifying years:

Option 2.2.1: 2014 - 2019

Option 2.2.2: 2009 – 2019

Option 2.2.3: 2004 –2019

Option 2.2.4: Allocations based on a blend of catch history and AFA sideboard history⁸⁸

Suboptions to credit catch history/sideboard at:

Suboption 2.2.1: 50%/50%

Suboption 2.2.2: 80%/20%

Suboption 2.2.3: 20%/80%

Suboptions (applicable to Options 2.2.1 – 2.2.4):

Suboption 2.2.1. Drop 1 Year

Suboption 2.2.2. Drop 2 Years

2.3. For the initial allocation of QS, qualifying catch history is attached to the LLP license at the time of harvest. If multiple LLP licenses authorized catch by a vessel, in the absence of an agreement provided by the LLP license holder at the time of application, qualifying catch history will be:

Option 2.3.1: divided equally between those LLP licenses.

Option 2.3.2: assigned to an LLP license by the owner of the vessel that made the catch.

2.4. Annual CQ will be issued to each cooperative by NMFS based on the aggregate QS attached to LLP licenses that are assigned to the cooperative. NMFS will issue CQ by season and rely on the cooperatives to ensure the seasonal limits are not exceeded. Unused A season CQ may be rolled over to the B season. QS will not be designated for harvest in a management area (i.e., BS or AI) but may be harvested from either area.

2.5. Option to allocate A and B season BSAI trawl CV Pacific cod only:

A and B season trawl CV Pacific cod sector allocations (after deduction of the ICAs) will be allocated to cooperatives as CQ. Annual CQ attributable to each LLP license will be that LLP license's proportional share of the total QS.

The C season trawl CV Pacific cod allocation will remain 15 percent and remain a limited access trawl CV fishery and will be available to any trawl CV with an eligible groundfish LLP license with an applicable area endorsement. The C season limited access fishery will be managed as currently by NMFS, including management of incidental catches of Pacific cod in other directed fisheries. C season trawl CV sector apportionments (including A and B season ICAs and CQ remaining after June 10) that NMFS projects to go unused are subject to reallocation to other sectors under current reallocation rules.

2.6. All groundfish species not allocated to cooperatives will be managed by maximum retainable amounts (MRAs), as under current management.

2.7 The BSAI Pacific cod sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is removed for the A and B season upon implementation of this program. The BSAI Pacific cod sideboard limit

⁸⁷ Landings of targeted AI Pacific cod in the parallel fishery prior to receiving a transferable AI endorsement (2004 through September 13, 2009) in addition to legal landings of targeted Pacific cod in the parallel and federal fishery after receiving a transferable AI endorsement would qualify under the Council's criteria for catch history.

⁸⁸ Using staff approach of blending 1997 sideboard history with qualifying year option catch history attached to the eligible LLP license at the time of implementation of the trawl CV LAPP.

for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is maintained for the C season upon implementation of this program.

The BSAI halibut PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 40 is removed upon implementation of this program.

The BSAI crab PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 41 is maintained upon implementation of this program.

During the December 2020 meeting, the Council included language in the motion that clarifies that catch history used to determine allocations under the PCTC Program will not be considered beyond December 31, 2019. This clarification stemmed from the Council's October 2019 motion which did not include or reference the control date approved during the February 2019 meeting. During its February 2019 meeting the Council approved a control date of February 7, 2019, as part of its motion to prepare the trawl CV cooperative scoping paper (see Section 2.3). The absence of a control date in the October 2019 motion resulted in a brief discussion during the December 2020 Council meeting concerning Council intent on this issue. In the end, the Council opted to stipulate in its motion that catch history beyond December 31, 2019, will not be used to determine allocations under this program. This approach was noted as clearer and more efficient than including the previous control date or a new control date.

2.9.2.1. Element 2.1

Holders of the eligible LLP licenses or any transferable AI endorsement (see Section 2.9.2.2.1 for further information concerning transferable AI endorsements) that were utilized to legally target BSAI trawl CV Pacific cod during the qualification period would be allocated QS for use in a cooperative. By providing each eligible LLP license holder and transferable AI endorsements harvest QS for use in a cooperative, the race for fish for the trawl CV sector would be reduced significantly thus improving safety and efficiency. Element 2 provides the direction and options for calculating BSAI trawl CV Pacific cod QS allocations for each eligible LLP license and transferable AI endorsement. Specifically, Element 2.1 addresses LLP license eligibility.

An eligible LLP license is any LLP license assigned to a vessel that made legal landings of targeted BSAI trawl CV Pacific cod during the appropriate seasons of the qualifying years. An eligible transferable AI endorsement is any of the eight AI transferable endorsements for use on a non-AFA trawl CV less than 60' MLOA LLP license. Additionally, in the case of the selecting one of the blend options (Option 2.2.4), an LLP license as of December 31, 2019, that is assigned to an AFA trawl CV that had BSAI Pacific cod catch in 1997 is also eligible to receive QS. Targeted Pacific cod catch history during each of the qualifying years (Element 2.2, Options 2.2.1-2.2.4) would be assigned to the LLP license or AI transferable endorsement as QS. Trawl vessels that hold a valid LLP license with a trawl gear endorsement for the BS and/or AI, but the LLP license does not qualify to receive harvest QS and the LLP license does not have an AI transferable endorsement with QS could still harvest Pacific cod as incidental catch in other fisheries, but they would not be allowed to harvest Pacific cod in the BSAI trawl CV Pacific cod directed fishery under a cooperative during seasons that are allocated under the program (see Section 2.9.9).

During their December 2020 meeting, the Council included a new option for consideration that would apply a minimum threshold percentage range of 0.25 percent to 1 percent by LLP license holder for eligibility to receive QS. This option would not apply to the eight non-AFA trawl CV LLP licenses less than 60' MLOA that have transferable AI endorsements.

Under this option, a person who in aggregate across all LLP licenses had less than a Council selected percentage between 0.25 percent and one percent of qualifying harvest at the time of initial allocation, the LLP licenses held by that person would not qualify for an initial allocation of QS. For example, at a 0.25

percent threshold, an LLP license holder with one LLP license that has less than 0.25 percent qualifying catch history would not be eligible for QS. In another example using the same 0.25 percent threshold, an LLP license holder with three LLP licenses that in aggregate totaled 0.50 percent of the qualifying catch history would qualify for QS for each of the LLP licenses even though one LLP license's QS could be less than the 0.25 percent threshold.

The examples provided above are relatively straight forward when only considering 100 percent ownership of eligible LLP licenses. In June 2021, the Council clarified that partial ownership of eligible LLP licenses counts in meeting the minimum threshold using the "individual and collective rule." The "individual and collective rule" defines how much an LLP license holder may apply towards meeting the minimum threshold catch history. For example, using the 0.25 percent threshold and applying the "individual and collective rule" with a 10 percent ownership in an LLP license, a person with 100 percent ownership in an LLP license with 0.20 percent qualifying catch history and a 10 percent ownership of another LLP license with 0.50 percent qualifying catch would result in an aggregate of 0.25 percent ownership for both LLP licenses, which is sufficient for eligibility for QS for the holder's 100 percent owned LLP license. Applying partial ownership to meet the minimum threshold would likely add a significant level of complexity to the eligibility process. In another example, utilizing the 0.25 threshold once more, a person holding 100 percent of an LLP license with 0.20 percent qualifying catch history also holds a 50 percent ownership in another LLP license with 0.15 percent qualifying catch history results in aggregate 0.2750 qualifying catch history. This person would qualify for an initial allocation of QS because the total holdings are above the minimum threshold. It is assumed that the partially owned LLP license with 0.15 qualifying catch history would also qualify for QS based on the aggregate qualifying catch history by the license holder.

Table 2-85 provides the number of LLP licenses, annual average qualifying landings (mt), and the remaining LLP license's allocation as a percentage of the adjusted average annual qualifying landings at different minimum threshold percentages between 0.25 percent and 1 percent by LLP license holder and by LLP license for the three qualifying year options with C season included. Since ownership percentage information for qualified LLP licenses is not always available⁸⁹, the LLP license holder addresses were used as the best available proxy for affiliation, with the caveat that not all LLP licenses are filed using the same address. In other words, some LLP licenses would be centrally managed by one company and other LLP licenses would be managed separately, which means that LLP license owners may be undercounted or overcounted for the number of LLP licenses that do not meet the minimum threshold percentage.

Looking first at applying the minimum threshold percentage based on the aggregate LLP licenses held by a holder, for the 2014-2019 qualifying years and no drop year results in eight LLP licenses having less than 0.25 percent total qualifying landings and therefore would not meet this threshold percentage. BSAI Pacific cod average annual landings for these eight LLP licenses is 300 mt. Including drop 1 year or drop 2 years options does not change the number of LLP licenses having less than 0.25 percent total qualifying landings but the landing of BSAI Pacific cod by these LLP licenses increases slightly. Expanding the qualifying years increases the number of LLP licenses that have less than 0.25 percent of total qualifying landings. For example, utilizing the 2004-2019 qualifying years with no drop year option results in 23 LLP licenses having less than 0.25 percent of the total qualifying landings. The effect of removing these LLP licenses from the pool of qualified LLP licenses results in slight increase in the percent of qualified catch history for all the remaining qualified LLP licenses. As stated earlier, the eight LLP licenses qualified landings is 300 mt for the 2014-2019 qualifying years. As a result of these eight LLP licenses not qualifying, the total average annual qualifying landings is reduced 300 mt. With a slightly smaller total qualifying landings and fewer qualified LLP licenses, the remaining 78 qualified LLP licenses would increase their percentage of the total QS pool by approximately one percent.

⁸⁹ LLP license ownership data are available if the LLP license has been transferred or if it is an Amendment 80 LLP license, but that does not cover all qualified LLP licenses under the proposed program.

Increasing the minimum threshold to 0.25 to 0.50 percent, the number of additional LLP licenses that would not qualify for an allocation is three for the 2014-2019 qualifying years and eight for the 2004-2019 qualifying years. The average annual qualified landings of BSAI Pacific cod for these LLP licenses ranges from 393 mt to 845 mt. Increases in the percentage of QS holdings for the remaining qualified LLP licenses when removing those LLP licenses that do not meet the minimum percent threshold is two percent to five percent. At a threshold of 0.50 to 0.75 percent, results in eight LLP licenses using 2014-2019 with no drop years and six LLP licenses using 2004-2019 with no drop years. The percentage of total QS holdings would increase for the remaining LLP licenses by seven percent to eight percent. The number of additional LLP licenses under this threshold is reduced slightly under a drop 1 year or 2 years option. At a threshold of 0.75 to 1 percent, the number of additional LLP licenses that would not qualify is four under both 2014-2019 and 2004-2019 qualifying year options. The percentage of total QS for the remaining LLP licenses would increase by 11 percent to 12 percent.

Applying these same threshold percentages based solely on the LLP license and not the aggregate LLP licenses held by the holder results in significantly higher numbers of LLP licenses that fall at or below the threshold percentages. At less than 0.25 percent threshold, the number of LLP licenses is 16 for the 2014-2019 qualifying years and 40 LLP licenses for the 2004-2019 qualifying years. The average annual landings of BSAI Pacific cod for these LLP licenses is 513 mt for the 2014-2019 with no drop year and 1,083 mt for the 2004-2019 with no drop year. The percentage of total QS for the remaining qualified LLP licenses range from a two percent to three percent increase. In contrast, at a threshold of 0.75 to 1 percent, the total number of LLP licenses that would not qualify ranged from 43 under the 2014-2019 qualifying year option to 41 LLP licenses under the 2004-2019 qualifying year option. The percentage of total QS for the remaining LLP licenses would increase by 22 percent using the 2014-2019 qualifying year option and 27 percent for the 2004-2019 qualifying year option.

Utilizing the results from Table 2-85 with allocation distribution tables Table 2-86 Table 2-87 and Table 2-88, the LLP licenses most at risk of not qualifying would be those in the lowest quintile grouping. Depending how the minimum threshold option is applied and the threshold percentage selected, the impacts could range from a relatively small portion of the lowest quintile group not qualifying for the PCTC Program to the two lowest quintile groups not qualifying for the PCTC Program. In addition, at the lowest threshold percent (0.25 percent), the remaining qualified LLP licenses would benefit by holding one to two percent more of the total QS, while at the highest threshold percentage (1 percent), the remaining qualified LLP licenses would hold 11 to 12 percent more of the total QS allocated.

Table 2-85 Number of LLP licenses, average annual qualifying landings (mt), remaining LLP's percent of adjusted aggregate annual average qualifying landings using different minimum threshold percentages by LLP license holder and by LLP license for the three qualifying year options with C season included

By LLP license holder									
Minimum thresholds percentage	Option 1 - 2014-2019			Option 2 - 2009-2019			Option 3 - 2004-2019		
	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings
No drop	86	34,523		93	33,600		108	32,434	
<0.25%	8	300	101%	14	471	101%	23	625	102%
0.25%-0.50%	3	393	102%	7	756	104%	8	845	105%
0.50%-0.75%	8	1,527	107%	5	1,017	107%	6	1,004	108%
0.75%-1%	4	1,269	111%	3	830	110%	4	1,128	112%
>1%	63	31,034		64	30,527		67	28,833	
Drop 1 year	86	39,523		93	36,437		108	34,395	
<0.25%	8	359	101%	13	427	101%	23	667	102%
0.25%-0.50%	3	472	102%	8	922	104%	8	901	105%
0.50%-0.75%	6	1,219	105%	5	1,118	107%	5	812	107%
0.75%-1%	6	2,118	112%	3	913	110%	5	1,462	113%
>1%	63	35,355		64	33,056		67	30,554	
Drop 2 years	86	45,180		93	39,344		108	35,705	
<0.25%	8	449	101%	13	475	101%	23	714	102%
0.25%-0.50%	3	589	102%	7	824	103%	8	965	105%
0.50%-0.75%	5	1,177	105%	5	1,146	107%	5	870	108%
0.75%-1%	4	1,513	109%	4	1,312	111%	5	1,566	113%
>1%	66	41,451		64	35,588		67	31,589	
By LLP license									
Minimum thresholds percentage	Option 1 - 2014-2019			Option 2 - 2009-2019			Option 3 - 2004-2019		
	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings	LLP license count	Aggregate annual average qualifying landings (mt)	Remaining LLPs allocation as a % of adjusted aggregate annual average qualifying landings
No drop	86	34,523		93	33,600		108	32,434	
<0.25%	16	513	102%	25	765	102%	40	1,083	103%
0.25%-0.50%	9	1,177	105%	10	1,216	106%	10	1,162	107%
0.50%-0.75%	11	2,322	113%	10	2,120	114%	10	1,951	115%
0.75%-1%	7	2,230	122%	10	2,919	126%	10	2,773	127%
>1%	43	28,280		38	26,580		38	25,465	
Drop 1 year	86	39,523		93	36,437		108	34,395	
<0.25%	15	515	101%	24	750	102%	40	1,155	103%
0.25%-0.50%	10	1,513	105%	11	1,429	106%	10	1,239	107%
0.50%-0.75%	9	2,165	112%	10	2,332	114%	9	1,823	114%
0.75%-1%	8	2,847	122%	10	3,211	127%	11	3,217	128%
>1%	44	32,483		38	28,715		38	26,962	
Drop 2 years	86	45,180		93	39,344		108	35,705	
<0.25%	15	644	101%	24	834	102%	40	1,238	104%
0.25%-0.50%	8	1,408	105%	10	1,386	106%	9	1,145	107%
0.50%-0.75%	9	2,458	108%	10	2,494	111%	10	2,135	112%
0.75%-1%	7	2,699	119%	9	3,063	125%	11	3,421	129%
>1%	47	37,972		40	31,566		38	27,766	

Source: AKFIN, February 2012

Table originates from Excel file BSAI_PCOD_LAPP_Threshold(2-23-21)

2.9.2.2. Element 2.2

Element 2.2 provides different harvest allocation options based on three different year combinations, three different drop year options, and an allocation based on a blend of 1997 AFA sideboard history and the three different year combinations only for those AFA vessels that are restricted by BSAI Pacific cod sideboard limits. The initial allocation of QS will be made to eligible LLP licenses or transferable AI endorsements based on the targeted Pacific cod legal landings authorized by the eligible LLP license or transferable AI endorsement. The initial allocation would also include LLP licenses that receive an allocation because of the transfers of AFA sideboard limits under the “blend” option. For each eligible LLP license or transferable AI endorsement to receive fish the CQ that is derived from the LLP licenses QQS, the eligible LLP license or AI transferable endorsement must be assigned to a cooperative. The

information in this section provides greater detail on QS allocations under the non-blended options and the blended options. In addition, there is allocation information for eight AI transferable endorsements created under Amendment 92 to the BSAI Groundfish FMP and Amendment 82 to the GOA Groundfish FMP.

Options 2.2.1 through 2.2.3 – Non-blended allocation

Table 2-86, Table 2-87, and Table 2-88 show the number of qualified LLP licenses under each of the three options (Options 2.2.1-2.2.3) with drop year suboptions and with and without the C season catch history included. The tables also show the distribution of annual average qualified catch history by quintile, aggregated annual average qualifying landings, aggregated annual average qualifying landings as a percent of the total aggregated annual average qualifying landings, average annual allocation percent per qualifying LLP license, and the average 2019 allocation per qualified LLP license by quintile. These tables do not include qualified LLP licenses with AI endorsements for use on non-AFA trawl CV less than 60' MLOA (see Section 2.9.2.2.1). In addition, results in this section do not include potential reductions in percentage of total QS from allocating a percent of QS to eligible processors which would be transferred to CV owners/operators in the cooperative to harvest (Elements 5 and 6). See Section 2.9.5 and Section 2.9.6 for a discussion of allocations to eligible processors.

Overall, more qualifying years yields a greater number of LLP licenses that would be allocated QS. Specifically, of the total 115 trawl CV endorsed LLP licenses noted in Table 2-13, Option 2.2.1 (2014-2019) with C season results in 86 LLP licenses qualifying and without C season results in 85 LLP licenses qualifying, Option 2.2.2 (2009-2019) with C season qualifies 93 LLP licenses and without C season qualifies 92 LLP licenses, and Option 2.2.3 (2004-2019) qualifies 108 LLP licenses with C season and without C season. Most of this increase in qualified LLP licenses as the qualifying years increase occurs in the 0-250 mt annual average qualified catch grouping reported in the tables. For example, as noted in Table 2-86, the 2014-2019 option with no drop years and with C season catch included results in 34 qualified LLP licenses in the 0-250 mt quintile, while 2004-2019 option with no drop years and with C season catch included shows 61 qualified LLP licenses in the 0-250 mt quintile.

When comparing the distribution of qualified LLP licenses by quintile there are a greater number of qualified LLP licenses at the lowest quintile group than at the highest quintile group under every qualifying year option/drop year suboption with and without C season included. For example, Option 2.2.1 with the no drop year suboption and with the C season included, 34 LLP licenses qualify with less than 250 mt of annual qualifying landings each, which, when aggregated, amounts to an annual average of 3,502 mt of average annual qualifying landings. On average, each qualified LLP license in this quintile group would be allocated 0.30 percent of the BSAI trawl CV Pacific cod QS. Applying that average allocation to the 2019 Pacific cod trawl CV sector allocation (35,660 mt) for example would have resulted in each of the 33 qualified LLP licenses being allocated on average 106 mt of BSAI Pacific cod in 2019. In contrast, six LLP licenses qualify with greater than 1,000 mt of annual average qualifying landings. In aggregated, the annual qualified landings of these six qualified LLP licenses totaled average annual catch of 6,432 mt. On average, each of the six qualified LLP licenses would be allocated annually 3.11 percent of the annual BSAI trawl CV Pacific cod allocation. Applying the average sector allocation for these six qualified LLP licenses to the 2019 Pacific cod trawl CV sector allocation (35,660 mt), each of these six LLP licenses would be allocated on average 1,107 mt of BSAI Pacific cod.⁹⁰

⁹⁰ Note that this calculation does not account for reductions to the ITAC for ICAs or if the C season is not allocated to the PCTC program.

Table 2-86 Option 2.2.1 - total number of qualified LLP licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2014-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.1 (with C-season)	2014-2019 (no drop)	86	0-250	34	3,502	10%	0.30%	106
			250-500	26	10,089	29%	1.12%	401
			500-750	13	8,246	24%	1.84%	655
			750-1,000	7	6,254	18%	2.59%	923
			>1,000	6	6,432	19%	3.11%	1,107
	2014-2019 (drop 1)		0-250	31	3,372	9%	0.28%	98
			250-500	19	7,228	18%	0.96%	343
			500-750	19	11,340	29%	1.51%	539
			750-1,000	9	8,085	20%	2.27%	811
	2014-2019 (drop 2)		>1,000	8	9,498	24%	3.00%	1,071
			0-250	26	2,780	6%	0.24%	84
			250-500	19	7,292	16%	0.85%	303
500-750		19	11,714	26%	1.36%	487		
Option 2.2.1 (no C-season)	2014-2019 (no drop)	85	750-1,000	8	6,383	14%	1.77%	630
			>1,000	14	17,011	38%	2.69%	959
			0-250	33	3,460	10%	0.31%	94
			250-500	28	11,023	33%	1.17%	353
			500-750	12	7,740	23%	1.91%	579
	2014-2019 (drop 1)		750-1,000	8	7,219	21%	2.67%	810
			>1,000	4	4,316	13%	3.20%	969
			0-250	31	3,598	9%	0.30%	91
			250-500	18	6,941	18%	1.00%	302
	2014-2019 (drop 2)		500-750	20	11,865	31%	1.53%	465
			750-1,000	9	8,048	21%	2.31%	701
			>1,000	7	8,206	21%	3.03%	919
0-250		25	2,775	6%	0.25%	76		
2014-2019 (drop 2)	250-500	19	7,603	17%	0.90%	273		
	500-750	21	13,124	29%	1.40%	426		
	750-1,000	7	5,625	13%	1.81%	547		
	>1,000	13	15,382	35%	2.66%	806		

Source: AKFIN, December 2019

Table originates from Excel file BSAI_PCOD_LAPP_Option1(12-19-19)-1

Table 2-87 Option 2.2.2 - total number of qualified LLP licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2009-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.2 (with C-season)	2009-2019 (no drop)	93	0-250	45	4,101	12%	0.27%	97
			250-500	20	7,257	22%	1.08%	385
			500-750	13	7,808	23%	1.79%	637
			750-1000	10	8,715	26%	2.59%	925
			>1000	5	5,720	17%	3.40%	1,214
	2009-2019 (drop 1)		0-250	42	3,721	10%	0.24%	87
			250-500	18	6,169	17%	0.94%	335
			500-750	17	10,224	28%	1.65%	589
			750-1000	9	8,177	22%	2.49%	889
			>1000	7	8,146	22%	3.19%	1,139
	2009-2019 (drop 2)		0-250	39	3,349	9%	0.22%	78
			250-500	19	6,518	17%	0.87%	311
500-750		16	9,763	25%	1.55%	553		
750-1000		9	7,950	20%	2.25%	801		
>1000		10	11,765	30%	2.99%	1,066		
Option 2.2.2 (no C-season)	2009-2019 (no drop)	92	0-250	44	4,061	12%	0.28%	85
			250-500	20	7,228	22%	1.10%	333
			500-750	14	8,337	25%	1.81%	548
			750-1000	9	7,622	23%	2.57%	779
			>1000	5	5,686	17%	3.45%	1,047
	2009-2019 (drop 1)		0-250	41	3,680	10%	0.25%	76
			250-500	18	6,135	17%	0.95%	289
			500-750	18	10,805	30%	1.68%	508
			750-1000	9	8,100	23%	2.51%	762
			>1000	6	7,069	20%	3.29%	998
	2009-2019 (drop 2)		0-250	38	3,304	9%	0.22%	68
			250-500	19	6,480	17%	0.88%	267
500-750		17	10,408	27%	1.58%	480		
750-1000		9	7,843	20%	2.25%	683		
>1000		9	10,639	28%	3.06%	926		

Source: AKFIN, December 2019

Table originates from Excel file BSAI_PCOD_LAPP_Option2(12-23-19)

Table 2-88 Option 2.2.3 - total number of LLP qualified licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2004-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.3 (with C-season)	2004-2019 (no drop)	108	0-250	61	4,443	14%	0.22%	80
			250-500	22	8,002	25%	1.12%	400
			500-750	13	8,351	26%	1.98%	706
			750-1000	8	6,851	21%	2.64%	941
			>1000	4	4,790	15%	3.69%	1,317
	2004-2019 (drop 1)		0-250	59	4,217	12%	0.21%	74
			250-500	22	8,016	23%	1.06%	378
			500-750	13	8,372	24%	1.87%	668
			750-1000	10	8,782	26%	2.55%	910
	2004-2019 (drop 2)		>1000	4	5,011	15%	3.64%	1,299
			0-250	59	4,518	12%	0.21%	75
			250-500	19	6,977	19%	1.01%	360
500-750		12	7,259	20%	1.66%	593		
2004-2019 (drop 2)	750-1000	12	10,381	29%	2.38%	848		
	>1000	6	7,251	20%	3.32%	1,184		
	Option 2.2.3 (without C-season)	2004-2019 (no drop)	0-250	62	4,628	14%	0.23%	70
			250-500	22	8,103	25%	1.14%	344
			500-750	13	8,323	26%	1.97%	598
750-1000			7	5,953	18%	2.62%	795	
>1000			4	4,764	15%	3.67%	1,113	
2004-2019 (drop 1)	0-250	59	4,165	12%	0.21%	62		
	250-500	23	8,373	24%	1.06%	321		
	500-750	13	8,307	24%	1.86%	563		
	750-1000	9	7,872	23%	2.54%	771		
2004-2019 (drop 2)	>1000	4	4,983	14%	3.62%	1,098		
	0-250	59	4,462	12%	0.21%	63		
	250-500	20	7,360	20%	1.01%	307		
	500-750	12	7,237	20%	1.66%	502		
2004-2019 (drop 2)	750-1000	12	10,413	29%	2.38%	723		
	>1000	5	6,188	17%	3.40%	1,031		

Source: AKFIN, December 2019

Table originates from Excel file BSAI_PCOD_LAPP_Option3(12-23-19)

Table 2-89 provides the number of qualified licenses, vessels, and annual average qualifying landings for AFA GOA sideboard exempt, AFA GOA sideboard non-exempt, and non-AFA groupings under each of the qualifying year options. Note the number of qualified LLP licenses for each option in Table 2-86, Table 2-87, and Table 2-88 does not equal the aggregated number of vessels for each option in Table 2-89 since not all the qualified LLP licenses are currently assigned to a trawl CV.

Table 2-89 Number of qualified licenses and annual average qualifying landings by AFA GOA exempt, AFA GOA non-exempt and non-AFA trawl CVs for each of the qualifying year options

Options	Qualifying year/drop year suboptions	Total number of qualified LLP licenses	Trawl CV vessel group	Vessel count ¹	Annual average qualifying landings (mt)
Option 2.2.1 (with C-season)	2014-2019 (no drop)	86	AFA - GOA exempt sideboard	12	4,868
			AFA - GOA non-exempt sideboard	46	22,538
			Non-AFA	14	7,116
	2014-2019 (drop 1)		AFA - GOA exempt sideboard	12	5,791
			AFA - GOA non-exempt sideboard	46	25,477
			Non-AFA	14	8,255
2014-2019 (drop 2)	AFA - GOA exempt sideboard	12	6,881		
	AFA - GOA non-exempt sideboard	46	28,698		
	Non-AFA	14	9,601		
Option 2.2.1 (without C-season)	2014-2019 (no drop)	85	AFA - GOA exempt sideboard	12	4,833
			AFA - GOA non-exempt sideboard	45	22,457
			Non-AFA	14	6,468
	2014-2019 (drop 1)		AFA - GOA exempt sideboard	12	5,749
			AFA - GOA non-exempt sideboard	45	25,379
			Non-AFA	14	7,530
2014-2019 (drop 2)	AFA - GOA exempt sideboard	12	6,827		
	AFA - GOA non-exempt sideboard	45	28,576		
	Non-AFA	14	7,530		
Option 2.2.2 (with C-season)	2009-2019 (no drop)	93	AFA - GOA exempt sideboard	14	4,470
			AFA - GOA non-exempt sideboard	48	21,630
			Non-AFA	15	7,500
	2009-2019 (drop 1)		AFA - GOA exempt sideboard	14	4,917
			AFA - GOA non-exempt sideboard	48	23,368
			Non-AFA	15	8,152
2009-2019 (drop 2)	AFA - GOA exempt sideboard	14	5,416		
	AFA - GOA non-exempt sideboard	48	25,104		
	Non-AFA	15	8,825		
Option 2.2.2 (without C-season)	2009-2019 (no drop)	92	AFA - GOA exempt sideboard	14	4,439
			AFA - GOA non-exempt sideboard	47	21,572
			Non-AFA	15	6,923
	2009-2019 (drop 1)		AFA - GOA exempt sideboard	14	4,883
			AFA - GOA non-exempt sideboard	47	23,304
			Non-AFA	15	7,602
2009-2019 (drop 2)	AFA - GOA exempt sideboard	14	5,378		
	AFA - GOA non-exempt sideboard	47	25,032		
	Non-AFA	15	8,265		
Option 2.2.3 (with C-season)	2004-2019 (no drop)	108	AFA - GOA exempt sideboard	15	3,994
			AFA - GOA non-exempt sideboard	59	21,648
			Non-AFA	15	6,794
	2004-2019 (drop 1)		AFA - GOA exempt sideboard	15	4,261
			AFA - GOA non-exempt sideboard	59	22,908
			Non-AFA	15	7,229
2004-2019 (drop 2)	AFA - GOA exempt sideboard	15	4,535		
	AFA - GOA non-exempt sideboard	59	24,155		
	Non-AFA	15	7,697		
Option 2.2.3 (without C-season)	2004-2019 (no drop)	108	AFA - GOA exempt sideboard	15	3,971
			AFA - GOA non-exempt sideboard	59	21,445
			Non-AFA	15	6,355
	2004-2019 (drop 1)		AFA - GOA exempt sideboard	15	4,236
			AFA - GOA non-exempt sideboard	59	22,692
			Non-AFA	15	6,773
2004-2019 (drop 2)	AFA - GOA exempt sideboard	15	4,508		
	AFA - GOA non-exempt sideboard	59	23,924		
	Non-AFA	15	7,229		

Source: AKFIN, March 2021

Table originates from Excel file BSA_POOD_LAPP_Coop_Split_Exempt(11-9-20)

¹Vessel count does not equal LLP license count since not all LLP licenses are authorizing an trawl CV

2.9.2.2.1. Transferable and non-transferable AI endorsements created under Amendments 92/82

In December 2020, the Council included in the harvester allocation portion of Element 2 an option to allocate QS to the transferable AI endorsements for use on non-AFA trawl CV LLP licenses. It was noted in the December 2020 initial review analysis that between 65 percent and 70 percent of reported retained catch that did not include an LLP license number were made by vessels assigned an LLP license with these transferrable AI endorsements (Section 2.7.2.2). A transferable AI endorsement authorized the vessel assigned to the LLP license to legally fish in the AI with trawl gear for Pacific cod, while the permanent LLP license did not since it lacked an AI area endorsement for trawl gear⁹¹. Effective September 14, 2009, the combined Amendment 92 to the FMP for groundfish of the BSAI and Amendment 82 to the FMP for groundfish of the GOA action awarded eight transferrable AI endorsements that could be assigned to non-AFA trawl CV less than 60' MLOA LLP licenses. These eight LLP licenses met the eligibility criteria since they harvested at least 500 mt of Pacific cod in the AI parallel Pacific cod fishery during 2000 through 2006. These eight endorsements are severable from the overall LLP license and could be transferred to another non-AFA trawl CV LLP license with a MLOA designation of less than 60'. That same action also awarded four AI endorsements to non-AFA trawl CV \geq 60' MLOA LLP license since they had at least one landing in the AI parallel groundfish fishery or AI State-water Pacific cod fishery during 2000 through 2006. Unlike the severable endorsements for the under 60' LLP licenses, these AI endorsements are not severable from the overall license. Given these four endorsements are not severable from the LLP licenses, the issue of unassigned LLP licenses associated with targeted AI Pacific cod catch that was noted above does not apply to these four LLP licenses and any Pacific cod catch history would be assigned to the LLP license.

Table 2-90 provides annual AI Pacific cod target fishing activity from 2004 through 2019 for LLP licenses using AI transferable endorsements. In June 2021, the Council added language that landings of targeted AI Pacific cod in the parallel fishery prior to receiving a transferable AI endorsement (2004 through September 13, 2009) would also qualify for catch history (see Element 2.2). Table 2-91 provides the distribution for all eight transferable AI endorsements as it relates to QS under each of the three qualifying year options with C season included using parallel fishery catch prior to receiving a transferable AI endorsement. Note also that language in Element 6, if selected by the Council, would ensure all eight of the LLP licenses assigned a transferable AI endorsement during the current fishing year would be eligible to join a cooperative and harvest Pacific cod allocated to an AI cooperative associated with an AI shoreplant regardless of whether they qualify for QS based on their own catch history in Element 2.

⁹¹ [R:\FMPs\Amendments \(Gfish\)\COMBINED\AM9282\AMD 92-82 pr.pr \(November 24, 2008\).doc](R:\FMPs\Amendments (Gfish)\COMBINED\AM9282\AMD 92-82 pr.pr (November 24, 2008).doc).

Table 2-90 Annual targeted AI Pacific cod activity for those LLP licenses with AI transferable endorsements from 2004-2019

Year	Count of LLP licenses with a transferable AI endorsement	Targeted AI Pacific cod (mt)
2004	7	1,886
2005	4	433
2006	1	*
2007	6	277
2008	3	134
2009	6	350
2010	3	568
2011	0	0
2012	0	0
2013	0	0
2014	0	0
2015	0	0
2016	0	0
2017	0	0
2018	5	1,041
2019	2	*

Source: AKFIN, Jan 2021

Table originates from Excel file AI_endorsement_LLPs_60(1-29-21)

*Denotes confidential data

Table 2-91 Quintile distribution for AI transferable endorsements with the addition of parallel AI Pacific cod target catch during 2004-2009 to the eligible AI Pacific cod target catch during 2010-2019

Options	Qualifying year/drop year suboptions	Quintile grouping by annual average qualifying landings (mt)	Number of qualified AI transferable endorsements	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)	Average allocation using 2019 trawl CV section apportionment with AI transferable endorsements included (mt)
2.2.1 (with C-season)	2014-2019 (no drop)	0-250	5	216	0.62%	0.12%	44	97
2.2.2 (with C-season)	2009-2019 (no drop)	0-250	7	201	0.59%	0.08%	30	86
2.2.3 (with C-season)	2004-2019 (no drop)	0-250	8	321	0.99%	0.12%	44	77

Source: AKFIN, January 2021

Table originates from Tables and Figures for June 2021 Initial Review

Option 2.2.4 – Blended Allocation for LLP Licenses Currently on AFA Sideboard Vessels with 1997 History

An issue that has been identified during preliminary discussions of the cooperative program is how to address BSAI Pacific cod sideboard limit transfers that have occurred within AFA cooperatives via civil contracts as these transfers could be considered in determining allocations under this proposed action. AFA vessels can catch BSAI Pacific cod up to given amount. That amount is established using the AFA non-Pacific cod exempt CVs 1997 catch history relative to the BSAI ITAC. This percentage was established during the implementation of the AFA and is considered a sideboard limit. This sideboard limit is not allocated to AFA cooperatives; however, the AFA CVs with sideboard limits may voluntarily determine how to harvest the available Pacific cod sideboard limit. The inshore cooperatives and the

mothership sector have developed their own methodologies to allocate the limit to members of their cooperatives. The methods can be different in the inshore and mothership sectors. Those decisions have resulted in cooperative members creating civil contracts to transfer Pacific cod sideboard limits to facilitate its efficient harvest. The transfers of Pacific cod sideboard limits could be based on a cash transaction, a transfer within the cooperative where there is no costs/fee imposed, or as an exchange for AFA pollock quota. Transfers may or may not have included a contract that identified the disposition of future harvest privileges associated with the harvest and transfer of the sideboard limit amount. Because the actual quantity of Pacific cod that may be harvested by each cooperative member is not available to the analysts, it is not possible to track the quantity of Pacific cod that was transferred from one non-exempt AFA member of a cooperative to another or the terms and conditions associated with those transfers. CV ownership data are limited, so even if transfer data were available, it would be difficult to determine, in all cases, whether transfers were between firms or to different vessels owned/controlled by the same firm.

To address BSAI Pacific cod transfers that have occurred within the AFA cooperatives, the Council included Option 2.2.4 for analysis. Specifically, this option is for those eligible LLP licenses affiliated with AFA vessels restricted by BSAI Pacific cod sideboard limits. These LLP licenses may be allocated a portion of the trawl CV sector's QS using a blend of AFA sideboard history based BSAI Pacific cod catch history from 1997 and targeted BSAI Pacific cod during the qualifying years (Options 2.2.1-2.2.3). The blend amounts are 50 percent/50 percent, 80 percent/20 percent, and 20 percent/80 percent. Option 4 is not intended to be used for LLP licenses affiliated with AFA sideboard exempt CVs and non-AFA CVs; this option would only impact AFA non-exempt sideboarded CVs. The allocation to these LLP licenses would be based on the Pacific cod catch history of targeted BSAI Pacific cod authorized by that LLP license during the qualifying years (Options 2.2.1-2.2.3).

As noted, some AFA CVs were subject to BSAI Pacific cod sideboards while other AFA trawl CVs were exempt from these sideboard limits. The AFA final rule exempted certain AFA CVs that had relatively small pollock fishing history and that showed significant economic dependence on BSAI Pacific cod. For AFA CVs to receive an exemption from BSAI Pacific cod sideboards, they had to have 1) made 30 or more legal landings in the BSAI directed fishery for Pacific cod from 1995 to 1997, 2) averaged annual BS pollock landings less than 1,700 mt from 1995 to 1997, and 3) be less than 125 ft in length. In addition, the Council recommended that all AFA CVs with mothership (MS) endorsements be exempt from Pacific cod sideboard measures after March 1 of each year. Of the 112 permitted AFA CVs that were initially permitted, 10 were exempt from the BSAI Pacific cod sideboard limits under the landings and vessel size criteria, as are the 19 vessels that are members of the MS sector, after March 1 of each fishing year.⁹² The remaining 83 AFA CVs are subject to BSAI Pacific cod sideboard limits. Pacific cod harvest by exempt AFA CVs as a percentage of the Pacific cod harvest of all AFA CVs has ranged from a low of 30 percent in 2003 to a high of 36 percent in 2011, and overall shows a slight increasing trend.⁹³

The AFA trawl CV Pacific cod sideboard limits were established to protect the interests of fishermen and processors who do not directly benefit from the AFA pollock allocations from those fishermen and processors who received exclusive harvesting and processing privileges under the AFA. Table 2-92 provides the sideboard ratios for BSAI Pacific cod and the 2020 sideboard limits.

⁹² Northern Economics, Inc., 2017

⁹³ Northern Economics, Inc., 2017

Table 2-92 AFA sideboard limits for BSAI Pacific cod

Target species and gear	Area/Season	Sideboard ratio ¹	2020 TAC ² (mt)	2020 sideboard limit (mt)
Pacific cod trawl gear CV	BSAI Jan 20 - Apr 1	0.8609	20,156	17,352
	BSAI Apr 1 - Jun 10	0.8609	2,996	2,579
	BSAI Jun 10 - Nov 1	0.8609	4,086	3,518

Source: NMFS

¹Determined using a ratio of 1997 AFA CV catch to 1997 TAC

² BSAI Pacific cod is multiplied by the remainder of the TAC of that species after the subtraction of the CDQ reserve under § 679.20(b)(1)(ii)(C).

Based on the 2019 LLP license file, there were nine active LLP licenses with an AFA CV BSAI Pacific cod exempt flag and 90 active LLP licenses with an AFA endorsement without a BSAI Pacific cod exempt flag.

In looking at Option 2.2.4 for purposes of analysis and implementation, this option uses the 1997 BSAI Pacific cod catch history by AFA trawl CV sideboard vessels, which is a vessel-based history, to blend eligible catch history determined from Element 2, Options 2.2.1-2.2.3. Since the LLP license program was implemented January 1, 2000, there was no authorizing LLP license assigned to an AFA trawl sideboarded CV during 1997 that could be blended with qualified catch history from Options 2.2.1-2.2.3. As a result, Option 2.2.4 within the context of an LLP license-based program, will not function without some method of applying a vessel’s 1997 catch history to an eligible LLP license.

In addition, staff does not have access to cooperative contracts or individual contracts that provide information on the terms and conditions of transfers that have occurred. The data available only indicates how much catch was associated with an LLP license or a vessel. The data do not provide any information on how the cooperative determined how much Pacific cod the member would be allowed to harvest. If the intention is to have the trawl CV cooperative program be based solely on LLP licenses, there is not a straightforward solution for integrating 1997 vessel catch data with LLP license-based allocations. Some LLP licenses have been transferred between vessels throughout the time the LLP license was issued and there is no way to know which landing is from a sideboard that was leased, and which was not. There are at least three distinct points in time that blending of the 1997 sideboard history with the eligible catch history from Options 2.2.1-2.2.3 can occur. They include 1) blending history when the LLP license was on the sideboarded vessel during the PCTC Program qualifying years defined in Options 2.2.1-2.2.3, 2) blending the history for LLP licenses that are on the sideboarded vessels at the time of final implementation of the PCTC Program, or 3) blending the history of those LLP licenses that were generated based on the catch history of sideboarded vessels at the time the LLP license was initially issued.

During the December 2020 meeting, the Council clarified that the blended allocation should be attached to the eligible LLP license at the time of implementation for the PCTC Program. This approach is better suited for addressing the transferability of LLP licenses. During the 20 years since implementation of the LLP licenses, originally issued LLP licenses could have been transferred several times. As a result, blending the eligible catch history currently assigned to the sideboarded vessels at the time of implementation of the PCTC Program is the cleanest and most transparent approach.

Like any of the approaches noted above, there could be AFA trawl sideboarded CVs that do not have an LLP license assigned to the vessel to blend their 1997 sideboard history and catch history determined in Element 2, Options 2.2.1-2.2.3. In the case of the Council approved approach, there are 17 AFA trawl sideboarded CVs with approximately 27 percent of 1997 BSAI sideboard history that did not have an LLP license assigned to them at the time blend allocation tables were prepared and therefore are not included in the results of the blended option. Based on eligibility to receive QS (Element 2.1), if these 17 AFA trawl sideboarded CVs are assigned to an LLP license as of December 31, 2019, these vessel’s 1997

sideboarded history will be blended with the LLP license's catch history determined in Element 2, Options 2.2.1-2.2.3. For those AFA trawl sideboarded CVs that are not assigned an LLP license as of December 31, 2019, Option 7.1.1 could provide an avenue for the owners of these AFA trawl sideboarded CVs to engage in transfer of QS to other LLP licenses associated with AFA trawl sideboarded CVs.

To eliminate the effects of differing TACs between 1997 and the qualifying periods from Options 2.2.1-2.2.3, the 1997 sideboard catch history was scaled to the catch history from Options 2.2.1-2.2.3. Table 2-93, Table 2-94, and Table 2-95 show the total number of qualified LLP licenses in addition to the distribution of qualified catch history at the quintile level when blending 1997 sideboard history from Options 2.2.1-2.2.3 for sideboarded AFA CVs. Given that there are 54 permutations under Option 2.2.4, the tables below provide allocation information with all three seasons only.

Table 2-93 Blended Option 2.2.1 (with C season) total number of qualified licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2014-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.1 (with C-season) 50%SB/50%QS blend	2014-2019 (no drop)	119	0-250	64	6,255	18%	0.28%	101
			250-500	36	13,168	38%	1.06%	378
			500-750	9	5,500	16%	1.77%	631
			750-1000	6	5,291	15%	2.55%	911
			>1000	4	4,311	12%	3.12%	1,113
	2014-2019 (drop 1)		0-250	60	6,213	16%	0.26%	93
			250-500	31	11,179	28%	0.91%	325
			500-750	15	8,803	22%	1.48%	529
			750-1000	7	6,211	16%	2.24%	800
			>1000	6	7,119	18%	3.00%	1,071
	2014-2019 (drop 2)		0-250	56	6,200	14%	0.25%	87
			250-500	31	11,806	26%	0.84%	301
			500-750	16	9,832	22%	1.36%	485
			750-1000	7	6,053	13%	1.91%	682
			>1000	9	11,293	25%	2.78%	990
Option 2.2.1 (with C-season) 80%SB/20%QS blend	2014-2019 (no drop)	119	0-250	66	5,921	17%	0.26%	93
			250-500	31	11,619	34%	1.09%	387
			500-750	10	5,593	16%	1.62%	578
			750-1,000	8	7,081	21%	2.56%	914
			>1,000	4	4,311	12%	3.12%	1,113
	2014-2019 (drop 1)		0-250	62	5,746	15%	0.23%	84
			250-500	26	9,585	24%	0.93%	333
			500-750	19	11,261	28%	1.50%	535
			750-1,000	5	4,828	12%	2.44%	871
			>1,000	7	8,106	21%	2.93%	1,045
	2014-2019 (drop 2)		0-250	57	5,291	12%	0.21%	73
			250-500	25	9,244	20%	0.82%	292
			500-750	20	12,195	27%	1.35%	481
			750-1,000	5	3,835	8%	1.70%	605
			>1,000	12	14,618	32%	2.70%	961
Option 2.2.1 (with C-season) 20%SB/80%QS blend	2014-2019 (no drop)	119	0-250	68	5,600	16%	0.24%	85
			250-500	24	8,854	26%	1.07%	381
			500-750	15	8,626	25%	1.67%	594
			750-1000	7	6,119	18%	2.53%	903
			>1000	5	5,325	15%	3.08%	1,100
	2014-2019 (drop 1)		0-250	64	5,473	14%	0.22%	77
			250-500	23	8,736	22%	0.96%	343
			500-750	17	10,053	25%	1.50%	533
			750-1000	7	6,069	15%	2.19%	782
			>1000	8	9,195	23%	2.91%	1,037
	2014-2019 (drop 2)		0-250	58	4,870	11%	0.19%	66
			250-500	21	7,563	17%	0.80%	284
			500-750	21	12,564	28%	1.32%	472
			750-1000	8	6,620	15%	1.83%	653
			>1000	11	13,565	30%	2.73%	973

Source: AKFN, July 2021

Table originates from Excel file BSAI_PCOD_LAPP_blend(7-14-21)

SB - 1997 sideboard history; QS - quota share from qualifying years

Table 2-94 Blended Option 2.2.2 (with C season) total number of qualified licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2009-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.2 (with C-season) 50%SB/50%QS blend	2009-2019 (no drop)	124	0-250	73	6,798	20%	0.28%	99
			250-500	30	10,582	31%	1.05%	374
			500-750	11	6,506	19%	1.76%	628
			750-1,000	6	5,175	15%	2.57%	915
			>1,000	4	4,541	14%	3.38%	1,205
	2009-2019 (drop 1)		0-250	67	5,843	16%	0.24%	85
			250-500	31	10,485	29%	0.93%	331
			500-750	15	8,860	24%	1.62%	578
			750-1000	6	5,349	15%	2.45%	872
			>1000	5	5,901	16%	3.24%	1,155
	2009-2019 (drop 2)		0-250	66	6,110	16%	0.24%	84
			250-500	29	10,118	26%	0.89%	316
500-750		15	8,748	22%	1.48%	529		
750-1000		8	7,057	18%	2.24%	799		
>1000		6	7,312	19%	3.10%	1,105		
Option 2.2.2 (with C-season) 80%SB/20%QS blend	2009-2019 (no drop)	124	0-250	71	5,829	17%	0.24%	87
			250-500	31	10,836	32%	1.04%	371
			500-750	9	4,932	15%	1.63%	582
			750-1,000	10	8,467	25%	2.52%	899
			>1,000	3	3,537	11%	3.51%	1,251
	2009-2019 (drop 1)		0-250	68	5,549	15%	0.22%	80
			250-500	32	11,560	32%	0.99%	354
			500-750	11	6,391	18%	1.59%	569
			750-1,000	9	8,113	22%	2.47%	882
			>1,000	4	4,825	13%	3.31%	1,180
	2009-2019 (drop 2)		0-250	68	6,030	15%	0.23%	80
			250-500	29	11,011	28%	0.97%	344
500-750		14	8,459	21%	1.54%	548		
750-1,000		7	6,614	17%	2.40%	856		
>1,000		6	7,232	18%	3.06%	1,092		
Option 2.2.2 (with C-season) 20%SB/80%QS blend	2009-2019 (no drop)	124	0-250	74	5,357	16%	0.22%	77
			250-500	26	9,384	28%	1.07%	383
			500-750	12	7,294	22%	1.81%	645
			750-1,000	8	6,938	21%	2.58%	920
			>1,000	4	4,629	14%	3.44%	1,228
	2009-2019 (drop 1)		0-250	72	5,327	15%	0.20%	72
			250-500	20	6,629	18%	0.91%	324
			500-750	18	10,510	29%	1.60%	571
			750-1,000	9	7,981	22%	2.43%	868
			>1,000	5	5,990	16%	3.29%	1,172
	2009-2019 (drop 2)		0-250	71	5,574	14%	0.20%	71
			250-500	20	7,051	18%	0.90%	320
500-750		17	10,266	26%	1.53%	547		
750-1,000		9	8,024	20%	2.27%	808		
>1,000		7	8,431	21%	3.06%	1,092		

Source: AKFIN, July 2021

Table originates from Excel file BSAI_PCOD_LAPP_blend(7-14-21)

SB - 1997 sideboard history; QS - quota share from qualifying years

Table 2-95 Blended Option 2.2.3 (with C season) total number of qualified licenses, and by quintile group, the number of qualified LLP licenses, aggregated annual average qualifying landings (mt), percent of aggregated annual average qualifying landings relative to the total, average annual allocation percent per qualified LLP license, and average allocation (mt) using 2019 sector apportionment grouped by quintile of mt per LLP license for the 2004-2019 options

Options	Qualifying year/drop year suboptions	Qualifying licenses	Quintile grouping by annual average qualifying landings (mt)	Number of qualified LLPs	Aggregated annual average qualifying landings (mt)	Aggregated annual average qualifying landings as a % of total aggregated annual average qualifying landings	Average annual allocation percent per qualifying LLP license	Average allocation using 2019 trawl CV sector apportionment (mt)
Option 2.2.3 (with C-season) 50%SB/50%QS blend	2004-2019 (no drop)	128	0-250	82	7,826	24%	0.29%	105
			250-500	27	9,853	30%	1.13%	401
			500-750	12	7,772	24%	2.00%	712
			750-1,000	4	3,432	11%	2.65%	943
			>1,000	3	3,551	11%	3.65%	1,301
	2004-2019 (drop 1)		0-250	76	6,774	20%	0.26%	92
			250-500	30	10,470	30%	1.01%	362
			500-750	11	6,744	20%	1.78%	636
			750-1,000	8	6,682	19%	2.43%	866
			>1,000	3	3,727	11%	3.61%	1,288
	2004-2019 (drop 2)		0-250	73	6,434	18%	0.24%	86
			250-500	30	10,347	28%	0.95%	338
500-750		12	7,110	20%	1.63%	581		
750-1,000		9	7,595	21%	2.32%	827		
>1,000		4	4,899	13%	3.37%	1,200		
Option 2.2.3 (with C-season) 80%SB/20%QS blend	2004-2019 (no drop)	128	0-250	78	6,188	19%	0.24%	87
			250-500	30	10,872	34%	1.12%	398
			500-750	11	6,823	21%	1.91%	682
			750-1,000	7	6,068	19%	2.67%	953
			>1,000	2	2,483	8%	3.83%	1,365
	2004-2019 (drop 1)		0-250	76	6,052	18%	0.23%	83
			250-500	29	10,513	31%	1.05%	376
			500-750	12	7,273	21%	1.76%	628
			750-1,000	8	6,950	20%	2.53%	901
			>1,000	3	3,608	10%	3.50%	1,247
	2009-2019 (drop 2)		0-250	75	6,162	17%	0.23%	81
			250-500	29	10,910	30%	1.03%	369
500-750		11	6,638	18%	1.66%	591		
750-1,000		9	7,890	22%	2.41%	859		
>1,000		4	4,785	13%	3.29%	1,173		
Option 2.2.3 (with C-season) 20%SB/80%QS blend	2004-2019 (no drop)	128	0-250	83	6,568	20%	0.24%	87
			250-500	22	8,040	25%	1.13%	402
			500-750	15	9,770	30%	2.01%	716
			750-1,000	5	4,388	14%	2.71%	965
			>1,000	3	3,669	11%	3.77%	1,345
	2004-2019 (drop 1)		0-250	80	6,213	18%	0.23%	81
			250-500	24	8,829	26%	1.07%	381
			500-750	13	8,568	25%	1.92%	683
			750-1,000	8	6,940	20%	2.52%	899
			>1,000	3	3,846	11%	3.73%	1,329
	2004-2019 (drop 2)		0-250	80	6,624	18%	0.23%	81
			250-500	21	7,845	22%	1.03%	366
500-750		12	7,477	21%	1.71%	611		
750-1,000		10	8,421	23%	2.31%	825		
>1,000		5	6,017	17%	3.31%	1,180		

Source: AKFIN, July 2021

Table originates from Excel file BSAI_PCOD_LAPP_blend(7-14-21)

SB - 1997 sideboard history; QS - quota share from qualifying years

One of the effects of blending the 1997 sideboard history with the qualifying catch history from Options 2.2.1 through 2.2.3 is the addition of LLP licenses that would qualify based solely on leasing their sideboard limits to other AFA vessels. These additional LLP licenses are the result of AFA sideboarded vessels with 1997 Pacific cod history that focused on pollock instead of continuing to target Pacific cod. These additional LLP licenses are therefore not included as eligible licenses in Table 2-86, Table 2-87, and Table 2-88, but are included in Table 2-93, Table 2-94, and Table 2-95 because of their 1997 Pacific cod fishing activity. The number of additional LLP licenses that would qualify for QS under the blend option vary depending on the qualifying year option. As noted in Table 2-96, blending Option 2.2.1 with 1997 sideboard history generates 33 additional LLP licenses, blending Option 2.2.2 generates 31 additional LLP licenses, and blending Option 2.2.3 generates 20 additional LLP licenses. As noted in Table 2-97, crediting 80 percent of 1997 sideboard history when blending with catch history from qualifying years in Options 2.2.1 through 2.2.3 generates the largest allocation for the additional LLP licenses. This means that under Option 2.2.1 (2014-2019) for example, a total of 90 LLP licenses would receive a blended allocation. Of those 90 LLP licenses receiving a blended allocation, 33 LLP licenses that were added under the blend option would receive 16 percent of the total trawl CV allocation (under a blend option of 80 percent of sideboard history/20 percent of catch history from qualifying years Options 2.2.1-2.2.3) despite these LLP licenses having no qualifying landings during the 2014 through 2019 catch history years, while the other 57 LLP licenses receiving a blended allocation, would receive 38 percent of the total trawl CV allocation (see Table 2-96 for LLP license counts and Table 2-97 for percent of total). The remaining 29 LLP licenses which are assigned to non-AFA vessels and AFA sideboard exempt vessels that receive non-blended allocation, would receive the remaining 46 percent of the total trawl CV allocation.

Table 2-96 Number of qualified LLP licenses grouped by blended and non-blend BSAI Pacific cod qualifying catch history using 1997 sideboard history and catch history from Options 2.2.1 through 2.2.3

Option	Blended catch history			Non-blended catch history		Total LLP qualified licenses
	Total number of LLP licenses with blended catch history	Number of additional LLP license from 1997 sideboard history	Number of existing LLP licenses that qualify under the non-blend option	Number of sideboard exempt LLP licenses	Number of non-AFA LLP licenses	
2014-2019 (no drop) 2014-2019 (drop1) 2014-2019 (drop2)	90	33	57	14	15	119
2009-2019 (no drop) 2009-2019 (drop1) 2009-2019 (drop2)	93	31	62	15	16	124
2004-2019 (no drop) 2004-2019 (drop1) 2004-2019 (drop2)	95	20	75	15	18	128

Source: AKFIN, June 2020

Table originates from Excel file BSAI_PCOD_LAPP_blend(6-18-20)

Table 2-97 Percent of qualifying BSAI Pacific cod catch history grouped by blended and non-blend BSAI Pacific cod qualifying catch history using 1997 sideboard history and catch history from Options 2.2.1 through 2.2.3

Option	Blended catch history using 20%SB/80%QS			Blended catch history using 80%SB/20%QS			Blended catch history using 50%SB/50%QS			Non-blended catch history	
	Blended total as a % of total catch history	% of total catch history for additional LLP licenses from 1997 sideboard history	% of total for existing LLP licenses that qualify under the non-blend option	Blended total as a % of total catch history	% of total catch history for additional LLP licenses from 1997 sideboard history	% of total for existing LLP licenses that qualify under the non-blend option	Blended total as a % of total catch history	% of total catch history for additional LLP licenses from 1997 sideboard history	% of total for existing LLP licenses that qualify under the non-blend option	% of total for exempt LLP licenses	% of total for non-AFA LLP licenses
2014-2019 (no drop)	54%	4%	50%	54%	16%	38%	54%	10%	44%	20%	26%
2014-2019 (drop1)	54%	4%	49%	54%	16%	38%	54%	10%	44%	21%	26%
2014-2019 (drop2)	53%	4%	49%	53%	16%	38%	53%	10%	43%	21%	26%
2009-2019 (no drop)	51%	4%	47%	51%	14%	37%	51%	9%	42%	22%	27%
2009-2019 (drop1)	51%	4%	47%	51%	14%	37%	51%	9%	42%	22%	27%
2009-2019 (drop2)	51%	4%	47%	51%	14%	37%	51%	9%	42%	22%	27%
2004-2019 (no drop)	54%	3%	51%	54%	8%	46%	54%	6%	48%	21%	25%
2004-2019 (drop1)	54%	3%	51%	54%	8%	46%	54%	6%	48%	21%	25%
2004-2019 (drop2)	54%	3%	51%	54%	8%	46%	54%	6%	48%	21%	25%

Source: AKFIN, June 2020

Table originates from Excel file BSAI_PCOD_LAPP_blend(6-18-20)

2.9.2.3. Reported catch without an LLP license

The PCTC Program proposes allocating QS to valid LLP licenses that were authorized to legally harvest BSAI Pacific cod from Federal or parallel fisheries during the qualifying years. Reviewing the CAS data used for this analysis indicates that there were reported catches by CVs that do not have an LLP license number listed in those data. This section is developed to show the magnitude of the issue and to allow the Council to provide direction on how these landings should be treated in the analysis and when persons apply for an initial allocation of QS for their LLP licenses.

Table 2-98 provides a summary of the reported retained catch and number of CVs associated with CAS data that did not include an LLP license number. Most of the reported retained catch that was not associated with an LLP license was harvested with the eight AI transferable endorsements assigned to non-AFA trawl CV less than 60' MLOA LLP licenses (see Section 2.9.2.2.1).

Table 2-98 Reported retained catch by vessels that did not have an LLP license number listed in the CAS data

Landings/Vessels	AI	BS	BSAI
2004-2019: % of landings	6.62%	0.03%	1.69%
2004-2019: Vessels	24	6	30
2009-2019: % of landings	4.65%	c	0.95%
2009-2019: Vessels	14	2	16
2014-2019: % of landings	6.15%	c	0.82%
2014-2019: Vessels	8	1	9

Source: AKFIN summary of CAS data

The remaining catch that is not assigned an LLP license number in the CAS data will likely need to be addressed before initial allocation. Almost all of that catch is reported to have been harvested by vessels with other LLP licenses that did not have the correct area endorsement, or they reported most of their

catch in that area in a GHL fishery, but some was listed as the open access fishery. In some cases, it appears the vessel had an LLP license with the correct area endorsement at some point during the fishing year and the information needs to be corrected in the CAS data. In other cases, the catch may need to be reviewed to determine if it should be reclassified as a GHL fishery harvest versus a parallel fishery harvest. Except for the eight LLP licenses assigned a transferable AI endorsement, any parallel fishery harvest that was taken when the vessel did not have a valid LLP license on the vessel would not count toward the qualifying catch history.

2.9.2.4. Element 2.3 – Stacked LLP Licenses

A vessel may be assigned to more than one LLP license that authorize catch by a vessel, commonly known as “stacking.” While stacking of LLP licenses and the distribution of QS does not apply to most qualified LLP licenses, it is an important decision point to the individuals and firms that are subject to the decision. There are a variety of reasons a vessel may be assigned to more than one LLP license. For example, two LLP licenses could have a suite of different area endorsements that provide the vessel operator greater flexibility where the vessel can fish.

Element 2.3 includes two options to address assigning QS to stacked LLP licenses at initial allocation absent an agreement provided by the license holder at the time of application. If an agreement is provided by the license holder at the time of application, qualifying catch history used to generate QS assigned to the LLP licenses is based on that agreement. Absent an agreement, Options 2.3.1 and 2.3.2 could be used to assign QS to eligible LLP licenses.

Option 2.3.1 would divide the qualifying catch history equally between the LLP licenses that authorized the vessel’s legal landings of targeted BSAI trawl CV Pacific cod during the qualifying years. Under this option, neither the vessel owner nor the LLP license holder would have the authority to determine how the qualifying catch history is divided. Qualifying catch history would be divided equally between each LLP license. If only one of the LLP licenses authorized the catch, then all the qualifying catch history used to generate QS would be assigned to that LLP license. This method is likely the easiest to implement because it could be done using only catch data without applications from the vessel owners.

Option 2.3.2 would authorize the owner of the vessel that made the catch to assign the resulting QS to the eligible LLP licenses. This option would only apply if more than one LLP license authorizes the vessel’s legal catch in an area. The option gives more power to the vessel owner versus the LLP license holder, in cases where multiple LLP licenses authorize the vessel’s legal landings in an area, if the ownership of the LLP license changes, or the LLP license holder was not the owner of the vessel when the landings were made. To illustrate this dynamic, a vessel owner is the holder of two LLP licenses to which the vessel is assigned. The vessel owner sells one of the LLP licenses to another firm. When the QS is assigned to an eligible LLP license, the vessel owner could apply all the qualifying catch history used to generate QS to the LLP license it still holds. As a result, the buyer of the LLP license would not receive any QS associated with the LLP license from the time when it was held by previous owner.

In case of multiple LLP licenses on vessel but not multiple area endorsements, the vessel’s area specific qualifying catch history used to generate QS will be attributed according to the LLP license’s area endorsement that authorized that vessel’s qualifying catch activity. In other words, BS qualifying catch history will be used to assign QS to the LLP license with the BS endorsement and AI qualifying catch history will be used to assign QS to the LLP license with the AI endorsement. For example, a vessel that is assigned two LLP licenses, one with a BS only endorsement and the other with both a BS and an AI endorsement, absent an agreement provided by the license holder at the time of application, the AI qualifying catch would generate QS to be assigned to the AI endorsed LLP license since there is only one LLP license assigned to the vessel with an AI endorsement that authorized that catch at the time of harvest. For BS qualifying catch, absent the Council selecting Option 2.3.2, the qualifying catch would be divided equally to assign QS to the two LLP licenses since both licenses have a BS endorsement that authorized that catch at the time of harvest.

Table 2-99 provides a list of trawl CVs with multiple LLP licenses by area endorsement. In all three qualifying year options, the number of trawl CVs with multiple LLP licenses is the same, 9 trawl CVs with 21 LLP licenses that accounts for approximately 22 percent of BSAI Pacific cod trawl CV allocation. Of those 21 LLP licenses, 20 are endorsed for the BS, while 10 are endorsed for the AI. Of the nine vessels with multiple LLP licenses, there is at least one vessel where the vessel’s qualifying catch history in one area would generate QS to be attached to an LLP license that is owned by someone other than the vessel owner.

Table 2-99 Trawl CVs with multiple LLP licenses by area endorsement

Vessel	Total LLP licenses on vessel	BS trawl endorsements		AI trawl endorsement	
		No	Yes	No	Yes
1	4		4	2	2
2	3		3	2	1
3	2	1	1		2
4	2		2	2	
5	2		2	2	
6	2		2		2
7	2		2	1	1
8	2		2	2	
9	2		2		2

Source: AKFIN, April 2020

Table originates from Excel file BSAI_PCOD_Stacked(4-8-20)

If the Council were to select a blend option (Option 2.2.4) to allocate QS and there were multiple LLP licenses authorizing the AFA vessel to fish at the time of implementation that had 1997 BSAI Pacific cod sideboard history, assigning QS to an LLP license would require a different approach than above since the LLP licenses were not attached to the vessel at the time of 1997 Pacific cod landing. Instead, the owner of the vessel at the time implementation would assign the QS that was derived from the 1997 sideboard history to their choice of LLP license that has a trawl BS and/or AI endorsement that authorizes the AFA vessel to fish at the time implementation. In those cases, where not all the LLP licenses authorizing the AFA vessel to fish at the time of implementation has a trawl BS or AI endorsement, the QS would only be assigned to the LLP license(s) that authorize the use of trawl gear in one or both areas.

2.9.2.5. Element 2.4 – Issuance of Annual Quota

The Council included Element 2.4 to provide direction that each cooperative will be issued CQ based on its aggregate QS attached to LLP licenses that are assigned to the cooperative by the LLP license holder. The cooperatives would be required to ensure they do not exceed the annual allocation limits for the BSAI and do not exceed the seasonal limits which are 74 percent for the A-season, 11 percent for the B-season, and 15 percent for the C-season.

Any changes to the existing seasonal limits would require a consultation under section 7 of the Endangered Species Act (ESA). The existing seasonal limits are protection measures to mitigate impacts of the Pacific cod fishery on Steller sea lions. Any changes, including variations in the season limits, would trigger consultation.

Cooperative management provides the greatest level of flexibility for the participants to efficiently manage their annual quota within the seasonal and area constraints. NMFS’s recommendation would be to annually issue CQ by season as a tool to monitor that the seasonal limits are followed and can be

effectively enforced. NMFS would issue the CQ and rely on cooperative management agreements to ensure the seasonal limits are not exceeded. Rollovers from the season may occur, but individual issuance of the seasons would limit the fleet's potential to fish their CQ entirely in one season. For example, if CQ was issued as an aggregate, a cooperative could transfer CQ to another cooperative and it would be difficult to determine when that cooperative would harvest it. Ultimately, it would be difficult to rely solely on cooperative management of the seasonal limits without the ability to enforce the limits.

In terms of implementing Element 2.8.2.6, NMFS would follow a process similar to AFA, by distributing CQ on an annual basis. However, NMFS would issue A season quota, and then B season quota separately to reduce any concerns about catching all quota into A season, impacting SSL protection measures in place. This is more of a concern for the PCTC Program due to the unknown number of cooperatives in this program. Cooperatives would be prohibited from exceeding a seasonal allowance of Pacific cod. Since unharvested A season Pacific cod rolls over to B season, A season CQ could be fished from January 20 until June 10, and any A season rollovers and B season CQ could be fished from April 1 until June 10. Participants of a catch share program should be aware that if the non-CDQ TAC for Pacific cod is reached in the BS or AI, NMFS will prohibit directed fishing for Pacific cod in that area for all non-CDQ sectors. Any unfished CQ would need to be fished in the area that remains open to Pacific cod directed fishing.

Steller sea lions and Pacific cod seasonal limits

During the October 2019 meeting, the Council requested that the analysis included the potential impacts of adjusting seasonal harvest percentages for the BSAI Pacific cod trawl CV sector fishery on Steller sea lions (SSL). Currently, the proposed action for the PCTC Program would leave in place the existing trawl CV seasonal limits, which are 74 percent for the A-season, 11 percent for the B-season, and 15 percent for the C-season. Any adjustments to these percentage amounts via this action or a trailing amendment would require consideration of SSL protection measures. Table 5 to 50 CFR 679 outlines SSL protection areas in the Pacific cod fishery. For further information concerning the effects of this action on SSL and other marine mammals, see Section 3.5.

In general, adequate prey availability for SSL is especially important in early winter, a sensitive period for SSL foraging, particularly around rookeries and major haul outs. If adjustments in the seasonal dates or harvest percentages combined with the development of the PCTC Program results in no change in temporal fishing patterns relative to the status quo, there would likely be no effect to the prey availability to SSL, and thus no effect to SSL. If adjusting the seasonal dates or harvest percentages combined with development of the PCTC Program resulted in a shift in harvest that decreased prey availability to SSL, it could result in an adverse effect to the SSL in the BSAI. If adjusting the seasonal harvest percentages combined with the PCTC Program resulted in greater harvest effort in the winter cod fishery, especially early winter, a higher potential for greater adverse effect on SSL could exist. Further, the larger the adjustment of seasonal harvest percentages, the greater the potential for a larger negative effect on SSL, especially if the harvest continued at a greater rate than status quo into early winter. For further information on this issue, see Section 3.5.

The intent of the existing SSL protection measures is also to maintain spatial dispersion of the fishery to avoid negatively affecting prey availability to SSL. Therefore, effects of the adjusting seasonal dates or harvest percentages on spatial dispersion of the fishery would follow a similar trajectory of impact on SSL as would the effects on temporal dispersion. If the adjustment of seasonal harvest percentages combined with development of the PCTC Program caused a greater spatial harvest concentration relative to the status quo, the potential exists for adverse effects to SSL, particularly closer to critical habitat and areas closed for SSL protection.

The PCTC Program is expected to lengthen the fishery, making it comparable to the years before 2017. From 2017 to 2020, the length of the A-season Pacific cod fishery has steadily compressed due primarily to significantly lower BSAI and GOA Pacific cod TACs and increased effort and catch rates in the fishery. The proposed cooperative structure is expected to provide the fleet the opportunity to slow the pace of the fishery and spread harvest efforts over a longer period, relative to 2017 through 2020.

However, the fleet would still be expected to harvest most of the A season allocation when the Pacific cod are aggregated to reduce cost and increase efficiency. The timing of the Pacific cod spawning aggregations and higher halibut PSC rates before mid-February would continue to be a primary determinant of when the fishery takes place. However, some changes to spatial dispersion of harvest related to the development of the PCTC Program would be expected. For example, Element 6 would require the cooperatives to reserve a portion of their annual Pacific cod quota for delivery to AI shoreplants. Assuming that most of the Pacific cod quota reserved for delivery to AI shoreplants would be harvested in the AI, Element 6 could change spatial dispersion between the AI and BS relative to historical patterns. In addition, CVs would continue to fish where the Pacific cod aggregations occur. Those aggregations and areas that result in lower rates of halibut PSC are anticipated to be primary determinants of where the fishery would take place in the BS and the AI. Nevertheless, adjusting seasonal dates or harvest percentages, whether or not combined with these anticipated temporal and spatial changes of the BSAI Pacific cod trawl CV fishery, would require a consultation under section 7 of the ESA. Maintaining existing management tools, such as seasonal limits and monitoring of transfers, reallocations, and rollovers, would reduce any increased risks to SSL.

2.9.2.6. Element 2.5 – Cooperatives for A and B season only

Element 2.5 provides an option to only allocate A season and B season sector apportionment (after deduction of the ICAs) to cooperatives as CQ leaving the 15 percent C season apportionment as a limited access trawl CV fishery for any vessel assigned to an eligible groundfish LLP license with applicable area endorsements. The C season limited access trawl CV fishery will be managed as it is currently by NMFS, including management of incidental catches of Pacific cod in other directed fisheries. Remaining C season sector apportionments, A season and B season ICAs that NMFS projects to go unused, and any remaining CQ after the B season are subject to reallocation to other sectors under current reallocation rules.

Under Element 2.5, eligible LLP licenses must be assigned to a cooperative to receive annual A season and B season CQ. Annual cooperative allocations attributable to each qualified LLP license will be that LLP license's proportional share of the total qualifying Pacific cod A season and B season history. Based on the language in Element 2.5, C season catch history is excluded in calculating qualified LLP license's proportional share of the total qualifying Pacific cod history.

Allocations of Pacific cod to the fishery sectors are apportioned by seasons. The trawl CV sector allocation is apportioned among three seasons. In the BSAI, directed fishing for Pacific cod by trawl CVs is authorized only during the following three seasons that correspond to the A season, B season, and C season portions of the year.

- A season runs from January 20 – April 1 and is allocated 74 percent of the sector allocation.
- B season runs from April 1 – June 10 and is allocated 11 percent of the sector allocation.
- C season runs from June 10 – November 1 and is allocated 15 percent of the sector allocation.

Table 2-172 shows that about 89 percent of the BSAI Pacific cod catch for the trawl CV sector was taken in the A season from 2004 through 2020. On an annual basis, the catch ranged from 100 percent in 2020 to about 82 percent in 2018, which indicates that majority of the catch is always in the A season. Catch in the B season averages 9.6 percent of the BSAI Pacific cod catch from 2004 through April 10, 2000, while catch in the C season averaged 1.9 percent during the same period.

As noted in Table 2-86, Table 2-87, Table 2-88, allocating only A season and B season BSAI Pacific cod to qualified LLP licenses relative to allocating all three seasons results in one less eligible LLP license under Option 2.2.1 (2014-2019) and Option 2.2.2 (2009-2019). In other words, one LLP license was assigned to a vessel that fished only the BSAI Pacific cod C season during the qualifying years for Option 2.2.1 (2014-2019) and Option 2.2.2 (2009-2019), and therefore that one LLP license would not qualify under these two qualifying year options. In addition, excluding C season catch history when calculating total qualifying history would change some LLP licenses share of QS since they were used on trawl CVs that targeted BSAI Pacific cod during the C season. Since this option does not include C season history in the cooperative program, those LLP licenses with C season catch history would see a reduction in their QS relative to the option that includes all three seasons in the qualifying history. As noted in Table 2-100, the number of affected LLP licenses ranges from a low of 13 under Option 2.2.1 (2014-2019) with no drop years to a high of 33 under Option 2.2.3 (2004-2019) drop one year or drop two years. Most of the LLP licenses affected when C season is excluded from average annual qualifying landings would see a decline of less than 10 mt of qualifying catch per LLP license, which is less than 0.01 percent of their total allocation. Significantly fewer LLP licenses would see a decline greater than 50 mt of average annual qualifying landings if C season were excluded, which is less than one percent of their total allocation for most of these LLP licenses.

Table 2-100 Number of qualified LLP licenses that would receive reduced average annual qualifying landings when BSAI Pacific cod C season is excluded

Difference in average annual qualifying landings	2014-2019			2009-2019			2004-2019		
	No drop	Drop 1	Drop 2	No drop	Drop 1	Drop 2	No drop	Drop 1	Drop 2
< 10 mt difference	8	7	8	13	13	13	20	21	19
10 mt ≤ and ≤ 50 mt difference	*	*	4	5	4	4	7	7	9
> 50 mt difference	*	*	3	3	4	4	5	5	5
Total LLP licenses	13	14	15	21	21	21	32	33	33

Source: AKFIN, December 2019

Table originates from Excel file BSAI_PCOD_LAPP_Option1(12-19-19)-1, BSAI_PCOD_LAPP_Option2(12-19-19), BSAI_PCOD_LAPP_Option3(12-19-19)

* Denotes confidential data

2.9.2.7. Element 2.6 – Management of groundfish species not allocated

Since allocations of BSAI Pacific cod to eligible LLP licenses are specific to targeted Pacific cod and not incidentally caught Pacific cod, Element 2.6 clarifies that groundfish catch in the Pacific cod fishery will rely on traditional management tools like an ICA and MRAs. For groundfish species not allocated under the PCTC, MRAs would continue to be used to limit the catch of those species in the directed Pacific cod fishery. For incidental catch of Pacific cod, NMFS would establish an ICA that would be deducted before CQ distribution to cooperatives. The ICA amount would be based on the Pacific cod incidental catch rates in non-Pacific cod BSAI trawl CV fisheries, TACs of Pacific cod and other groundfish fisheries, and whether an ICA established in the harvest specifications or an inseason ICA. The amount of the ICA will be determined on an annual basis and established as an amount of Pacific cod in metric tons. Setting the ICA in metric tons annually provides inseason management the flexibility to adjust the ICA based on the changes in BSAI groundfish TACs and expected incidental catch rates in trawl CV fisheries. For more information on ICA management of Pacific cod for the trawl CV sector, see Section 2.8.2.

In addition to an ICA, the current MRA amounts in the targeted Pacific cod fishery will provide management control of other groundfish. MRA regulations at 50 CFR §679.20(e) establish the calculation method and set individual MRAs for groundfish species, when directed fishing for that species is closed. The MRA is calculated as a percentage of the retained amount of a species closed to directed fishing, relative to the retained amount of basis species or basis species groups open for directed fishing. All MRA accounting is computed based on round weight equivalent. Amounts that are caught in excess of the MRA

percentage must be discarded. It is prohibited to exceed the maximum retainable amount for groundfish established under §679.20(e).

MRAs are the primary tool NMFS uses to regulate the catch of species closed to directed fishing. NMFS closes directed fishing to avoid reaching a TAC (typically established for conservation reasons), reaching an amount or percentage of groundfish TAC included in the annual harvest specifications for a gear and species or species group, or when a directed fishery has attained a prohibited species catch limit (e.g., halibut PSC limits). When NMFS prohibits directed fishing for a groundfish species, retention of incidental catch of that species is allowed up to an MRA calculated amount.

The MRA tables for both BSAI and GOA (Tables 10 and 11 to 50 CFR part §679) are provided in Appendix 7.2 of this document. These tables show retainable proportions of incidental catch species, relative to basis species open to directed fishing. The MRA table is a matrix of proportions representing a range of rates of expected or accepted incidental catch of species closed to directed fishing, relative to target species. As a management tool, MRAs rely on the ability of the vessel operator to selectively catch groundfish species. The species open for directed fishing are called the basis species in the MRA regulations. Groundfish species not open for a directed fishing are the incidental catch species. The MRA percentages are intended to slow the rate of harvest of a species when insufficient TAC amounts are available to support a directed fishing.

One change may occur to current management measures for non-allocated species. That change is imposing harvest limits for GOA species on LLP licenses assigned PCTC Program QS and the vessels that made those landings of targeted BSAI trawl CV Pacific cod. Element 4 (Section 2.9.4) in this document discusses the issue of limiting the LLP licenses and the vessels they are/were assigned Pacific cod QS when harvesting in GOA fisheries. This element is not intended to supersede other current regulations for LLP licenses not allocated QS under the PCTC Program. Element 2.6 is simply intended to state that harvests by vessels and LLP licenses outside the trawl CV sector will continue to be managed as open access, cooperatives, or IFQ fisheries, based on the regulations currently in place for those fisheries.

2.9.2.8. Element 2.7 - Removing AFA BSAI trawl CV Pacific cod sideboard limit

To reduce sideboard limit complexity and eliminate regulations that no longer accomplish what they were intended for, the Council is proposing to remove the BSAI Pacific cod sideboard limits for AFA non-exempt trawl CVs. This element would remove BSAI Pacific cod sideboard limits for AFA non-exempt trawl CVs at 50 CFR 679.64(b)(3)(ii) upon implementation of the PCTC Program. As part of the AFA program, BSAI Pacific cod sideboard limits for the AFA non-exempt trawl CVs were utilized to limit the competitive advantage AFA non-exempt trawl CV participants received from the AFA program relative to non-AFA trawl CVs and AFA BSAI Pacific cod exempt trawl CVs also participating in the BSAI Pacific cod fishery. The BSAI Pacific cod sideboard limit for AFA non-exempt trawl CVs is 86.09 percent of the seasonal allocations of BSAI trawl CV Pacific cod. If the PCTC program allocates all three seasons of BSAI trawl CV Pacific cod to cooperatives, all the trawl CV sector allocation of 22.1 percent would be issued as CQ to cooperatives after deduction of a trawl CV ICA, and therefore BSAI Pacific cod sideboard limits for AFA non-exempt trawl CVs would not be necessary.

If Element 2.5 is selected, only A and B season BSAI Pacific cod CQ would be allocated to cooperatives and leaving the C season as a trawl CV limited access fishery. Since the C season would be managed as a trawl CV limited access fishery, the Council may want to maintain the existing C season BSAI Pacific cod sideboard limits for AFA non-exempt trawl CVs. Maintaining the existing C season sideboard limit would ensure that AFA non-exempt trawl CVs do not use their competitive advantage under the AFA Program in a C season trawl CV limited access Pacific cod fishery relative to the non-AFA trawl CVs and the AFA sideboard exempt trawl CVs. As noted in Table 2-101, the C season (June 10 to November 1) BSAI Pacific cod sideboard limit for AFA non-exempt CVs for 2021 is 3,190 mt.

Table 2-101 BSAI Pacific cod sideboard limit by season for AFA non-exempt trawl CVs for 2021 and 2022

Fishery by area/gear/season	Ratio of 1995-1997 AFA CV catch to 1995-1997 TAC	2021 initial TAC	2021 AFA catcher vessel sideboard limits	2022 initial TAC	2022 AFA catcher vessel sideboard limits
BSAI	n/a	n/a	n/a	n/a	n/a
Trawl gear CV	n/a	n/a	n/a	n/a	n/a
Jan 20-Apr 1	0.8609	18,281	15,738	15,896	13,685
Apr 1-Jun 10	0.8609	2,717	2,339	2,363	2,034
Jun 10-Nov 1	0.8609	3,706	3,190	3,222	2,774

Historically the trawl CV sector on average harvested only 9 percent of the C season Pacific cod allocation from 2004 through 2019. Amongst the trawl CVs that target C season BSAI Pacific cod, there are generally one to two AFA non-exempt vessels and one to five non-AFA and AFA exempt trawl CVs operating most years from 2004 through 2019. Given the limited number of trawl CVs participating in the C season BSAI Pacific cod fishery, a table showing catch data was not provided since nearly all the catch data is confidential.

In addition to the BSAI Pacific cod sideboard limits for the AFA non-exempt trawl CVs, these same vessels are also restricted by BSAI halibut and crab PSC sideboard limits established at the onset of the AFA Program. For halibut PSC, the AFA non-exempt trawl CV sideboard limit for the BSAI Pacific cod fishery is 887 mt (see Table 22 in 85 FR 13573, March 9, 2020). Since the existing BSAI halibut PSC sideboard limit for the BSAI Pacific cod target fishery is larger than the existing 710 mt halibut PSC limit for all the TLAS even before apportioning at the fishery level (See Section 2.8.3.1), the halibut PSC sideboard limit does not constrain the AFA non-exempt trawl CVs in the Pacific cod fishery. The Council may want to consider, as part of the PCTC Program, removing from regulations the existing AFA non-exempt trawl CVs BSAI halibut PSC sideboard limit for the Pacific cod fishery at 50 CFR §679.64(b)(4)(i). For crab PSC, AFA trawl CV sideboard limits are not apportioned at target species level (see Table 22 in 85 FR 13573, March 9, 2020), and removing these sideboard limits from regulations is not recommended.

2.9.3. Element 3 – Prohibited Species Catch Limits

Element 3 would apportion halibut and crab PSC limits for the BSAI TLAS Pacific cod fishery to PCTC Program cooperatives. Specifically, the halibut PSC limit would be divided between the trawl CV and AFA C/P sectors based on historical use during the qualifying years selected in Element 2, with the trawl CV portion being available for the PCTC Program (Option 3.2). Crab PSC limits would be based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector. The Council has included an option to leave crab PSC limits at the TLAS level (Option 3.1). Element 3 also includes a reduction in halibut and crab PSC limits apportioned to the BSAI trawl CV Pacific cod sector between 10 percent and 35 percent for halibut (Suboption 3.3.1) and 10 percent to 45 percent for crab species. Any halibut and crab PSC limit reduction would not apply to the AFA C/P Pacific cod sector or other TLAS fisheries. Note that since PSC limit reductions apply specifically to the BSAI trawl CV Pacific cod sector, the crab PSC limit reduction could not be applied to the trawl CV sector under Option 3.1 since crab PSC limits are at the combined trawl CV and AFA C/P level for the Pacific cod fishery.

The Council’s PA is shown in **bold** below.

The annual crab and halibut PSC available to the BSAI trawl catcher vessel Pacific cod sector will be as follows:

Option 3.1: Crab PSC limits will be maintained at the BSAI trawl limited access sector level.

Option 3.2: Establish separate PSC limits for the BSAI trawl CV Pacific cod sector. Halibut PSC limit will be apportioned based on historical use (using qualifying years selected under Element 2) between the trawl CV sector and the AFA catcher processor (C/P) sector. Crab PSC limits will be apportioned based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector.

Option 3.3: Reduce PSC limit to BSAI trawl CV Pacific cod sector.

Suboption 3.3.1: Reduce halibut PSC limit by 10%; 25%; 35%.

Suboption 3.3.2: Reduce crab PSC limits by: 10%; 25%; 35%; 45%.

Red king crab Zone 1: (80% reduction from 2019 limit)

***C. opilio* Bycatch Limitation Zone: (69% reduction from 2019 limit)**

***C. bairdi* Zone 1 and Zone 2: (48% reduction from 2019 limit)**

Suboption 3.3.3: Phase in halibut PSC limit reduction over 3 years or 2 years⁹⁴. One third or one half⁹⁵ of the total halibut PSC limit reduction is implemented each year.

Option 3.4: If Element 2.5 is selected, establish separate C season halibut and crab PSC apportionments (5%-15%) before applying PSC limit reductions for the PCTC program.

Each cooperative will receive annual CQ of Pacific cod and apportionments of PSC limits based on members' qualifying catch histories (and processing histories, if applicable) to be harvested in accordance with the harvest cooperative agreement. The sector's PSC limits will be apportioned to cooperatives in proportion to its initial Pacific cod CQ apportionment and will be monitored at the cooperative level, resulting in a prohibition on directed fishing for Pacific cod (halibut PSC limit) or a prohibition on directed fishing for Pacific cod in a specified area (crab PSC limits) by that cooperative if the cooperative PSC limit apportionment is reached. PSC limits are transferable between cooperatives based on the same rules established for Pacific cod CQ.

2.9.3.1. Current halibut and crab PSC TLAS apportionment and PSC

Currently, 50 CFR §679.21(b)(2) and (e)(5) authorizes NMFS, based on Council recommendations, to establish seasonal apportionments of halibut and crab PSC limits for the BSAI TLAS fisheries to maximize the ability of the fleet to harvest the available groundfish TAC and to minimize PSC. The factors considered annually are (1) seasonal distribution of prohibited species, (2) seasonal distribution of target groundfish species relative to prohibited species distribution, (3) PSC needs on a seasonal basis relevant to prohibited species biomass and expected catches of target groundfish species, (4) expected variations in PSC rates throughout the year, (5) expected changes in directed groundfish fishing seasons, (6) expected start of fishing effort, and (7) economic effects of establishing seasonal prohibited species apportionments on segments of the target groundfish industry. Based on these criteria, the Council recommends, and NMFS approves the seasonal PSC limit apportionments to maximize harvest among fisheries and seasons while minimizing PSC.

Effective May 27, 2016, Amendment 111 to the BSAI FMP reduced the halibut PSC limits in the BSAI groundfish fisheries. The FMP amendment set the annual halibut PSC limit for the BSAI at 3,515 mt, a 21 percent reduction from the previous limit (50 CFR §679.21(b)(1)). That halibut PSC limit is further allocated to the following BSAI fishing sectors based on regulations in (50 CFR §679.21(b)(1)).

315 mt (9.0 percent) as the PSQ reserve for use by the groundfish CDQ program,

1,745 mt (49.6 percent) for the Amendment 80 sector,

⁹⁴ Council added 2 years as its preferred alternative. The addition of 2 years is within the scope of the analysis.

⁹⁵ Council added one half as its preferred alternative. The addition of one half is within the scope of the analysis.

745 mt (21.2 percent) for the BSAI TLAS, and
 710 mt (20.2 percent) for the BSAI non-trawl sector.

The halibut PSC limits assigned to the BSAI TLAS, which is composed of the trawl CV sector and the AFA C/P sector, is further divided by fishery, with 391 mt (52.5 percent) of the sector limit designated for use in the BSAI Pacific cod fishery (see Table 2-102). The apportionment of the BSAI TLAS halibut PSC limit between the different fisheries is determined during the harvest specification process. The halibut PSC limit for the trawl BSAI TLAS is an annual limit that is not apportioned by season.

Table 2-102 Final 2020 halibut PSC allowance (mt) for the BSAI TLAS

BSAI trawl limited access fisheries	Halibut (mt)
Yellowfin sole	150
Rockfish (April 15-Dec 31)	4
Pacific cod	391
Pollock/Atka mackerel/other species	200

Source: Annual specifications (2020)

In addition to the halibut PSC limits for the TLAS, both AFA CVs and AFA C/Ps, sectors that share the TLAS PSC limits, also had PSC sideboard limits established by the AFA Program. Those PSC sideboard limits, are based on the percentage of PSC limits used from 1995 through 1997 for AFA C/Ps and the percentage of PSC limits used in 1997 for the AFA CVs. Specifically, for the halibut PSC limit, the AFA trawl CV sideboard limit in the BSAI Pacific cod target fishery is capped at 887 mt and the AFA C/P limit is capped at 286 mt (Table 40 to 50 CFR part 679). For crab PSC, sideboard limits are not apportioned at target species level. Prior to the implementation of Amendment 80 in 2008, halibut and crab PSC limits were apportioned to all BSAI trawl fisheries by target fishery categories, and PSC sideboards were calculated using a historical ratio. After the implementation of Amendment 80, PSC limits for BSAI trawl fisheries were apportioned between the Amendment 80 fleet and TLAS fleet while still maintaining the calculation for PSC sideboards based on a historical ratio. As a result, the TLAS halibut PSC limit for the Pacific cod target fishery is smaller than the AFA CV sideboard PSC limit, meaning that the AFA CV sideboard limit is no longer constraining.

To minimize halibut PSC, both the trawl CV and AFA C/Ps work closely with NMFS and cooperatively manage their halibut PSC limit. The AFA CVs cooperatives utilize a Catcher Vessel Intercooperative Agreement that requires all vessels in the BS Pacific cod fishery to use halibut excluder devices, use a codend (the detachable end of the trawl net where catch accumulates) with a mesh size no smaller than 7 inches, and not fish at night when halibut PSC is higher. The agreement also includes allocation, monitoring, and compliance of the BSAI sideboard limits and PSC limits.

An indication of effort to reduce halibut PSC by the trawl CV sector is the declining trend in the sector's halibut PSC rate in the BSAI Pacific cod target fishery. Table 2-103 and Figure 2-6 provide annual PSC rates for halibut PSC for the sector from 2004 through July 28, 2021. The PSC rate is in kilograms of halibut PSC per ton of groundfish in the BSAI Pacific cod trawl CV target fishery. As seen in Figure 2-6, the annual PSC rates have trended down from a high of 16.12 in 2005 to a low of 2.54 kilograms of halibut PSC per ton of groundfish in 2021. As indicated by the declining halibut PSC rate, the trawl CV sector has increased their halibut avoidance measures to reduce halibut PSC over the years. In general, the fleet has refrained from fishing for Pacific cod at night when halibut PSC is historically higher. The fleet has also used gear modifications that allow some halibut to escape the trawl nets. Recently the fleet has also organized voluntary stand downs during periods of high halibut PSC rates such as the one organized in 2020. In 2021, the trawl CV sector agreed to operate as voluntary cooperative for the year to coordinator deliveries of Pacific cod to processors to accommodate COVID-19 pandemic-related closures and to assist in reducing halibut PSC in the Pacific cod fishery. This resulted in a low halibut PSC for the sector in the Pacific cod fishery for 2021 of 50 mt and the lowest halibut PSC rate since 2004. Overall, as

seen in the lower halibut PSC rates over the years, the efforts to reduce halibut PSC by the fleet have been successful.

Table 2-103 Historical halibut PSC rate and average halibut PSC rate of PSC for BSAI Pacific cod trawl CV target fishery from 2004 through 2021

2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2004-2019 average PSC rate*
9.76	16.12	14.97	10.83	8.17	5.96	8.61	5.83	8.99	6.74	6.18	6.96	6.61	5.26	5.08	10.52	5.16	2.54	8.18

Source: PSC_Rates(7-28-21)

*Rate is kilograms of mortality per ton of groundfish

Figure 2-6 Annual halibut PSC rate along the trend of annual halibut PSC rate

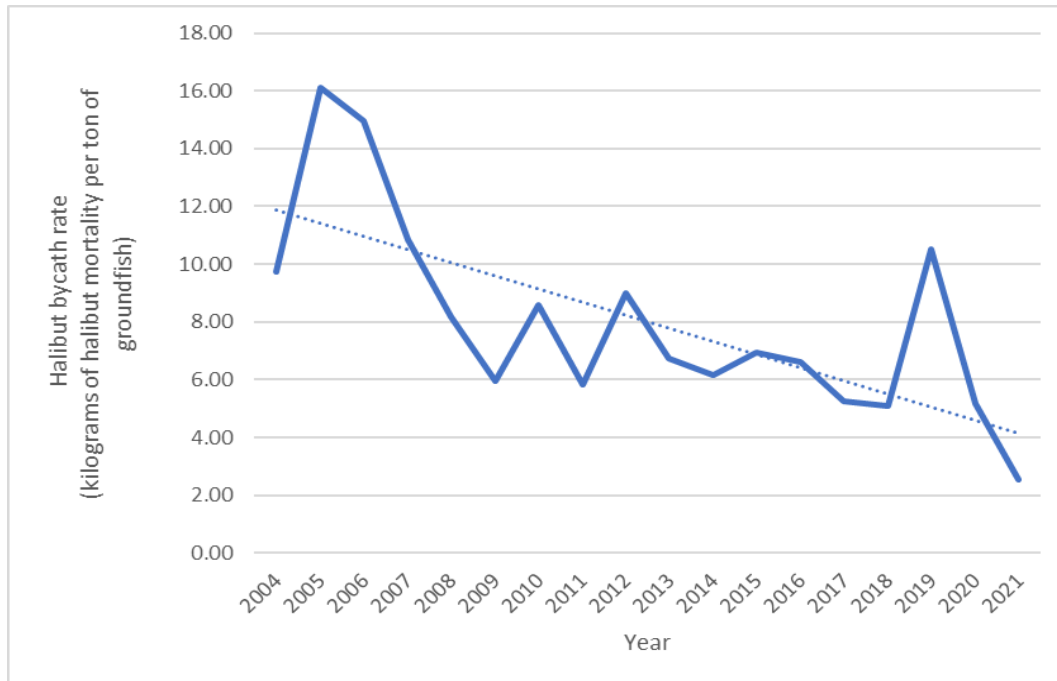


Table 2-104 provides the halibut PSC limit apportioned to the BSAI Pacific cod fishery for to all trawl vessels before 2008 and apportioned to the TLAS from 2008 through 2021. Also provided in the table is halibut PSC by trawl sector in the BSAI Pacific cod fishery from 2004 through 2021. Using the average of the annual data reported in Table 2-104, the trawl CV sector accounted for 97 percent of the halibut PSC by the trawl CV and AFA C/P sectors in the BSAI Pacific cod target fishery from 2004 through 2020, while the AFA C/P sector accounted for 3 percent of the halibut PSC. As noted above, the unusually low halibut PSC for the trawl CV sector in 2020 and 2021 BSAI Pacific cod fishery is due in part to lower Pacific cod allocations, the sector seeking to reduce halibut PSC, and impacts from the COVID-19 pandemic allowing the sector to operate under a voluntary catch sharing program. In 2020, the sector fished January 20 and 21 before organizing a sector wide stand down until February 9 due to high halibut PSC rates in the fishery. The voluntary stand down combined with the lower Pacific cod allocations likely resulted in the reduced halibut PSC of 140 mt for the 2020 fishing season. In 2021, the sector had already planned on a voluntary stand down until mid-February to avoid high halibut PSC rates that commonly occur during the late January and early February Pacific cod fishery, but due to impacts from the COVID-19 pandemic that resulted in several shoreplant closures, the sector opted also for a voluntary catch share plan. The combination of low Pacific cod allocations, a mid-February start date for fishing, and the voluntary catch share plan resulted in reduced halibut PSC to 50 mt in 2021 A and B season for the trawl CV sector.

Table 2-104 BSAI TLAS halibut PSC limit and reported halibut PSC by trawl CV and AFA trawl C/P sectors in the non-CDQ BSAI Pacific cod target fishery from 2004 through 2021 A and B season

Year	Halibut PSC limit (mt)*	Reported halibut mortality (mt)				Percent of total halibut utilized in the BSAI Pacific cod target fishery by trawl CV and AFA C/P sectors	
		Trawl CV	AFA trawl C/P	Total	Total percent utilized	Trawl CV	AFA trawl C/P
2004	1434	443	12	455	32%	97%	3%
2005	1434	596	54	650	45%	92%	8%
2006	1434	586	34	620	43%	95%	5%
2007	1334	427	25	452	34%	94%	6%
2008	585	291	2	293	50%	99%	1%
2009	508	181	2	183	36%	99%	1%
2010	453	255	1	256	57%	99%	1%
2011	453	238	2	239	53%	99%	1%
2012	453	429	0	429	95%	100%	0%
2013	453	309	1	310	68%	100%	0%
2014	453	281	8	289	64%	97%	3%
2015	453	236	4	240	53%	98%	2%
2016	391	294	10	304	78%	97%	3%
2017	391	221	17	238	61%	93%	7%
2018	391	205	10	214	55%	95%	5%
2019	391	352	9	361	92%	98%	2%
2020	391	140	3	143	37%	98%	2%
2021	300	50	^	n/a	n/a	n/a	n/a

Source: NMFS for PSC limits. AFA C/P - Pollock Conservation Cooperative Reports; Trawl CV - AKFIN, April 2020, Sector_PSC 6-29-21)2

*Prior to 2008, halibut PSC limit was apportioned to all trawl vessels.

^Pollock Conservation Cooperative Report for 2021 not yet available

Crab PSC limits includes red king crab (Zone 1), *C. opilio* (COBLZ), and *C. bairdi* (Zone 1 and Zone 2), that are specified annually based on abundance and spawning biomass and are established by regulation for the CDQ Program, Amendment 80 Program, and the BSAI TLAS, which is composed of the trawl CV and the AFA C/P sectors (679.21(e)(3)(iv)). Figure 2-7 and Figure 2-8 provide maps of Zones 1 and 2 Bristol Bay red king crab and Eastern Bering Sea tanner crab savings areas and the COBLZ. Like halibut, crab PSC limits are further apportioned by trawl fishery categories during the harvest specification process. Of the BSAI TLAS crab PSC limits, the yellowfin sole fishery receives the largest portion of the crab PSC limits followed by the Pacific cod fishery. If a specific crab PSC limit is reached by the BSAI TLAS in any trawl fishery category, the TLAS vessels subject to the limit would be required to move out of the applicable crab savings area when directed fishing in a fishery subject to that PSC limit.

Both AFA CV and AFA C/P sectors are also restricted by AFA crab PSC sideboard limits. The AFA CV crab PSC sideboard limits, which are not apportioned at the trawl fishery category, are established as 29.9 percent for red king crab Zone 1, 16.8 percent of the *C. opilio* in the COBLZ, 33 percent of the *C. bairdi* in Zone 1, and 18.6 percent of the Zone 2 *C. bairdi* each year. The AFA C/Ps crab sideboard limits, which are also not apportioned at the trawl fishery category level, are 0.7 percent for red king crab Zone 1, 15.3 percent of the *C. opilio* in the COBLZ, 14 percent of the *C. bairdi* in Zone 1, and 5 percent of the Zone 2 *C. bairdi*.

Figure 2-7 Zone 1 and 2 area for closures (red king crab and EBS Tanner crab)

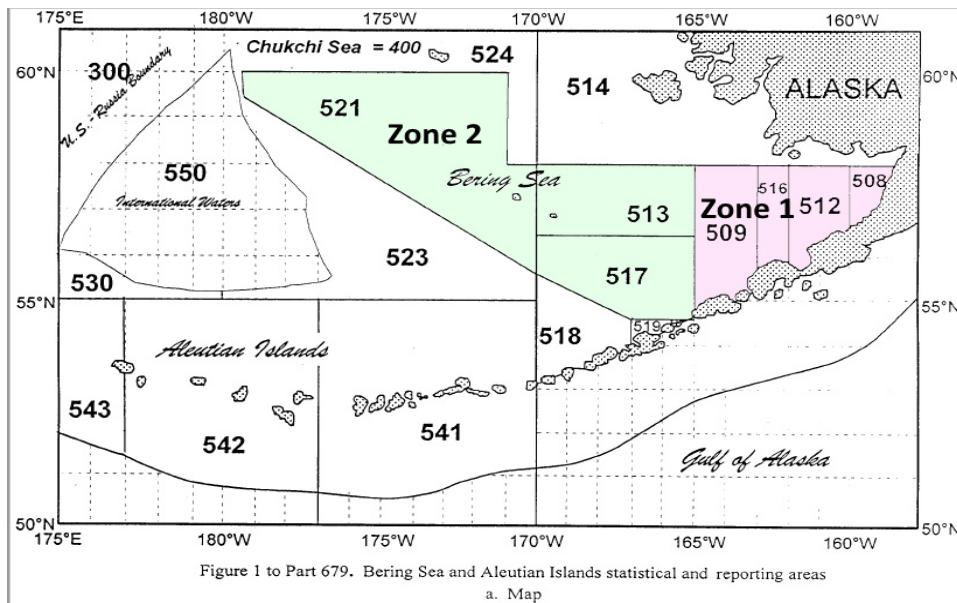


Figure 2-8 C. opilio Bycatch Limitation Zone (COBLZ)

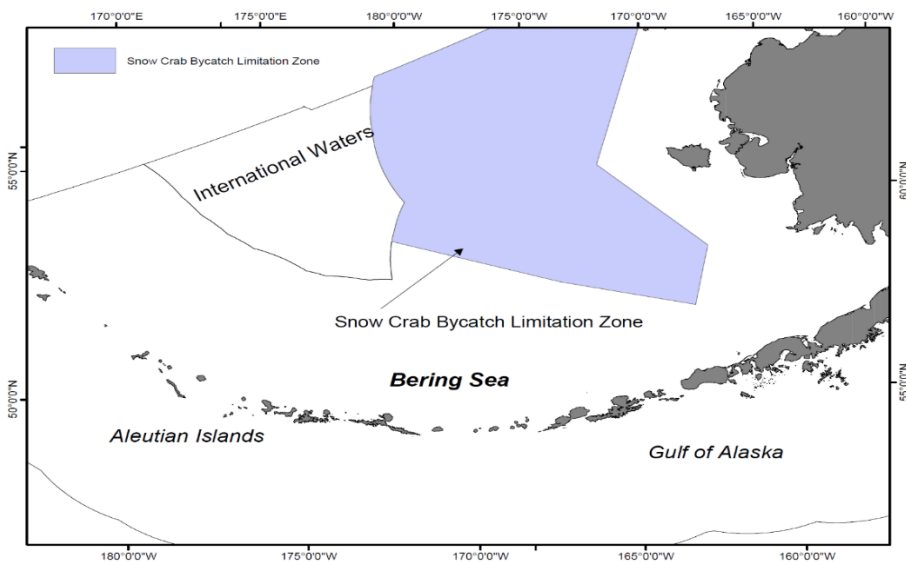


Table 2-105, Table 2-106, Table 2-107, and Table 2-108 provides the annual crab PSC allowances (animals), PSC (animals), and the percent of allowance utilized for the BSAI Pacific cod TLAS for both the trawl CV sector and the AFA C/P sector.

CAS generated crab PSC by species for the AFA C/P sector in the targeted BSAI Pacific cod fishery could not be provided since the number of AFA C/Ps participating in that fishery was less than three for all years except 2007 and 2012. However, the Pollock Conservation Cooperative reports provide annual crab PSC by species in the targeted BSAI Pacific cod fishery for the AFA C/P sector, but crab PSC is not broken out by crab saving areas.⁹⁶ Nevertheless, as indicated in Table 2-105, Table 2-106, Table 2-107, and Table 2-108 crab PSC for the AFA C/P sector is very limited throughout 2004-2019. Overall, the

⁹⁶ <https://www.npfmc.org/cooperative-reporting/>

combined annual crab PSC for both trawl CV and AFA C/P sectors is significantly lower than the crab PSC limits for the BSAI Pacific cod TLAS.

Table 2-105 Red king crab (Zone 1) PSC limit (animals), PSC (animals), and the percent of limit utilized in the target BSAI Pacific cod fishery by trawl CV and AFA C/P sectors

Year	PSC limit (animals)	Reported red king crab (Zone 1) PSC (animals)				Percent of total red king crab limit (Zone 1) utilized in the BSAI Pacific cod target fishery by trawl CV and AFA C/P sectors	
		Trawl CV	AFA C/P	Total	Total percent of limit utilized	Trawl CV	AFA trawl C/P
2004*	26,563	0	384	384	1%	0%	100%
2005*	26,563	0	75	75	0%	0%	100%
2006*	26,563	0	7	7	0%	0%	100%
2007*	26,563	0	21	21	0%	0%	100%
2008	6,000	1,165	60	1,225	20%	95%	5%
2009	6,000	0	0	0	0%	0%	0%
2010	6,000	0	25	25	0%	1%	99%
2011	6,000	1,971	51	2,022	34%	97%	3%
2012	2,954	0	0	0	0%	0%	0%
2013	2,954	0	0	0	0%	0%	0%
2014	2,954	85	0	85	3%	100%	0%
2015	2,954	51	0	51	2%	100%	0%
2016	2,954	547	13	560	19%	98%	2%
2017	2,954	280	0	280	9%	100%	0%
2018	2,954	199	0	199	7%	100%	0%
2019	2,954	466	0	466	16%	100%	0%
2020	2,954	175	0	175	6%	100%	0%
2021	2,954	25	^	n/a	n/a	n/a	n/a

Source: NMFS for PSC limits; AFA C/Ps - Pollock Conservation Cooperative Reports 2004-2020, which is not specific to Zone 1; Trawl CVs - BSAI_PCOD_(6-29-21)2

*PSC limits from 2004-2007 were for all trawl vessels, while PSC limits since 2008 were for the trawl limited access sector

^Pollock Conservation Cooperative Report for 2021 not yet available

Table 2-106 *C. opilio* (COBLZ) PSC limit (animals), PSC (animals), and the percent of limit utilized in the target BSAI Pacific cod fishery by trawl CV and AFA C/P sectors

Year	PSC limit (animals)	Reported <i>C. opilio</i> (COBLZ) PSC (animals)				Percent of total <i>C. opilio</i> crab limit (COBLZ) utilized in the BSAI Pacific cod target fishery by trawl CV and AFA C/P sectors	
		Trawl CV	AFA C/P	Total	Total percent of limit utilized	Trawl CV	AFA trawl C/P
2004*	124,736	86	1,178	1,264	1%	7%	93%
2005*	139,331	59	116	175	0%	34%	66%
2006*	184,402	12	996	1,008	1%	1%	99%
2007*	120,712	89	681	770	1%	12%	88%
2008	50,000	349	0	349	1%	100%	0%
2009	50,000	251	0	251	1%	100%	0%
2010	50,000	14	0	14	0%	0%	0%
2011	95,523	42	0	42	0%	100%	0%
2012	80,799	0	0	0	0%	0%	0%
2013	120,705	321	0	321	0%	100%	0%
2014	129,000	2,291	207	2,498	2%	92%	8%
2015	126,994	71	0	71	0%	0%	0%
2016	54,298	5	15	20	0%	24%	76%
2017	105,008	0	0	0	0%	0%	0%
2018	105,182	0	0	0	0%	0%	0%
2019	98,959	4,144	0	4,144	4%	100%	0%
2020	98,959	0	23	23	0%	0%	100%
2021	82,939	0	^	n/a	n/a	n/a	n/a

Source: NMFS for PSC limits; AFA C/Ps - Pollock Conservation Cooperative Reports 2004-2020, which is not specific to COBLZ; Trawl CVs - BSAI_PCOD_(6-29-21)2

*PSC limits from 2004-2007 were for all trawl vessels, while PSC limits since 2008 were for the trawl limited access sector

^Pollock Conservation Cooperative Report for 2021 not yet available

Table 2-107 *C. bairdi* (Zone 1) PSC limit (animals), PSC (animals), and the percent of limit utilized in the target BSAI Pacific cod fishery by trawl CV and AFA C/P sectors

Year	PSC limit (animals)	Reported <i>C. bairdi</i> (Zone 1) PSC (animals)				Percent of total <i>C. bairdi</i> crab limit (Zone 1) utilized in the BSAI Pacific cod target fishery by trawl CV and AFA C/P sectors	
		Trawl CV	AFA C/P	Total	Total percent of limit utilized	Trawl CV	AFA trawl C/P
2004*	183,112	14,313	1,218	15,531	8%	92%	8%
2005*	183,112	33,343	919	34,262	19%	97%	3%
2006*	183,112	12,107	2,803	14,910	8%	81%	19%
2007*	183,112	14,326	1,360	15,686	9%	91%	9%
2008	60,000	25,897	324	26,221	44%	99%	1%
2009	60,000	4,729	79	4,808	8%	98%	2%
2010	50,816	14,169	5	14,174	28%	0%	0%
2011	50,816	8,809	380	9,189	18%	96%	4%
2012	60,000	3,146	0	3,146	5%	100%	0%
2013	60,000	3,022	80	3,102	5%	97%	3%
2014	60,000	4,048	1,016	5,064	8%	80%	20%
2015	60,000	5,195	30	5,225	9%	0%	0%
2016	50,816	8,145	0	8,145	16%	100%	0%
2017	50,816	7,605	148	7,753	15%	98%	2%
2018	50,816	1,465	148	1,613	3%	91%	9%
2019	60,000	2,283	131	2,414	4%	95%	5%
2020	60,000	1,631	0	1,631	3%	100%	0%
2021	60,000	729	^	n/a	n/a	n/a	n/a

Source: NMFS for PSC limits; AFA C/Ps - Pollock Conservation Cooperative Reports 2004-2020, which is not specific to Zone 1; Trawl CVs - BSAI_PCOD_(6-29-21)2

*PSC limits from 2004-2007 were for all trawl vessels, while PSC limits since 2008 were for the trawl limited access sector

^Pollock Conservation Cooperative Report for 2021 not yet available

Table 2-108 *C. bairdi* (Zone 2) PSC limit (animals), PSC (animals), and the percent of limit utilized in the target BSAI Pacific cod fishery by trawl CV and AFA C/P sectors

Year	PSC limit (animals)	Reported <i>C. bairdi</i> (Zone 2) PSC (animals)				Percent of total <i>C. bairdi</i> crab limit (Zone 2) utilized in the BSAI Pacific cod target fishery by trawl CV and AFA C/P sectors	
		Trawl CV	AFA C/P	Total	Total percent of limit utilized	Trawl CV	AFA trawl C/P
2004*	324,176	29,808	1,218	31,026	10%	96%	4%
2005*	324,176	23,275	919	24,194	7%	96%	4%
2006*	324,176	42,387	2,803	45,190	14%	94%	6%
2007*	324,176	13,379	1,360	14,739	5%	91%	9%
2008	50,000	8,170	324	8,494	17%	96%	4%
2009	50,000	1,586	79	1,665	3%	95%	5%
2010	42,424	4,815	5	4,820	11%	0%	0%
2011	42,424	3,166	380	3,546	8%	89%	11%
2012	50,000	4,343	0	4,343	9%	100%	0%
2013	50,000	2,980	80	3,060	6%	97%	3%
2014	50,000	4,109	1,016	5,125	10%	80%	20%
2015	50,000	4,650	30	4,680	9%	0%	0%
2016	42,424	2,805	0	2,805	7%	100%	0%
2017	34,848	1,467	148	1,615	5%	91%	9%
2018	42,424	472	148	620	1%	76%	24%
2019	49,999	314	131	445	1%	71%	29%
2020	49,999	538	0	538	1%	100%	0%
2021	50,000	99	^	n/a	n/a	n/a	n/a

Source: NMFS for PSC limits; AFA C/Ps - Pollock Conservation Cooperative Reports 2004-2020, which is not specific to Zone 2; Trawl CVs - BSAI_PCOD_(6-29-21)2

*PSC limits from 2004-2007 were for all trawl vessels, while PSC limits since 2008 were for the trawl limited access sector

^Pollock Conservation Cooperative Report for 2021 not yet available

2.9.3.2. Apportionment of halibut and crab PSC limits to trawl CV sector

Typically, in other Council developed catch share programs, PSC limits along with target species are apportioned at the cooperative level. With each cooperative getting their own portion of the halibut and crab PSC limit, the cooperatives no longer would be limited by the PSC usage of vessels outside the cooperatives closing their fishery prematurely in the case of halibut or requiring cooperative vessels to leave a specific crab savings area in the case of crab. In addition, this approach may create incentives to keep PSC rates low, as this would allow cooperatives to continue harvesting Pacific cod when other cooperatives reach their limit. Depending on the program's structure, it would also allow cooperative members to transfer PSC limits, and individuals could be compensated for low PSC usage.

Under the PCTC Program, halibut and crab PSC limits would continue to be managed at the TLAS level via the current regulations (50 CFR §679.21(b)(1) and (50 CFR §679.21(e)(3)(iv)) and at the fishery level during harvest specifications process. Following the apportionment of halibut and crab PSC at the fishery level via the harvest specifications, the PSC apportioned to the Pacific cod fishery would then be apportioned to the trawl CV sector and the AFA C/P sector based on the approach determined in the PCTC Program (Options 3.1 and 3.2). This approach would provide greater flexibility for the Council to adjust the halibut and crab PSC limits for their Pacific cod fishery relative to the other fisheries to accommodate changes to the different fisheries.

A PCTC Program cooperative would be prohibited to use more halibut PSC or crab PSC than was assigned as the cooperative PSC limit. Each member of the cooperative would be jointly and severally liable for exceeding PCTC Program cooperative PSC limits. If a cooperative reaches the PSC limit for halibut, the cooperative is responsible for prohibiting its members from directed fishing for Pacific cod in the BSAI. For crab PSC limits, the cooperative would be responsible for preventing its members from directed fishing for Pacific cod inside the crab savings area associated with the crab PSC limit that was reached. Any remaining Pacific cod CQ must be fished outside of that crab savings area. If the

cooperative receives an intercooperative transfer of additional halibut or crab PSC, the cooperative can continue to fish up to their new limit. If there is a PSC limit overage and it is not covered by an intercooperative transfer or a post-delivery transfer, the cooperative overage would be referred to OLE.

2.9.3.2.1. Option 3.1 Crab PSC

Under Option 3.1, crab PSC limits would remain at the BSAI Pacific cod TLAS level. As a result, NMFS would not apportion crab PSC limits at the individual cooperative level, because both trawl CV and AFA C/P sectors share the TLAS crab PSC limits. This option could result in the trawl CV sector and the AFA C/P sector negotiating crab PSC limit apportionments for the Pacific cod target fishery via an agreement to help ensure neither sector's Pacific cod fishery is constrained. Under an agreement, both sectors would have their own crab PSC allowances established and enforced through civil contracts. If the TLAS crab PSC limit is reached for the associated zone, that crab PSC area would be closed to directed fishing for the TLAS and the vessels would be required to target Pacific cod in other areas of the BS and AI. Persons with excessive PSC usage could be held accountable under the civil contracts for damages to other members.

Although leaving crab PSC limits at the TLAS Pacific cod fishery level allows some flexibility for both the trawl CV and AFA C/P sectors to accommodate changes in crab PSC needs, there is the potential that one or both sectors could try to apply leverage in negotiating higher crab PSC limits for their sector. This could jeopardize some of the potential benefits of cooperative fishing for one of the sectors. If, for example the two sectors are not able to reach an agreement on the crab PSC apportionments, it is possible that both sectors could be required to leave the crab saving area prematurely due to exceeding the crab PSC limit for that crab saving area established for the Pacific cod fishery. However, unlike halibut PSC, most crab PSC limits are not constraining which reduces negotiating leverage. The one exception is red king crab (Zone 1), which could require one or both sectors to leave Zone 1 if they reach the PSC limit.

Finally, given that TLAS apportionments of crab PSC limits between the different trawl fishery categories could also vary from year-to-year based on industry negotiations during harvest specifications process, crab PSC limits apportioned to the Pacific cod fishery could potentially vary enough to negatively influence cooperative fishing. This would be especially true for red king crab (Zone 1). However, the value of the Pacific cod fishery will likely provide incentives to ensure that sufficient PSC is allocated to the fishery to prevent it from requiring a sector to leave Zone 1. Stakeholders in the Pacific cod fishery that also participate in other TLAS fisheries may also be aware that reductions in crab PSC usage will be realized under the PCTC Program. If current levels of some crab PSC limits are not anticipated to constrain their PCTC Program cooperative, they could negotiate during the annual harvest specifications process to reduce the amount of crab assigned to the Pacific cod fishery and increase the amount of crab PSC assigned to other TLAS fisheries they participate where harvesting the TAC could be limited by crab PSC.

2.9.3.2.1. Option 3.2 Establish separate PSC limits for BSAI trawl CV sector

Option 3.2 combined with Suboptions 3.3.1 and 3.3.2 would establish separate halibut and crab PSC limits for the BSAI trawl CV Pacific cod sector for both the trawl CV and AFA C/P sectors. Halibut PSC limit apportionment would be based on historical use by the two sectors, whereas crab PSC limits would be based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector. Of the halibut and crab PSC limits, apportioning halibut PSC amongst the trawl CV sector and the AFA C/P sector is likely more crucial for each cooperative to have greater control over their own fishing plan. For example, in 2012 and 2019, over 90 percent of the halibut PSC limit apportioned to the BSAI TLAS was utilized. Without apportioning the BSAI TLAS halibut PSC limits between the two sectors, those years with high halibut PSC could negatively influence cooperative fishing and thus reduce some of the benefits of the PCTC Program, especially if the high rates of PSC usage are unavoidable due to changes in certain biological conditions. However, as stated earlier, if the high rates are a result of the fishing behavior by certain individuals, they could be held accountable through an intercooperative agreement.

Apportioning halibut and crab PSC limits along with a target species at the cooperative level is typical in other Council-developed LAPPs. With each cooperative receiving their own apportionment of halibut and crab PSC allowance, the cooperatives no longer are constrained by the halibut and crab PSC usage of vessels outside their cooperatives. Moreover, it may create individual incentives to keep halibut and crab PSC rates low, as this would provide cooperatives the ability to continuing harvesting Pacific cod. Participants with exclusive shares will have time to be more selective in determining when, where, and how to harvest their allocation and thereby potentially reduce their halibut and crab PSC usage and rates. Reductions in halibut PSC usage and PSC rates from LAPPs is apparent in the Amendment 80 Program and the Central GOA Rockfish Program. As noted in the 2014 Amendment 80 program review (NPFMC, 2014), halibut PSC and PSC rate in the Amendment 80 fisheries has declined since implementation of Amendment 80 program in 2008. The 2017 Central GOA Rockfish Program Review (NPFMC, 2017) notes that PSC and PSC rates have also declined under the Pilot Program and the Rockfish Program. Halibut PSC rates before the Pilot Program ranged from 1.5 to 3.0 kg of halibut per metric ton of total groundfish. After the Pilot Program was implemented, the halibut PSC rates decreased to about 0.25 kg of halibut per metric ton of total groundfish. This indicates that the structure of the LAPP allowed harvesters to implement fishing strategies to reduce halibut PSC rates. The actual reduction in PSC usage that will occur under the PCTC Program is not known. In addition to the inherent reductions in PSC that may be attainable through cooperative management, the Council is considering alternatives that specifically create PSC limit reductions for both halibut and crab.

Halibut PSC limits

Table 2-109 presents the average historical halibut PSC usage by the trawl CV and AFA C/P sector in relation to the total BSAI Pacific cod halibut PSC limit apportionment that was used by the two sectors during the qualifying years from Element 2, Options 2.2.1-2.2.3. Of the total halibut PSC limit apportioned to the BSAI Pacific cod TLAS during 2014 through 2019 (Element 2, Option 2.2.1) that was used by the two sectors, the trawl CV sector accounted for 96 percent and AFA C/P sector account for four percent. During 2009-2019 (Element 2, Option 2.2.2), the trawl CV's historical portion of the total halibut PSC usage in the Pacific cod fishery was 98 percent, while the AFA C/P's historical portion was two percent. Finally, during 2004-2019 (Element 2, Option 2.2.3), the trawl CV's historical portion of the total halibut PSC usage in the Pacific cod fishery was 97 percent, while the AFA C/P sector's historical portion was three percent.

Given the historical Pacific cod harvests and halibut PSC usage by the trawl CV sector in the BSAI Pacific cod fishery, the halibut PSC limit allocation percentages under this option appear to be sufficient to allow the harvest of the trawl CV sector's BSAI Pacific cod allocation. Assuming 391 mt of halibut PSC allowance is apportioned to the BSAI TLAS for Pacific cod, the trawl CV sector, using percentages calculated from this option (Table 2-109), would range from 377 mt to 382 mt of the halibut allowance. In relation to the halibut PSC used by the trawl CV sector in the Pacific cod fishery, they would have been constrained only once in 2012 since 2008. In 2012, the trawl CV sector reported 429 mt of halibut PSC.

Although in most years the AFA C/P sector would also be apportioned sufficient halibut PSC to allow the sector to fully harvest its allocation of BSAI Pacific cod, there is some potential the sector could be constrained by halibut PSC limits. For example, the sector reported 17 mt of halibut PSC in 2017, which is greater than halibut PSC limit that would be apportioned to the sector under this option. However, there is some potential that a specific apportionment of halibut PSC to the AFA C/P sector that is not shared with the trawl CV sector could facilitate improved management of halibut PSC enough to reduce the potential for constrained AFA C/P BSAI Pacific cod target fishery in most cases.

Table 2-109 Percent of halibut PSC apportioned to the trawl CV and AFA C/P sectors while targeting BSAI Pacific cod based on Element 2, Options 2.2.1-2.2.3 qualifying years

Qualifying years	Trawl CV halibut PSC limit		AFA C/P halibut PSC limit	
	Historical percentage	Sector halibut PSC apportionment based on 391 halibut limit	Historical percentage	Sector halibut PSC apportionment based on 391 halibut limit
Option 2.2.1 (2014-2019)	96%	377	4%	14
Option 2.2.2 (2009-2019)	98%	382	2%	9
Option 2.2.3 (2004-1019)	97%	379	3%	12

Proportional based crab PSC limits

Recognizing the limitations of a usage-based crab apportionment,⁹⁷ the Council, in June 2021, moved to apportion crab PSC limits based on the portion of BSAI Pacific cod allocated to the two sectors. In this case, the AFA C/P sector would be allocated 9.4 percent of the crab PSC limits since the sector’s percent of BSAI Pacific cod amongst the AFA C/P sector and the trawl CV sector is 9.4 percent. The trawl CV sector therefore would be allocated the remaining 90.6 percent of the crab PSC limits for the Pacific cod fishery since its portion of the BSAI Pacific cod allocation is 90.6 percent. Table 2-110 shows the crab PSC limits for the BSAI Pacific cod fishery based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector. Looking first at red king crab (Zone 1) PSC limit, the trawl CV sector would be apportioned 2,676 red king crab (Zone 1) animals, while the AFA C/P sector would be apportioned 278 red king crab (Zone 1) PSC animal limit using the 2019 red king crab PSC limit of 2,954 animals for the BSAI Pacific cod fishery. For *C. opilio* (COBLZ), the trawl CV sector would be apportioned 89,657 animals and the AFA C/P sector would be apportioned 9,302 animals based on the 2019 *C. opilio* (COBLZ) crab PSC limit of 98,959 animals for the BSAI Pacific cod fishery. *C. bairdi* (Zone 1) PSC limit for the trawl CV sector using 2019 *C. bairdi* (Zone 1) crab PSC limit of 60,000 animals for the BSAI Pacific cod fishery would result in 54,360 animals for the trawl CV sector and 5,640 animals for the AFA C/P sector. For *C. bairdi* (Zone 2) PSC limits using the 2019 *C. bairdi* (Zone 2) crab PSC limit of 49,999 animals for the BSAI Pacific cod fishery, the trawl CV sector would be apportioned 45,299 animals and the AFA C/P sector would be apportioned 4,700 animals. If the crab PSC limit for a sector is reached for the crab savings area, Pacific cod directed fishing in the area by the sector is closed and the sector would be required to target Pacific cod in other areas of the BS and AI if those areas are not closed to directed fishing due to other crab PSC closures or the Pacific cod TAC having been reached for the area.

⁹⁷ A drawback of relying on crab PSC usage to apportion crab PSC between the trawl CV and AFA C/P sector is it rewards sectors with high PSC rates relative to other sectors. For example, although the trawl CV and AFA C/P sector have never exceeded the red king crab (Zone 1) PSC limit, the trawl CV sector’s historical red king crab PSC usage is nearly 100 percent of the combined red king crab (Zone 1) PSC usage in the Pacific cod fishery. As a result, basing crab PSC apportionment on PSC usage results in the trawl CV sector being apportioned nearly all the red king crab (Zone 1) PSC limit for the Pacific cod fishery while the AFA C/P sector would be apportioned a very small red king crab (Zone 1) PSC limit.

Table 2-110 Crab PSC limits for BSAI Pacific cod fishery based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector

Pacific cod allocation percentage	Sector PSC apportionment	Pacific cod allocation percent	Sector PSC apportionment
Trawl CV red king crab (Zone 1) PSC limit based on 2019 PSC limit of 2,954 animals		AFA C/P red king crab (Zone 1) PSC limit based on 2019 PSC limit of 2,954 animals	
90.6%	2,676	9.4%	278
Trawl CV <i>C. opilio</i> crab (COBLZ) PSC limit based on a 2019 PSC limit of 98,959 animals		AFA C/P <i>C. opilio</i> crab (COBLZ) PSC limit based on a 2019 limit of 98,959 animals	
90.6%	89,657	9.4%	9,302
Trawl CV <i>C. bairdi</i> crab (Zone 1) PSC limit based on a 2019 PSC limit of 60,000 animals		AFA C/P <i>C. bairdi</i> crab (Zone 1) PSC limit based on a 2019 PSC limit of 60,000 animals	
90.6%	54,360	9.4%	5,640
Trawl CV <i>C. bairdi</i> crab (Zone 2) PSC limit based on a 2019 PSC limit of 49,999 animals		AFA C/P <i>C. bairdi</i> crab (Zone 2) PSC limit based on a 2019 PSC limit of 49,999 animals	
90.6%	45,299	9.4%	4,700

Usage based Crab PSC limits

Crab PSC limits based on the use of crab PSC by the trawl CV sector and the AFA C/P sector was also analyzed for comparison. Table 2-111 presents the average historical red king crab (Zone 1), *C. opilio* (COBLZ), *C. bairdi* (Zone 1), and *C. bairdi* (Zone 2) PSC use between the trawl CV and AFA C/P sector in relation to the total BSAI Pacific cod PSC apportioned during the qualifying years from Element 2, Options 2.2.1-2.2.3. Of the total red king crab (Zone 1) PSC apportioned to the BSAI Pacific cod TLAS during the three different qualifying years, the trawl CV sector portion would range from 88.2 percent to 99.2 percent, while the AFA C/P sector portion would range from 0.8 percent to 11.8 percent depending on the qualifying years selected. Applying these apportionment percentages to the 2019 PSC limit would result a range of 2,606 to 2,931 red king crab to the trawl CV sector and 23 to 384 red king crab to the AFA C/P sector. Note that using the Pollock Conservation Cooperative report for crab PSC data to avoid reporting confidential data results in slightly higher AFA C/P apportionment percentages for all crab PSC limits when compared with zone specific AKFIN data. This is due to cooperative reported crab PSC being BSAI wide and not zone specific.

For the *C. opilio* (COBLZ) PSC limit, the trawl CV percent of the BSAI Pacific cod fishery apportionment would range from 70.8 percent to 97 percent, while the AFA C/P portion would range from 3 percent to 29.2 percent. Applying these apportionment percentages to the 2019 PSC limit for *C. opilio* would result in a range of 70,038 to 95,974 *C. opilio* crab (COBLZ) to the trawl CV sector and 2,985 to 28,921 *C. opilio* crab (COBLZ) to the AFA C/P sector. These PSC limits would likely not constrain the trawl CV sector or the AFA C/P sector.

Looking at *C. bairdi* (Zone 1) PSC limit, the trawl CV percent of the BSAI Pacific cod fishery apportionment would range from 95 percent to 96.9 percent, while the AFA C/P portion would range from 3.1 percent to five percent, which when utilizing 2019 PSC limit results in a range of 56,972 to 58,128 animals apportioned to the trawl CV sector and between 1,872 and 2,925 animals apportioned to the AFA C/P sector. For the trawl CV sector, the history of PSC since 2004 indicates that the range of apportionments would be sufficient to not constrain the sector while targeting BSAI Pacific cod. As for the AFA C/P sector, PSC of *C. bairdi* (Zone 1) since 2004 indicates that the estimated apportionment would have constrained the sector on one occasion. However, except for 2014, *C. bairdi* (Zone 1) PSC in

the BSAI Pacific cod target fishery for the AFA C/P sector since 2008 has been less than 400 animals, which would not have constrained the sector based on above estimated apportionments.

Zone 2 *C. bairdi* PSC limit for the BSAI Pacific cod fishery apportionment would range from 90.4 percent to 94.5 percent, while the AFA C/P sector would range from 5.5 percent to 9.6 percent. Utilizing the 2019 PSC limit for *C. bairdi* (Zone 2) would yield an apportionment of 45,182 to 47,236 animals to the trawl CV sector and 2,763 to 4,817 animals to the AFA C/P sector for use in the BSAI Pacific cod fishery. Except for a few earlier years, these apportionment estimates for *C. bairdi* (Zone 2) appear to be sufficient to not constrain the sectors while targeting BSAI Pacific cod.

Table 2-111 Percent of red king crab (Zone 1), *C. opilio* crab (COBLZ), *C. bairdi* crab (Zone 1), and *C. bairdi* crab (Zone 2) PSC limit apportion by the trawl CV and AFA C/P sectors while targeting BSAI Pacific cod based on Element 2, Options 2.2.1-2.2.3 qualifying years

Qualifying years	Historical percentage ¹	Sector PSC apportionment based	Historical percentage ²	Sector PSC apportionment
	Trawl CV red king crab (Zone 1) PSC limit based on 2019 PSC limit of 2,954 animals		AFA C/P red king crab (Zone 1) PSC limit based on 2019 PSC limit of 2,954 animals	
Option 2.2.1 (2014-2019)	99.2%	2,931	0.8%	23
Option 2.2.2 (2009-2019)	97.6%	2,883	2.4%	71
Option 2.2.3 (2004-1019)	88.2%	2,606	11.8%	348
	Trawl CV <i>C. opilio</i> crab (COBLZ) PSC limit based on a 2019 PSC limit of 98,959 animals		AFA C/P <i>C. opilio</i> crab (COBLZ) PSC limit based on a 2019 limit of 98,959 animals	
Option 2.2.1 (2014-2019)	96.7%	95,696	3.3%	3,263
Option 2.2.2 (2009-2019)	97.0%	95,974	3.0%	2,985
Option 2.2.3 (2004-1019)	70.8%	70,038	29.2%	28,921
	Trawl CV <i>C. bairdi</i> crab (Zone 1) PSC limit based on a 2019 PSC limit of 60,000 animals		AFA C/P <i>C. bairdi</i> crab (Zone 1) PSC limit based on a 2019 PSC limit of 60,000 animals	
Option 2.2.1 (2014-2019)	95.1%	57,075	4.9%	2,925
Option 2.2.2 (2009-2019)	96.9%	58,128	3.1%	1,872
Option 2.2.3 (2004-1019)	95.0%	56,972	5.0%	3,028
	Trawl CV <i>C. bairdi</i> crab (Zone 2) PSC limit based on a 2019 PSC limit of 49,999 animals		AFA C/P <i>C. bairdi</i> crab (Zone 2) PSC limit based on a 2019 PSC limit of 49,999 animals	
Option 2.2.1 (2014-2019)	90.4%	45,182	9.6%	4,817
Option 2.2.2 (2009-2019)	93.8%	46,917	6.2%	3,082
Option 2.2.3 (2004-1019)	94.5%	47,236	5.5%	2,763

¹Trawl CV historical percentage is based on AKFIN file BSAI_PCOD(6-29-21)2

²AFA C/P historical percentage is based on reported crab PSC from Pollock Conservation Cooperative Reports 2004-2019, which is not specific to zone or COBLZ.

2.9.3.3. Suboptions 3.3.1, 3.3.2, and 3.3.3 – Reduced halibut and crab PSC limit apportionment

Suboption 3.3.1 would reduce allocations of halibut PSC limits to the trawl CV sector for use in the BSAI Pacific cod target fishery by 10 to 35 percent. Suboption 3.3.2 would reduce the allocation of crab PSC limits to the trawl CV sector for use in the BSAI Pacific cod fishery by 10 to 45 percent. Suboption 3.3.3 would phase in the PSC limit reduction over three years at one-third of the total reduction each year. Although not specifically stated in Element 3, is it the Council’s intent that any unassigned halibut and crab PSC limits after reductions via Suboptions 3.3.1 or 3.3.2 cannot be applied to the AFA C/P sector for the BSAI Pacific cod fishery or utilized for other TLAS fisheries. The PSC limit reductions are to remain in the water and may contribute to the overall halibut and crab biomass available for future recruitment or

harvest. In addition, language in the Option 3.2 makes it clear that the reductions in the halibut and crab PSC limits allocated to the trawl CV sector’s Pacific cod fishery do not affect the AFA C/P sector’s Pacific cod halibut or crab PSC limits.

Halibut PSC limit reductions

Table 2-112 shows halibut PSC limits allocated to the trawl CV sector for use in the BSAI Pacific cod target fishery at the different percent reductions (after removing the historical usage by the AFA C/P sector). Considering a 10 percent halibut PSC limit reduction, the trawl CV sector would receive between 86 percent and 88 percent of the halibut PSC limit apportioned for the sector’s BSAI Pacific cod fishery depending on the catch history years selected. Assuming the current 391 mt halibut PSC apportionment to the BSAI Pacific cod TLAS, the trawl CV sector would be apportioned, at a 10 percent reduction in the halibut PSC limit, between 339 mt and 344 mt of the halibut PSC for use in their BSAI Pacific cod target fishery. At a 10 percent reduction in the halibut PSC limit, the sector would have been constrained in 2012 and 2019. Looking at 25 percent halibut PSC limit reduction, the trawl CV sector would receive between 72 percent and 74 percent of the halibut PSC limit apportioned to the BSAI Pacific cod fishery. In relation to the 391 mt halibut PSC that is apportioned to the BSAI Pacific cod TLAS, the trawl CV sector would be allocated between 283 mt to 287 mt of their halibut PSC for use in the BSAI Pacific cod target fishery. At a 25 percent reduction in halibut PSC, the sector would have been constrained in 2008, 2012, 2013, and 2019. Finally, at a 35 percent reduction in the halibut PSC limit, the trawl CV sector would be apportioned between 245 mt to 248 mt of halibut PSC limit to the trawl CV sector for use in the BSAI Pacific cod fishery. Historically, the trawl CV sector while targeting BSAI Pacific cod would have been constrained 11 years out of the 16 years from 2004 through 2019.

Table 2-112 Reductions in halibut PSC apportionments for trawl CV sector for use in the BSAI Pacific cod target fishery based on a 391 mt halibut PSC limit for the Pacific cod fishery

Qualifying years	Historical percentage	10% of the halibut PSC allocation to the trawl CV sector	15% of the halibut PSC allocation to the trawl CV sector	20% of the halibut PSC allocation to the trawl CV sector	25% of the halibut PSC allocation to the trawl CV sector	35% of the halibut PSC allocation to the trawl CV sector
Option 2.2.1 (2014-2019)	96%	86%	82%	77%	72%	62%
Option 2.2.2 (2009-2019)	98%	88%	83%	78%	74%	64%
Option 2.2.3 (2004-1019)	97%	87%	82%	78%	73%	63%
Qualifying years	Sector halibut PSC apportionment based on 391	10% of the halibut PSC allocation (mt)	15% of the halibut PSC allocation (mt)	20% of the halibut PSC allocation (mt)	25% of the halibut PSC allocation (mt)	35% of the halibut PSC allocation (mt)
Option 2.2.1 (2014-2019)	377	339	320	301	283	245
Option 2.2.2 (2009-2019)	382	344	325	306	287	248
Option 2.2.3 (2004-1019)	379	342	323	304	285	247

Proportional based crab PSC limit reductions

Table 2-113 provides crab PSC limits allocated to the trawl CV sector for use in the BSAI Pacific cod target fishery at the different percent reductions. Starting with red king crab (Zone 1) using a 2,954 animal PSC limit and after accounting for the AFA C/P sector apportionment, a 10 percent PSC limit reduction would result in 2,409 animals for the trawl CV sector in the target BSAI Pacific cod, while a 45 percent reduction would result in 1,472 animals. At a 45 percent reduction for red king crab (Zone 1), sector vessels while targeting Pacific cod in Zone 1 could be constrain under cooperative management. As noted in Table 2-105, in 2011, the trawl CV sector reported 1,971 animals while targeting BSAI Pacific cod in Zone 1 which would have required the sector to move out of Zone 1 (see Figure 2-7) to continue targeting Pacific cod. The next highest red king crab (Zone 1) PSC was in 2008 at 1,165 animals but is less than the 45 percent reduction of 1,472 animals. Despite the trawl CV sector exceeding a red king crab (Zone 1) PSC limit only once during 2004 through 2021, there is the potential that trawl CV cooperatives could be constrained by the red king crab (Zone 1) PSC limit and thereby requiring cooperative vessels to fish outside of Zone 1 for their remaining BSAI Pacific cod CQ. Two factors that could further contribute to constraining red king crab (Zone 1) PSC limits are the potential use of pot gear to harvest BSAI Pacific

cod CQ (Element 14) and apportioning an amount of red king crab (Zone 1) PSC limit to the C season trawl CV limited access fishery (Option 3.4). Although not include as an option at this point, the Council could choose to manage this potentially constraining PSC limit using an overall trawl Pacific cod CV sector limit rather than an individual cooperative limit. This approach could provide greater flexibility for cooperatives to manage this potential constraining PSC limit by not closing Zone 1 crab savings area at the cooperative level. The impacts of PSC limit reductions for red king crab (Zone 1) along with the use of pot gear to harvest CQ, a C season apportionment of red king crab (Zone 1) PSC limit (Option 3.4), and the use of inter-cooperative level management for constraining PSC are all taken into consideration in Section 2.10.

Utilizing the 2019 Pacific cod TLAS *C. opilio* crab (COBLZ) limit of 98,959 animals, the trawl CV sector would be allocated between 80,691 at a 10 percent PSC limit reduction, while at a 45 percent PSC reduction the sector limited would be 49,311 animals. Relative to the historical *C. opilio* crab (COBLZ) PSC since 2004, the sector would likely not be constrained while fishing in the COBLZ at the 10 percent or at the 45 percent PSC limit reduction (see Table 2-106).

Utilizing the 2019 Pacific cod TLAS *C. bairdi* crab (Zone 1) limit of 60,000 animals, the trawl CV sector would be allocated 48,924 animals at a 10 percent PSC limit reduction, while at a 45 percent PSC limit reduction the sector would be allocated 29,898 animals. Given the low PSC of *C. bairdi* crab (Zone 1) by the trawl CV sector while targeting BSAI Pacific cod since 2009, even at a 45 percent PSC limit reduction, the trawl CV sector would likely be unconstrained while targeting BSAI Pacific cod in Zone 1 (see Table 2-107).

Utilizing the 2019 Pacific cod TLAS *C. bairdi* crab (Zone 2) limit of 49,999 animals, the trawl CV sector would be allocated 40,769 animals at a 10 percent PSC limit reduction, while at a 45 percent PSC limit reduction the sector would be allocated 24,915 animals. Given the low PSC of *C. bairdi* crab (Zone 2) by the trawl CV sector while targeting BSAI Pacific cod since 2008, even at a 45 percent PSC limit reduction, the trawl CV sector would likely be unconstrained while targeting BSAI Pacific cod in Zone 2 (see Table 2-108).

Table 2-113 Reductions in crab PSC limits (Pacific cod proportion based) for trawl CV sector for use in the BSAI Pacific cod target fishery

Pacific cod allocation percentage	Sector PSC apportionment (animals)	10% of the allocation to trawl CV sector	15% of the allocation to trawl CV sector	20% of the allocation to trawl CV sector	25% of the allocation to trawl CV sector	35% of the allocation to trawl CV sector	45% of the allocation to trawl CV sector
Trawl CV red king crab (Zone 1) PSC limit based on 2019 PSC limit of 2,954 animals							
90.6%	2,676	2,409	2,275	2,141	2,007	1,740	1,472
Trawl CV <i>C. opilio</i> crab (COBLZ) PSC limit based on a 2019 PSC limit of 98,959 animals							
90.6%	89,657	80,691	76,208	71,725	67,243	58,277	49,311
Trawl CV <i>C. bairdi</i> crab (Zone 1) PSC limit based on a 2019 PSC limit of 60,000 animals							
90.6%	54,360	48,924	46,206	43,488	40,770	35,334	29,898
Trawl CV <i>C. bairdi</i> crab (Zone 2) PSC limit based on a 2019 PSC limit of 49,999 animals							
90.6%	45,299	40,769	38,504	36,239	33,974	29,444	24,915

Usage based crab PSC limit reductions

Crab PSC limit reductions in combination with a usage-based calculation is provided below. Table 2-114 shows red king crab (Zone 1) PSC limits (usage based) that would be established for the trawl CV sector for use in the BSAI Pacific cod target fishery (after removing the historical usage by the AFA C/P sector). Utilizing the 2019 Pacific cod TLAS red king crab (Zone 1) limit of 2,954 animals, the trawl CV sector at a 10 percent PSC limit reduction would be limited to between 2,346 to 2,638 animals, while at a 45 percent PSC limit reduction, the sector would be limited to between 1,433 to 1,612 animals. Given the low red king crab (Zone 1) PSC limit, at high red king crab PSC limit reductions, the trawl CV sector could be constrained while targeting BSAI Pacific cod in Zone 1(see Table 2-105).

Table 2-114 Reductions in red king crab PSC limits (usage based) for trawl CV sector for use in the BSAI Pacific cod target fishery

Qualifying years	Red king crab historical percentage	10% of the red king crab PSC allocation to the trawl CV sector	15% of the red king crab PSC allocation to the trawl CV sector	20% of the red king crab PSC allocation to the trawl CV sector	25% of the red king crab PSC allocation to the trawl CV sector	35% of the red king crab PSC allocation to the trawl CV sector	45% of the red king crab PSC allocation to the trawl CV sector
Option 2.2.1 (2014-2019)	99%	89%	84%	79%	74%	64%	55%
Option 2.2.2 (2009-2019)	98%	88%	83%	78%	73%	63%	54%
Option 2.2.3 (2004-1019)	88%	79%	75%	71%	66%	57%	49%
Qualifying years	Red king crab PSC apportionment based on a limit of 2,954 animals	10% of the red king crab PSC allocation (animals)	15% of the red king crab PSC allocation (animals)	20% of the red king crab PSC allocation (animals)	25% of the red king crab PSC allocation (animals)	35% of the red king crab PSC allocation (animals)	45% of the red king crab PSC allocation (animals)
Option 2.2.1 (2014-2019)	2,931	2,638	2,491	2,344	2,198	1,905	1,612
Option 2.2.2 (2009-2019)	2,883	2,594	2,450	2,306	2,162	1,874	1,585
Option 2.2.3 (2004-1019)	2,606	2,346	2,215	2,085	1,955	1,694	1,433

Table 2-115 provides *C. opilio* crab (COBLZ) PSC limit allocation to the trawl CV sector for use in the BSAI Pacific cod target fishery (after removing the historical usage by the AFA C/P sector). Utilizing the 2019 Pacific cod TLAS *C. opilio* crab (COBLZ) limit of 98,959, the trawl CV sector would be allocated between 63,034 to 86,377 animals at a 10 percent PSC limit reduction, while at a 45 percent PSC limit reduction for the sector would be 38,521 to 52,786 animals. Relative to the historical *C. opilio* crab (COBLZ) PSC since 2004, the sector would likely not be constrained from fishing in the COBLZ at the 10 percent or at the 45 percent PSC limit reduction (see Table 2-106).

Table 2-115 Reductions in *C. opilio* crab (COBLZ) PSC limits (usage based) for trawl CV sector for use in the BSAI Pacific cod target fishery

Qualifying years	<i>C. opilio</i> crab (COBLZ) historical percentage	10% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector	15% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector	20% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector	25% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector	35% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector	45% of the <i>C. opilio</i> crab (COBLZ) PSC allocation to the trawl CV sector
Option 2.2.1 (2014-2019)	97%	87%	82%	77%	73%	63%	53%
Option 2.2.2 (2009-2019)	97%	87%	82%	78%	73%	63%	53%
Option 2.2.3 (2004-1019)	71%	64%	60%	57%	53%	46%	39%
Qualifying years	<i>C. opilio</i> crab (COBLZ) PSC apportionment based on a limit of 98,959 animals	10% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)	15% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)	20% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)	25% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)	35% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)	45% of the <i>C. opilio</i> crab (COBLZ) PSC allocation (animals)
Option 2.2.1 (2014-2019)	95,696	86,126	81,341	76,557	71,772	62,202	52,633
Option 2.2.2 (2009-2019)	95,974	86,377	81,578	76,779	71,981	62,383	52,786
Option 2.2.3 (2004-1019)	70,038	63,034	59,533	56,031	52,529	45,525	38,521

Table 2-116 provides *C. bairdi* crab (Zone 1) PSC limit allocation to the trawl CV sector for use in the BSAI Pacific cod target fishery (after removing the historical usage by the AFA C/P sector). Utilizing the 2019 Pacific cod TLAS *C. bairdi* (Zone 1) limit of 60,000 animals, the trawl CV sector would be allocated between 51,367 to 52,315 animals at a 10 percent PSC limit reduction, while at a 45 percent PSC limit reduction the sector would be allocated 31,335 to 31,970 animals. Given the low PSC of *C. bairdi* crab (Zone 1) by the trawl CV sector while targeting BSAI Pacific cod since 2009, even at a 45 percent PSC limit reduction, the trawl CV sector would likely be unconstrained while targeting BSAI Pacific cod in Zone 1 (see Table 2-107).

Table 2-116 Reductions in *C. bairdi* crab (Zone 1) PSC limits (usage based) for trawl CV sector for use in the BSAI Pacific cod target fishery

Qualifying years	<i>C. bairdi</i> crab (Zone 1) historical percentage	10% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector	15% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector	20% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector	25% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector	35% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector	45% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation to the trawl CV sector
Option 2.2.1 (2014-2019)	95%	86%	81%	76%	71%	62%	52%
Option 2.2.2 (2009-2019)	97%	87%	82%	78%	73%	63%	53%
Option 2.2.3 (2004-1019)	95%	85%	81%	76%	71%	62%	52%
Qualifying years	<i>C. bairdi</i> crab (Zone 1) PSC apportionment based on a limit of 60,000 animals	10% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)	15% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)	20% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)	25% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)	35% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)	45% of the <i>C. bairdi</i> crab (Zone 1) PSC allocation (animals)
Option 2.2.1 (2014-2019)	57,075	51,367	48,514	45,660	42,806	37,099	31,391
Option 2.2.2 (2009-2019)	58,128	52,315	49,408	46,502	43,596	37,783	31,970
Option 2.2.3 (2004-1019)	56,972	51,275	48,426	45,578	42,729	37,032	31,335

Table 2-117 provides *C. bairdi* crab (Zone 2) PSC limit allocation to the trawl CV sector for use in the BSAI Pacific cod target fishery (after removing the historical usage by the AFA C/P sector). Utilizing the 2019 Pacific cod TLAS *C. bairdi* (Zone 2) limit of 49,999 animals, the trawl CV sector would be allocated between 43,007 to 44,726 animals at a 10 percent PSC limit reduction, while at a 45 percent PSC limit reduction the sector would be allocated 31,061 to 32,302 animals. Given the low PSC of *C. bairdi* crab (Zone 2) by the trawl CV sector while targeting BSAI Pacific cod since 2008, even at a 45 percent PSC limit reduction, the trawl CV sector would likely be unconstrained when targeting BSAI Pacific cod in Zone 2 (see Table 2-108).

Table 2-117 Reductions in *C. bairdi* crab (Zone 2) PSC limits (usage based) for trawl CV sector for use in the BSAI Pacific cod target fishery

Qualifying years	<i>C. bairdi</i> crab (Zone 2) historical percentage	10% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector	15% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector	20% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector	25% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector	35% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector	45% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation to the trawl CV sector
Option 2.2.1 (2014-2019)	90%	81%	77%	72%	68%	59%	50%
Option 2.2.2 (2009-2019)	94%	84%	80%	75%	70%	61%	52%
Option 2.2.3 (2004-1019)	94%	85%	80%	76%	71%	61%	52%
Qualifying years	<i>C. bairdi</i> crab (Zone 2) PSC apportionment based on a limit of 49,999 animals	10% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)	15% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)	20% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)	25% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)	35% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)	45% of the <i>C. bairdi</i> crab (Zone 2) PSC allocation (animals)
Option 2.2.1 (2014-2019)	45,182	40,664	38,405	36,146	33,887	29,368	24,850
Option 2.2.2 (2009-2019)	46,917	42,225	39,880	37,534	35,188	30,496	25,804
Option 2.2.3 (2004-1019)	47,236	42,512	40,151	37,789	35,427	30,703	25,980

Phased in PSC limit reductions

In June 2021, the Council added a new Suboption 3.3.3 that would phase in PSC limit reductions over three years with one-third of the total reduction implemented each year. In October 2021, the Council when selecting its PA, selected two years with one-half of the total PSC reduction implemented each year. Similar approaches have been utilized in other cooperative based programs. In the Amendment 80 Program for example, annual halibut PSC and crab PSC limit available for use by the Amendment 80 sector was reduced over five years. By phasing in PSC reductions, cooperatives would have two years to gradually adjust to lower PSC limits that are proposed in Suboptions 3.3.1 and 3.3.2, while also adjusting to the many new aspects of the PCTC Program. Table 2-118 provides an example of the three-year phase in the reduction of halibut and crab PSC limits. For halibut PSC, rather than the trawl CV sector starting with a 287 mt limit (full reduction) upon implementation of the PCTC Program, the sector instead would

start with a halibut PSC limit of 350 mt⁹⁸ assuming a 391 mt halibut PSC limit for the Pacific cod fishery using 2009 to 2019 qualifying years from Element 2 and 25 percent halibut reduction for the trawl CV sector.

Table 2-118 Example of phased in PSC limit reduction for the trawl CV sector

PSC	Trawl CV PSC apportionment	Year 1	Year 2	Year 3
Halibut ¹	382 mt	350	319	287
Red king crab (Zone 1) ²	2,676 animals	2,364	2,052	1,740
<i>C. opilio</i> crab (COBLZ) ³	89,657 animals	79,198	68,739	58,277
<i>C. bairdi</i> crab (Zone 1) ⁴	54,360 animals	48,019	41,677	35,334
<i>C. bairdi</i> crab (Zone 2) ⁵	45,299 animals	40,015	34,730	29,444

¹Assumes a 391 mt halibut PSC limit for the Pacific cod fishery using 2009 to 2019 qualifying years and 25% halibut reduction

²Assumes a 35% reduction of a Pacific cod red king crab PSC limit (Zone 1) of 2,954 animals at a 90.6% allocation to trawl CV sector

³Assumes a 35% reduction of the Pacific cod *C. opilio* crab PSC limit (COBLZ) of 98,959 animals at a 90.6% allocation to the trawl CV sector

⁴Assumes a 35% reduction of the Pacific cod *C. bairdi* crab PSC limit (Zone 1) of 60,000 animals at a 90.6% allocation to the trawl CV sector

⁵Assumes a 35% reduction of the Pacific cod *C. bairdi* crab PSC limit (Zone 2) of 49,999 animals at a 90.6% allocation to the trawl CV sector

2.9.3.4. Option 3.4 – Establish separate C season PSC limits for trawl CV limited access fishery

Option 3.4 would establish a separate C season halibut and crab PSC limit apportionments of 5 to 15 percent of the total apportion for a TLAS Pacific cod fishery if the Council selects Element 2.5 which would only allocate A season and B season directed fishing allowance to cooperatives as CQ. The C season PSC apportionments would be calculated before applying PSC limit reductions for the PCTC Program. The C season PSC apportionment is necessary under this option since 15 percent of the trawl CV Pacific cod allocation would not be allocated to cooperatives as CQ but rather left as a limited access fishery to be managed as currently done by NMFS. These halibut and crab PSC apportionments for the C season would only apply to the trawl CV sector given Option 3.2 would establish separate PSC limits for the trawl CV sector and the AFA C/P sector. The only exception is if the Council selects Option 3.1, which would leave crab PSC limits at the BSAI TLAS level thus being shared by the trawl CV sector and the AFA C/P sector.

As noted in Table 2-119, apportioning 5 percent to 15 percent of the annual trawl CV halibut PSC limit to the C season yields between 19 mt to 57 mt, based on range of 96 percent to 98 percent, depending on the years selected. As noted in Table 2-120, the average halibut PSC for the C season relatively to the average annual halibut PSC limit ranged from 2.74 percent during 2009-2019 to 4.07 percent during 2014-2019. Comparing the C season halibut PSC limits proposed under this option to average halibut C season PSC, the minimum C season apportionment of 5 percent would likely overfund the C season halibut PSC limit⁹⁹ while at the same time underfund the A and B seasons halibut PSC limit. Given that halibut PSC is likely a constraining factor in cooperatives harvesting their CQ, overfunding the C season halibut PSC limit when combined with proposed PSC limit reductions in Option 3.3, could further constrain the cooperatives.

For red king crab (Zone 1), another potential constraining PSC limit, a 5 percent to 15 percent C season apportionment would yield between 134 animals and 401 animals, based on a trawl CV annual apportionment of 90.6 percent of 2,954 animals for the Pacific cod TLAS fishery. When compared to the average C season PSC of red king crab (Zone 1) relative to the average annual PSC limit for red king crab (Zone 1), approximately 0.19 percent to 0.70 percent was in the C season. Given the significantly lower C season PSC relative to the annual limit, the option to apportion 5 percent to 15 percent of the annual limit to C season would significantly overfund the C season red king crab (Zone 1) apportionment at the cost of

⁹⁸ This example assumes a 391 mt halibut PSC limit for the TLAS Pacific cod fishery. Catch years used to determine the halibut PSC limit apportionment to the trawl CV sector are 2009 through 2019, and the halibut PSC limit reduction for the trawl CV sector is 25 percent.

⁹⁹ Based on the assumption that the trawl CV sector does not fish more of their C season allocation in the future.

underfunding the A and B season apportionment, which could constrain cooperatives when combined with the proposed PSC limit reductions in Option 3.3.

Given that cooperatives will have to balance five different PSC limits two of which could be potentially constraining (halibut and red king crab) all while managing their A and B season Pacific cod CQ, another C season apportionment approach for potentially constraining PSC limits is to apportion a smaller percentage of the annual PSC limit to the C season. This would allow for a larger percentage of the PSC limit to be apportioned to the A and B seasons. This approach would likely provide greater flexibility for cooperatives in balancing potentially constraining PSC limits. To accommodate this approach, the Council would select a C season apportionment percentage using information in Table 2-120 that is less than the average C season PSC relative to the annual average PSC limit. Any remaining halibut or red king crab (Zone 1) PSC limit not utilized during cooperative fishing would roll to the C season for the trawl CV limited access fishery.

Utilizing the proposed 5 percent to 15 percent C season apportionment, the number of *C. opilio* animals that would be apportioned to the C season trawl CV limited access fishery would range from 4,483 animals to 13,449 animals (see Table 2-119) based on trawl CV annual apportionment of 90.6 percent of 98,657 *C. opilio* PSC limit for the Pacific cod TLAS fishery. In contrast, the average C season PSC for *C. opilio* ranged from 348 animals to a high 828 animals (see Table 2-120) depending on the years selected. As a percent of C season PSC relatively to the average annual PSC limit, the C season ranged from a low of 0.34 percent to a high of 0.80 percent. The highest C season PSC was in 2017 at 4,141 animals. Overall, the 5 percent to 15 percent range for C season apportionment would accommodate the C season trawl CV limited access fishery during most years while also likely providing sufficient A and B season PSC limits to not constrain cooperative fishing in most years.

For *C. bairdi* (Zone 1), a 5 percent to 15 percent C season apportionment would yield 2,718 to 8,154 animals for a C season trawl CV limited access fishery based on a trawl CV annual apportionment of 90.6 percent of 60,000 animals for the Pacific cod TLAS fishery (see Table 2-119). In contrast, the average PSC of *C. bairdi* (Zone 1) during the C season ranged from 10 animals to 461 animals depending on the years selected. As a percent of C season PSC relatively to the average annual PSC limit, the C season ranged from a low of 0.02 percent to a high of 0.50 percent depending on the years selected. The two years with the highest C season PSC occurred in 2004 at 4,876 animals and 2005 at 1,790 animals. The remaining years had extremely low C season PSC. In summary, a 5 percent to 15 percent C season apportionment would provide sufficient C season PSC limit to accommodate the trawl CV limited access fishery in most years, while also likely providing sufficient PSC limit for the A and B seasons to not constrain cooperatives in most years.

For *C. bairdi* (Zone 2), a 5 percent to 15 percent C season apportionment would result in 2,265 to 6,795 animals for the C season trawl CV limited access fishery based on a trawl CV annual apportionment of 90.6 percent of 49,999 animals for the Pacific cod TLAS fishery (see Table 2-119). In comparison, the average annual C season PSC for *C. bairdi* (Zone 2) was 127 animals to 2,892 animals depending on the years selected. As a percent of C season PSC relatively to the average annual PSC limit, the C season ranged from a low of 0.28 percent to a high of 2.50 percent depending on the years selected. The 2004 through 2006 were periods of high *C. bairdi* (Zone 2) PSC both for the year and the C season. The C season PSC ranged from a low of 7,005 animals in 2005 to a high of 23,302 animals in 2005. The next highest C season PSC was in 2008 at 1,963 animals. In all other years, the C season PSC was less than 100 animals. Overall, the 5 percent to 15 percent range for C season apportionment would accommodate the C season trawl CV limited access fishery during most years while also likely providing sufficient A and B season PSC limits to not constrain cooperative fishing in most years.

Table 2-119 Halibut and crab PSC C season apportionments based on 5 percent to 15 percent of annual PSC limit for the trawl CV sector

PSC species	Annual PSC limit for trawl CV sector	5% of annual limit	15% of annual limit
2014-2019 (based on 96% trawl CV sector apportionment of 391 mt halibut PSC limit for the Pacific cod TLAS fishery)	377	19	57
Halibut 2009-2019 (based on 98% trawl CV sector apportionment of 391 mt halibut PSC limit for the Pacific cod TLAS fishery)	382	19	57
2004-2019 (based on 97% trawl CV sector apportionment of 391 mt halibut PSC limit for the Pacific cod TLAS fishery)	379	19	57
Red king crab (Zone 1) animals (based on 90.6% trawl CV sector apportion of 2,954 animal PSC limit for the Pacific cod TLAS fishery)	2,676	134	401
<i>C. opilio</i> (COBLZ) animals (based on 90.6% trawl CV sector apportion of 98,657 animal PSC limit for the Pacific cod TLAS fishery)	89,657	4,483	13,449
<i>C. bairdi</i> (Zone 1) animals (based on 90.6% trawl CV sector apportion of 60,000 animal PSC limit for the Pacific cod TLAS fishery)	54,360	2,718	8,154
<i>C. bairdi</i> (Zone 2) animals (based on 90.6% trawl CV sector apportion of 49,999 animal PSC limit for the Pacific cod TLAS fishery)	45,299	2,265	6,795

Table 2-120 Average annual PSC and average C season PSC

	2004-2019	2009-2019	2014-2019
	Halibut		
Average annual PSC (mt)	334	273	265
Average C-season PSC (mt)	22	12	17
Average C-season PSC relative to average annual PSC	6.48%	4.37%	6.32%
Average C-season PSC relative to average annual PSC limit	3.15%	2.74%	4.07%
	Red king crab (Zone 1) animals		
Average annual PSC (animals)	298	327	271
Average C-season PSC (animals)	18	27	10
Average C-season PSC relative to average annual PSC	6.14%	8.13%	3.58%
Average C-season PSC relative to average annual PSC limit	0.19%	0.70%	0.33%
	<i>C. opilio</i> crab (COBLZ)		
Average annual PSC (animals)	483	649	1,085
Average C-season PSC (animals)	348	452	828
Average C-season PSC relative to average annual PSC	72.03%	69.71%	76.32%
Average C-season PSC relative to average annual PSC limit	0.34%	0.49%	0.80%
	<i>C. bairdi</i> crab (Zone 1)		
Average annual PSC (animals)	10,163	5,692	4,790
Average C-season PSC (animals)	461	46	10
Average C-season PSC relative to average annual PSC	4.53%	0.81%	0.21%
Average C-season PSC relative to average annual PSC limit	0.50%	0.08%	0.02%
	<i>C. bairdi</i> crab (Zone 2)		
Average annual PSC (animals)	9,233	2,791	2,303
Average C-season PSC (animals)	2,892	127	230
Average C-season PSC relative to average annual PSC	31.32%	4.53%	9.98%
Average C-season PSC relative to average annual PSC limit	2.50%	0.28%	0.51%

Source: AKFIN, July 2021, Sector_PSC(7-12-21)

2.9.3.5. Allocation of PSC limits to cooperatives

Finally, each cooperative will receive annual apportionments of halibut and crab PSC limits based on members' qualifying percent of total CQ for use by each cooperative while harvesting their Pacific cod CQ in accordance with the harvest cooperative agreement. A PCTC Program cooperative is not authorized to catch BSAI Pacific cod CQ or use crab PSC or halibut PSC in excess of the amount assigned to the cooperative. Exceeding the amount of Pacific cod CQ or crab or halibut PSC assigned to the cooperative would be prohibited. Each member of the PCTC Program cooperative would be jointly and severally liable for any violations. This liability would extend to any persons who are hired to catch or receive CQ assigned to an PCTC Program cooperative. Each member of an PCTC Program cooperative would be responsible for ensuring that all members of the cooperative comply with all regulations applicable to fishing under the PCTC Program.

PSC limits are transferable between cooperatives based on the same rules established for Pacific cod CQ. Cooperatives are expected to devise methods to reduce their halibut and crab PSC. Factoring in options that could reduce the amount of PSC available for cooperatives to include PSC limit reductions (Option

3.3), the potential for C season trawl CV limited access Pacific cod fishery apportionment (Option 3.4), and the use of pot gear to harvest CQ (Element 14), PSC limits may be constraining at the sector level, so allowing transfers of PSC limits between cooperatives could help improve flexibility for cooperatives to harvest their CQ.

2.9.4. Element 4 – GOA Sideboards

Allowing the trawl CV sector to form cooperatives to manage their BSAI Pacific cod allocation should better optimize their fishery. The increased flexibility in planning their fishery year is expected to enable companies to alter their historical fishing patterns and improve their production efficiency. However, the flexibility that allows the trawl CVs to change their fishing patterns could also give them a competitive advantage over other participants in the GOA groundfish fisheries that remain open access. For example, if members of the trawl CV sector can decide the best time and most efficient vessels to fish their BSAI Pacific cod allocation, it may provide them opportunities to expand their participation in other GOA groundfish fisheries.

Under status quo, the trawl CV sector may not have had the opportunity to participate in those GOA groundfish fisheries at the level possible with cooperative management because of conflicts between the BSAI Pacific cod season and GOA groundfish seasons. Under a cooperative program, the cooperative members' participation in the BSAI Pacific cod fishery would be limited by their QS assigned to the LLP license, the restrictions on their LLP license and its associated endorsements, the allowance of halibut and crab PSC limits, and fishing schedule conflicts.¹⁰⁰ Expanding their participation in other fisheries not directly allocated to the trawl CV sector could result in other participants having less available to harvest. Historical participants in those other fisheries may feel they are disadvantaged because of the PCTC Program. As a result, these historical participants may request that protective harvest limits (i.e., “sideboards”) be placed on the trawl CV sector participating in cooperatives to restore the competitive balance that existed prior to the PCTC Program cooperatives forming.

Sideboard limits allow the cooperative members to catch up to their “historical” percentage of species they harvested in non-rationalized GOA groundfish fisheries. Sideboard limits are not an allocation. The sideboard is a limit on the maximum amount of a species that catch share program participants can catch. Members of PCTC Program cooperatives are not guaranteed that amount of catch. They must harvest the sideboard limit before the TAC is harvested. Cooperative sideboard limits were first developed as part of the AFA, and since then, have been included in the Crab Program, Amendment 80 Program, and the Central GOA Rockfish Program.

To address concerns about the cooperative program having an advantage spilling into fisheries that are not included in the catch share program, the Council included options to limit these spillover effects from the PCTC Program on GOA fisheries. In December 2020, the Council reviewed an initial draft of the PCTC Program analysis that included options for establishing GOA sideboards for those that qualify for the PCTC Program. Recognizing the complexity of the existing sideboards when combined with new sideboards from the PCTC Program, the Council at the December 2020 meeting modified the proposed GOA sideboards to reduce some of the added complexity of GOA sideboards and reduce the management and enforcement burden associated with the new sideboard limits. Specifically, Option 4.1 would modify the existing GOA AFA non-exempt sideboard limits for all GOA AFA non-exempt vessels in addition to applying a sideboard limit to AFA LLP licenses that authorize the vessel's GOA fishing activity based on GOA catch history during the range of years noted in Options 2.2.1 through 2.2.3. These sideboard limits would be applied to all non-exempt AFA sideboarded vessels and AFA sideboarded LLP licenses in aggregate. In June 2021, the Council clarified that the revision to the existing GOA sideboards in Option 4.1 are specific to groundfish and would not revise the existing GOA halibut PSC sideboard limits for the

¹⁰⁰ These conflicts could include biological factors such as spawning aggregations at given times of the year and bycatch interactions.

AFA non-exempt vessels. The Council also added language to prohibit directed fishing through regulations for the following GOA non-exempt sideboarded AFA CVs fisheries: Southeast Outside District (SEO) pollock, Western shallow-water flatfish, both Central and Eastern deep-water flatfish, and Eastern POP. Based on revised sideboard limits, these fisheries would have insufficient limits for a directed fishery.

Option 4.2 would prohibit AFA GOA sideboard exempt vessels and non-AFA vessels assigned to an LLP license that receive annual BSAI Pacific cod CQ from leasing that CQ as a condition of benefiting from GOA sideboard exemption. In June 2021, the Council added language to Option 4.2 that allows vessels assigned to the qualified GOA exempt LLP license that do not fish in the GOA during the calendar year, except for the CGOA Rockfish Program, to lease the BSAI Pacific cod CQ generated by that LLP license that calendar year. Option 4.2 requires cooperatives to monitor GOA exempt vessels that fish in the GOA, except for the CGOA Rockfish Program, to ensure they do not lease their BSAI Pacific cod CQ. Cooperatives must also implement a penalty structure for violations associated with exceeding the defined limits. As part of Option 4.2, Suboption 4.2.1 would authorize AFA GOA exempt and non-AFA vessels with LLP licenses with less than 200 mt, 400 mt, or 600 mt of average annual qualifying BSAI Pacific cod catch history to lease their CQ while benefiting from GOA sideboard exemption.

The Council's PA is shown in **bold** below.

Element 4: Gulf of Alaska (GOA) Sideboards

Option 4.1: All GOA non-exempt AFA CVs and AFA LLP licenses will be sideboarded (in aggregate for all GOA groundfish fishing activity) and for halibut PSC (on the annual amount of the total trawl halibut PSC limit), except for vessels when participating in the Central GOA Rockfish Program, based on their GOA catch history during the BSAI Pacific cod qualifying period.

Prohibit directed fishing in regulations for the GOA non-exempt AFA CVs and LLPs for Southeast Outside pollock, Western shallow-water flatfish, and both Central and Eastern deep-water flatfish, and Eastern Pacific Ocean perch.

Option 4.2: AFA GOA-exempt and non-AFA CVs assigned to LLP licenses and CVs assigned to under 60' LLP licenses with AI transferable endorsements that receive annual BSAI Pacific cod CQ will not be permitted to lease their BSAI Pacific cod CQ as a condition of benefiting from a GOA sideboard exemption. If the vessel assigned to the qualified GOA exempt LLP license does not fish the GOA during the calendar year, except for the Central GOA Rockfish Program, the BSAI Pacific cod CQ generated by the LLP license can be leased that calendar year. Cooperatives will be required to monitor GOA AFA exempt and non-AFA vessels and vessels assigned to under 60' LLP licenses with AI transferrable endorsements to ensure they do not lease their BSAI Pacific cod CQ and implement a penalty structure for violations. Cooperatives will be required to report leasing activities and penalties issued in the BSAI Pacific cod cooperative annual report.

Suboption 4.2.1: AFA GOA-exempt, non-AFA CVs, and CVs assigned to under 60' LLP licenses with AI transferable endorsements with LLP licenses of less than 300 mt of average annual qualifying BSAI Pacific cod history may lease their BSAI Pacific cod CQ and benefit from the GOA sideboard exemption.

2.9.4.1. Summary of existing GOA sideboards

It is important to understand how GOA sideboard limits that may be established under the PCTC Program integrate with the existing GOA harvester sideboard limits. This section provides a description of the existing GOA halibut PSC limits that originated from the AFA Program, BSAI Crab Program, and the CGOA Rockfish Program.

AFA Program

When the AFA Program was implemented in 2000, AFA vessel owners received fixed allocations of BS pollock. With the fixed pollock allocations, companies could effectively consolidate or otherwise improve the efficiency of their BS pollock operations, thereby freeing AFA vessel owners to potentially expand into other fisheries that would not otherwise have been available. To limit these expansions, the AFA directed the Council to develop and recommend conservation and management measures necessary to protect other fisheries from potential adverse impacts from the AFA Program. As a result, harvesting and processing restrictions, known as sideboards, on AFA vessels in groundfish, crab, and scallop fisheries in the BSAI (excluding pollock) and GOA were created (Section 211 of the AFA). In addition, specified restrictions for prohibited species, as well as harvesting and processing limits for BSAI crab species for AFA vessels were created.

In the GOA, AFA CVs are divided into two categories, those vessels subject to sideboard limits and those vessels exempt from sideboard limits. The limits are calculated based on the catch histories of the non-exempt AFA CVs. Specifically, the sideboard ratio is aggregated retained catch for each groundfish species or species group during 1995 through 1997 period relative to the sum of the TACs for the species or species group. An inter-cooperative agreement divides the sideboard limits among the cooperatives and sets penalties for exceeding the limits.

The Council provided a sideboard exemption for AFA CVs that demonstrated dependence on GOA fisheries, while having limited history in the BSAI pollock fishery. Although not incorporated in regulation, the Council recommended and approved the exemption with the understanding that no GOA sideboard-exempt vessel would lease its BS pollock in a year that it exceeds its GOA average harvest level from 1995 through 1997. To ensure that the Council's intent is satisfied, the Catcher Vessel Inter-Cooperative Agreement binds vessels to this limitation.

The sideboard limit for halibut PSC is calculated based on the retained groundfish catch by AFA sideboarded CVs in the shallow-water and deep-water complex from 1995 through 1997 relative to total retained catch in the shallow-water¹⁰¹ and deep-water¹⁰² complex. Under the sideboard limits, fisheries in the applicable complex are closed for the remainder of a season once NMFS determines that the sideboard will be reached. Any unused halibut PSC sideboard limit in one season may be rolled to the next season. Conversely, if a seasonal apportionment of a trawl halibut PSC limit is exceeded, the overage is deducted from the apportionment for the next season during the current fishing year. A number of AFA vessels receive allocations under the Rockfish Program (and an associated halibut PSC allowance), so the limited access deep-water complex fisheries are closed to AFA vessels during the third season.

CV sideboard limits for both groundfish and halibut PSC apply only to AFA vessels that are not exempt from the specific sideboard limits. The AFA Program established two classes of exempted AFA CVs: 1) those exempt from sideboard limits in the BSAI Pacific cod fishery, and 2) those exempt from sideboard limits in the GOA groundfish fisheries.

NMFS manages the AFA sideboard limits. The agency makes an initial determination at the beginning of the fishing year regarding the fisheries in which AFA vessels are likely to participate, based on historical participation (sideboard ratios), TACs, prohibited species catch (PSC) limits, and other apportionments

¹⁰¹ Shallow-water complex is composed of pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, and other species (sculpins, sharks, and octopuses).

¹⁰² Deep-water complex is composed of sablefish, rockfish, deep-water flatfish, rex sole, and arrowtooth flounder.

and regulations. The sideboard limit ratios were calculated as percentages of the TAC based on the aggregate retained catch by AFA vessels of the sideboard species from 1995 to 1997. The ratio remains the same year-to-year but is applied to the current year's ITACs to determine the yearly sideboard limit.

To streamline and simplify NMFS's management of AFA groundfish sideboard limits, regulations were published under 84 FR 2723, which became effective on March 11, 2019, that prohibited directed fishing for several BSAI and GOA sideboard fisheries. AFA regulations required NMFS to calculate numerous sideboard limits as part of the annual BSAI and GOA harvest specifications process and publish those limits in the Federal Register. Simultaneously, NMFS would prohibit directed fishing for the majority of the groundfish species subject to these sideboard limits because most sideboard limits are too small each year to support directed fishing. Vessels subject to sideboard limits in the final rule are now prohibited from directed fishing for those species in regulation (50 CFR §§ 679.20(d)(1)(iv)(D) and 50 CFR §680.22(e)(1)(i) and (iii) and Tables 54, 55, and 56 to 50 CFR §679). See Table 2-121 for the 2021 non-exempt AFA CV groundfish sideboard limits in the GOA and Table 2-122 for the non-exempt AFA CVs halibut PSC sideboard limits in the GOA. Table 2-123 provides a list of those GOA groundfish species that are closed to directed fishing by AFA CVs. Note that AFA CVs qualified for the CGOA Rockfish Program with Rockfish Program QS are not restricted by AFA sideboard limits for primary and secondary Rockfish Program species while checked into Rockfish Program.

Recently, NMFS issued a final rule implementing Amendment 109 to the GOA FMP with an effective date of January 1, 2021 (85 FR 38093, June 25, 2020), to change CGOA and WGOA Pacific cod seasonal apportionments. The amendment increased the trawl CV sector's A season TAC while proportionally decreasing the sector's B season TAC. Amendment 109 also combined the CGOA and WGOA trawl CV pollock fishery A season and B season into a single season (redesignated as the A season) and the C season and D-season into a single season (redesignated as the B season) and changed the annual start date of the redesignated pollock B season from August 25 to September 1.

Table 2-121 2021 GOA non-exempt AFA CV groundfish sideboard limits

Target Species	Apportionments by season/gear	Area/component	Sideboard ratio ¹	2021 TACs (mt)	2021 sideboard limit (mt)
Pollock	A Season Jan 20 - May 31	Shumagin (610)	0.6047	799	483
		Chirikof (620)	0.1167	41,737	4,871
		Kodiak (630)	0.2028	6,297	1,277
	B Season Sep 1 - Nov 1	Shumagin (610)	0.6047	17,677	10,689
		Chirikof (620)	0.1167	13,133	1,533
		Kodiak (630)	0.2028	18,023	3,655
Annual	WYK (640)	0.3495	5,554	1,941	
	SEO (650)	0.3495	10,148	3,547	
Pacific cod	A Season Jan 1 - Jun 10	W	0.1331	3,561	474
		C	0.0692	6,567	454
	B Season Sept 1 - Dec 31	W	0.1331	2,029	270
		C	0.0692	3,675	254
Shallow-water flatfish	Annual	W	0.0156	13,250	207
		C	0.0587	28,082	1,648
Deep-water flatfish	Annual	C	0.0647	1,914	124
		E	0.0128	3,787	48
Rex sole	Annual	C	0.0384	8,912	342
Arrowtooth flounder	Annual	C	0.028	69,072	1,934
Flathead sole	Annual	C	0.0213	15,400	328
Pacific ocean perch	Annual	C	0.0748	27,429	2,052
		E	0.0466	7,105	331
Northern Rockfish	Annual	C	0.0277	3,334	92

Source: Table 18 of the Final 2021 Harvest Specification

¹Determined using a ratio of 1995 to 1997 AFA CV catch to 1995 to 1997 TAC

Table 2-122 2021 non-exempt AFA CVs halibut PSC sideboard limits in the GOA

Trawl season	Halibut PSC complex	Sideboard ratio ¹	2021 total halibut PSC limit (mt)	2021 sideboard limit (mt)
First seasonal allowance (Jan 20 - Apr 1)	Shallow-water	0.34	384	131
	Deep-water	0.07	135	9
Second seasonal allowance (Apr 1 - Jul 1)	Shallow-water	0.34	85	29
	Deep-water	0.07	256	18
Third seasonal allowance (Jul 1 - Sep 1)	Shallow-water	0.34	121	41
	Deep-water	0.07	341	24
Fourth seasonal allowance (Sep 1 - Oct 1)	Shallow-water	0.34	53	18
	Deep-water	0.07	75	5
Fifth seasonal allowance (Oct 1 - Dec 31)	All targets	0.205	256	52
Annual	Total shallow-water			219
	Total deep-water			56
	Grand total, all season and categories			1,706

Source: Table 20 of the Final 2021 Harvest Specification

¹Determined using a ratio of 1995-1997 AFA CV retained catch in the PSC target category to 1995-1997 total retained catch

Table 2-123 AFA CV GOA sideboard species for which directed fishing is prohibited

Target species	Area
Pacific cod	Eastern inshore Eastern offshore
Shallow-water flatfish	Eastern
Deep-water flatfish	Western
Rex sole	Western Eastern
Arrowtooth flounder	Western Eastern
Flathead sole	Western Eastern
Pacific ocean perch	Western
Northern rockfish	Western
Dusky rockfish	Western Central Eastern
Demersal shelf rockfish	SEO district
Sablefish	Western Central Eastern
Shorthead rockfish	Western Central Eastern
Rougheye rockfish	Western Central Eastern
Thornyhead rockfish	Western Central Eastern
Other rockfish	Central Eastern
Atka mackerel	GOA
Big skate	Western Central Eastern
Longnose skate	Western Central Eastern
Other skates	GOA
Sharks	GOA
Squids	GOA
Octopuses	GOA

Source: Prohibit Directed Fishing For AFA Program and Crab Rationalization Program Groundfish Sideboard limits in the BSAI and GOA (84 FR 2723, Feb 2, 2019)

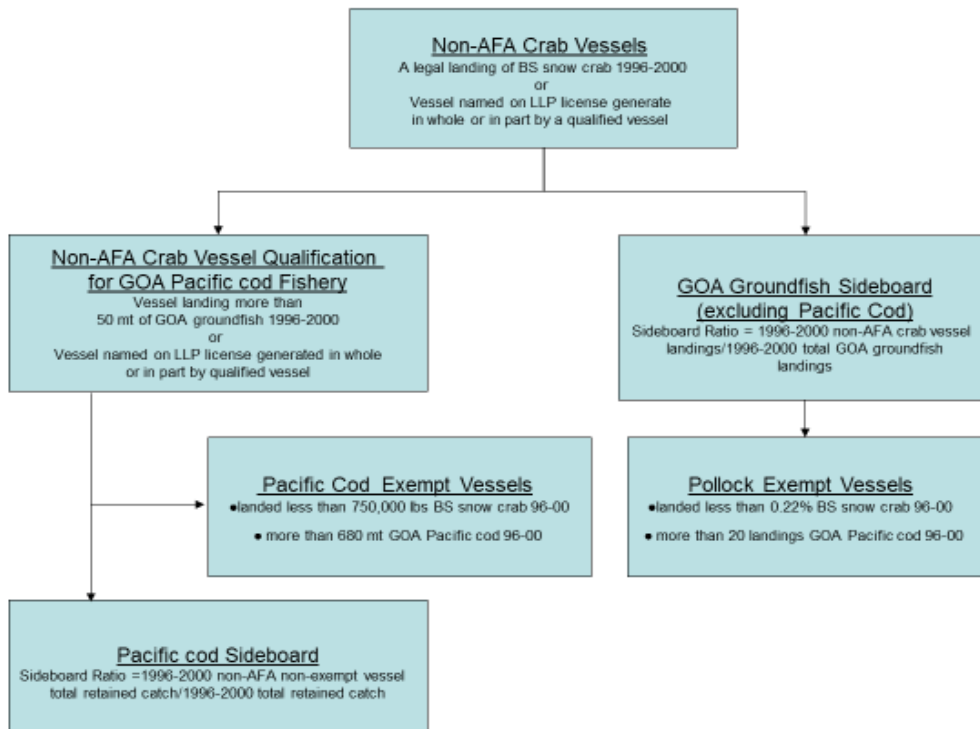
The AFA CV cooperatives (including the inshore cooperatives, as well as the Mothership Fleet Cooperative and the High Sea Catchers' Cooperative) divide the harvest limits among the cooperatives, and each cooperative apportions its allocations among member vessels. Because the sideboard harvest limits apply to all non-exempt AFA CVs across the three AFA sectors, the Catcher Vessel Inter-cooperative agreement was created to divide the limits among cooperatives, set penalties for exceeding the limits, and to monitor sideboard species transfers between cooperatives. The cooperative structure provides a mechanism for AFA CVs to manage the harvest of sideboard limits through civil contracts.

Crab Program

Knowing that the harvesters in the crab fisheries may alter fishing patterns to increase catch in other fisheries, the Council included sideboard limits on catches of GOA groundfish for vessels and licenses with BS snow crab history that contributed to an initial quota share allocation (see Figure 2-9). Sideboards under the program also prohibit participation in the GOA Pacific cod fisheries by vessels with BS snow crab history that contributed to a crab quota allocation and that landed less than 50 mt of groundfish harvested in the GOA during the BS snow crab qualifying period (January 1, 1996, and December 31, 2000). In addition, vessels with limited BS snow crab and demonstrated GOA Pacific cod dependence are exempt from GOA Pacific cod sideboard limits. Specifically, the qualification criteria for exemption of GOA Pacific cod sideboards are if the catch history of the vessel is less than 750,000 lbs. of BS snow crab from 1996 to 2000 and more than 680 mt of GOA Pacific cod during the same qualifying years. To qualify for an exemption from GOA pollock sideboards, the catch history of the vessel must be less than 0.22 percent of all BS snow crab landings from 1996 to 2000 and the vessel must have made 20 landings of pollock harvested from the GOA during the same qualifying years.

Sideboard limits are based on GOA groundfish and GOA Pacific cod retained catch by the crab vessels that are subject to the sideboard limits during the snow crab qualifying period. In other words, the sideboard limit calculation does not include history from sideboard exempt crab vessels. Since LLP licenses can move among vessels, it is possible that the sideboard limits on a vessel could differ from those associated with the LLP license assigned to that vessel. In these cases, the more restrictive sideboard is applied. Finally, since vessels participating in the AFA are already subject to sideboards in GOA groundfish fisheries, those vessels are exempt from these crab program sideboards.

Figure 2-9 Diagram of non-AFA crab vessel sideboard limits for the GOA



CGOA Rockfish Program

The CGOA Rockfish Program also includes sideboard limits that apply to federally permitted vessels fishing in federal waters and waters adjacent to the CGOA when the harvest of rockfish primary species (POP, Northern rockfish, and dusky rockfish) by that vessel are deducted from the federal TAC. Sideboards limit both the LLP license with rockfish QS assigned to it, and the vessel used to make legal landings of rockfish QS.

Rockfish Program sideboards are in effect from July 1 through July 31. Sideboard measures are in effect only during the month of July when the CGOA rockfish fisheries were traditionally open and vessel operators had to choose between fishing in the GOA rockfish fisheries and other fisheries (salmon) that were open to directed fishing.

Specific to rockfish qualified CVs, they are prohibited from fishing for the primary rockfish species in the West Yakutat District (WYAK) and Western GOA (WGOA) during July. Instead of utilizing small sideboard limits, the CV sector sideboard limits instead prohibit directed fishing for the primary rockfish species, which eases the management burden and reduces the observer coverage and costs associated with sideboard fisheries for the sector. Rockfish qualified CVs are also prohibited from directed fishing in any target fishery in the deep-water complex (except for CGOA rockfish) but can directed fish for target fisheries in the shallow-water complex during July. Deep-water complex includes the arrowtooth flounder, deep-water flatfish, and rex sole fisheries. The shallow-water complex includes pollock, Pacific cod, shallow-water flats, flathead sole, Atka mackerel, and other species. These restrictions were implemented to limit participation of Rockfish Program qualified CVs in these fisheries because they had not historically harvested these species in July. As a result, Rockfish Program qualified CVs are limited to fishing species in the shallow-water complex during the month of July.

Two exemptions from sideboards were included under the Rockfish Program. The first applies to CVs and LLP licenses that applied to be permanently exempted from the Rockfish Program and choose not to

receive rockfish QS for which they would have otherwise qualified. The second exemption is specific to AFA CVs that are subject to AFA GOA sideboard limits. These vessels, of which there are four, are exempt because the Council believed these CVs did not need further limit since it determined that the AFA GOA sideboards limits effectively constrained AFA CVs from expanding their ability to harvest in other fisheries. Imposing additional sideboard limits would have been duplicative and unnecessary.

2.9.4.2. Option 4.1 – Revise AFA CVs GOA sideboard limits

Under Option 4.1, the existing GOA groundfish sideboards for all GOA non-exempt AFA CVs (PCTC Program qualified and non-qualified) will be revised based on the GOA catch history during the years in Options 2.2.1 through 2.1.3. In other words, regardless of qualifying for the PCTC Program, the GOA groundfish sideboards limits for the non-exempt AFA CVs will be revised based on GOA catch in more recent years relatively to the 1995 to 1997 GOA history used to generate the sideboard limits. In addition, unlike the existing AFA sideboard limits, which only limit the vessel and not the LLP license derived by that vessel's history, Option 4.1 would also apply a sideboard limit to the AFA LLP licenses that authorized the vessel's GOA activity. These sideboard limits will be applied to all the non-exempt AFA CVs and AFA LLP licenses on these vessels in aggregate.

Option 4.1 excludes CGOA Rockfish Program fishing activity generated by specific vessels and LLP licenses when calculating the GOA sideboard limits. As noted in the July 2017 AFA Program Review, there were 9 non-exempt AFA CVs that received CGOA Rockfish Pilot Program permits during the years of the program (2007 through 2011). In 2012, the CGOA Rockfish Program replaced the Pilot Program. Under the new program, different qualifying years were used causing six of the nine non-exempt AFA CVs to no longer qualify. Given that two of the three qualifying year options (Options 2.2.2 and 2.2.3) used to calculate the GOA sideboard limits encompass the years during the Pilot Program and the years during the CGOA Rockfish Program, there are at least two approaches for calculating the Rockfish Program fishing activity. One approach is to utilize the CGOA rockfish fishing activity from all nine non-exempt AFA CVs that qualified for the Pilot Program from 2007-2011 combined with the CGOA fishing activity from the four non-exempt AFA CVs that qualified for the Rockfish Program from 2012-2019. The other approach would be to use only the CGOA fishing activity from the three qualified non-exempt AFA CVs during the Pilot Program years and the Rockfish Program years. The first approach was selected because it excluded the catch of all vessels when participating in the Rockfish Pilot Program and Rockfish Program. This approach best captures the intent of the Council to exclude catch from the sideboard limit that was taken in the CGOA rockfish fishery by trawl gear. If the catch of the three currently active vessels were only excluded, it would reduce the amount of catch taken in the CGOA rockfish fishery and, therefore, result in a larger sideboard limit. While this may seem contradictory, it is because the catch in the CGOA rockfish fishery is being deducted from the total catch by these vessels and LLP licenses in the GOA (the catch is deducted from total GOA catch by these vessels when determining the sideboard limit).

NMFS manages the AFA GOA sideboard limits, while the AFA cooperatives coordinate the harvest of sideboard limits so as not exceed the groundfish and halibut PSC sideboard limits. The agency makes an initial determination at the beginning of the fishing year regarding the fisheries in which AFA vessels are likely to participate, based on historical participation (sideboard ratios), TACs, prohibited species catch (PSC) limits, and other apportionments and regulations. The sideboard limit ratios were calculated as percentages of the TAC based on the aggregate retained catch by AFA vessels of the sideboard species from 1995 to 1997. The ratio remains the same year-to-year but is applied to the current year's ITACs to determine the yearly sideboard limit. Upon reaching a sideboard limit, NMFS closes the sideboard fishery to the AFA non-exempt trawl CVs for directed fishing. Although several AFA sideboard fisheries have been closed during the harvest specifications over the years, only one inseason closure occurred, which was the rex sole fishery in 2014. AFA sideboard fisheries are reported by subarea for all AFA sideboard fisheries and by season for pollock and Pacific cod by season (see Table 2-121).

Figure 2-10, Figure 2-11, and Figure 2-12 shows the different GOA sideboard limits by the different catch share program from the perspective of the non-exempt AFA CVs. Each shaded column represents a different sideboard restriction, with the extreme left representing the AFA sideboards (which were the first sideboards) while the extreme right represents the proposed revised AFA sideboard limits noted in Option 4.1.

For example, starting with the extreme left column, there are 82 non-exempt AFA CVs that are restricted by GOA sideboards. Of those 82 non-exempt AFA CVs, 12 currently have an LLP license with CGOA trawl endorsements and 9 currently have an LLP license with WGOA trawl endorsements. Note that AFA GOA sideboard limits are currently not applied to LLP licenses. The next column to the right represents the Crab Program sideboards in the GOA that apply to both vessels and LLP licenses. Since none of the 82 non-exempt AFA CVs and their associated LLP licenses are qualified to participate in the Crab Program, they are not restricted by GOA Crab Program sideboard limits and thus labeled as non-Crab Program CVs and LLP licenses. The next column represents CGOA Rockfish Program sideboards. Of the 82 non-exempt AFA CVs and their associated LLP licenses labeled as non-Crab Program CVs and LLP licenses, three non-exempt AFA CVs qualify for the CGOA Rockfish Program and are restricted by CGOA Rockfish Program sideboard limits while the remaining 79 non-exempt AFA CVs are not qualified to participate in the CGOA Rockfish Program and are not restricted by CGOA Rockfish Program sideboard limits.

The final column represents the revised AFA non-exempt GOA sideboard limits proposed under Option 4.1 for both qualified and non-qualified PCTC Program vessels and LLP licenses. Depending on the qualifying years from Element 2 will determine the revised AFA non-exempt GOA sideboard limits. Using 2014 through 2019 qualifying years, the 45 PCTC Program qualified CVs and LLP licenses, the 34 non-qualified PCTC Program CVs and LLP licenses, and the three CVs and LLPs that qualified for both PCTC Program and the CGOA Rockfish Program collectively will be limited by revised AFA non-exempt GOA sideboard limits based on GOA activity during the 2014 through 2019 years (see Figure 2-10).

Figure 2-10 Diagram of existing GOA sideboard limits in combination with proposed revised GOA sideboard limits for all non-exempt AFA trawl CVs and LLP licenses (Option 4.1) based on GOA activity during 2014-2019

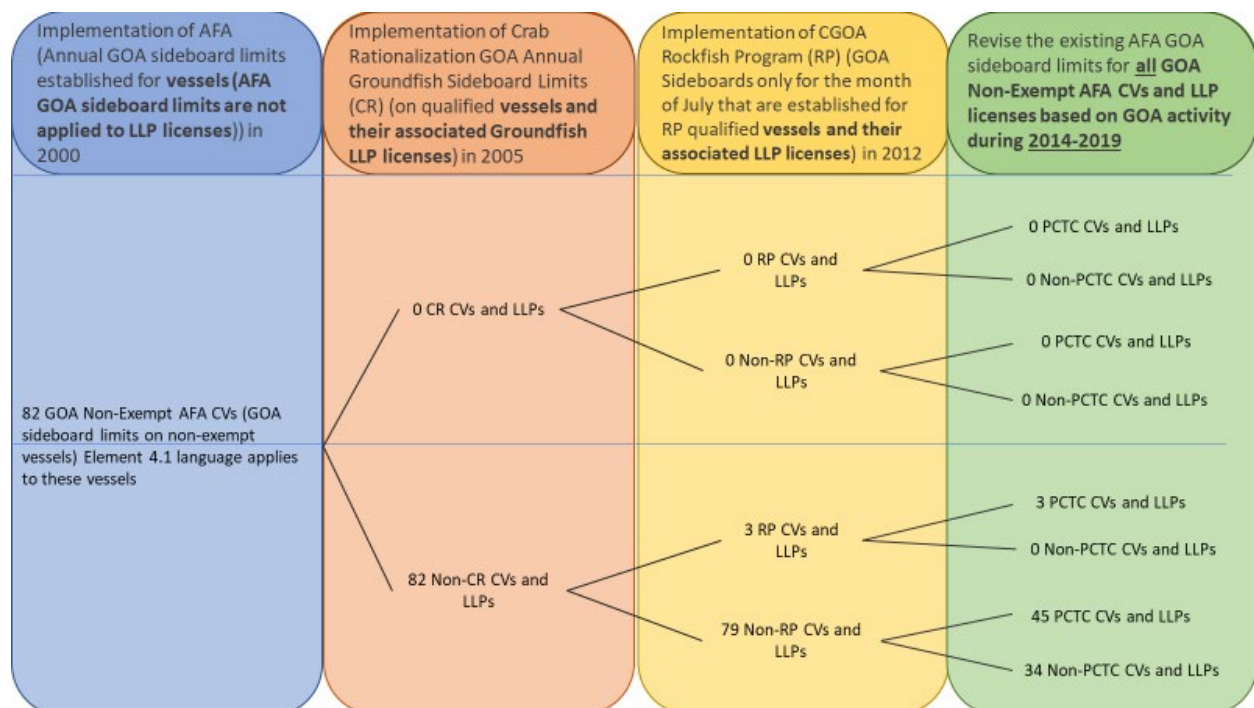


Figure 2-11 Diagram of existing GOA sideboard limits in combination with proposed revised GOA sideboard limits for all non-exempt AFA trawl CVs and LLP licenses (Option 4.1) based on GOA activity during 2009-2019

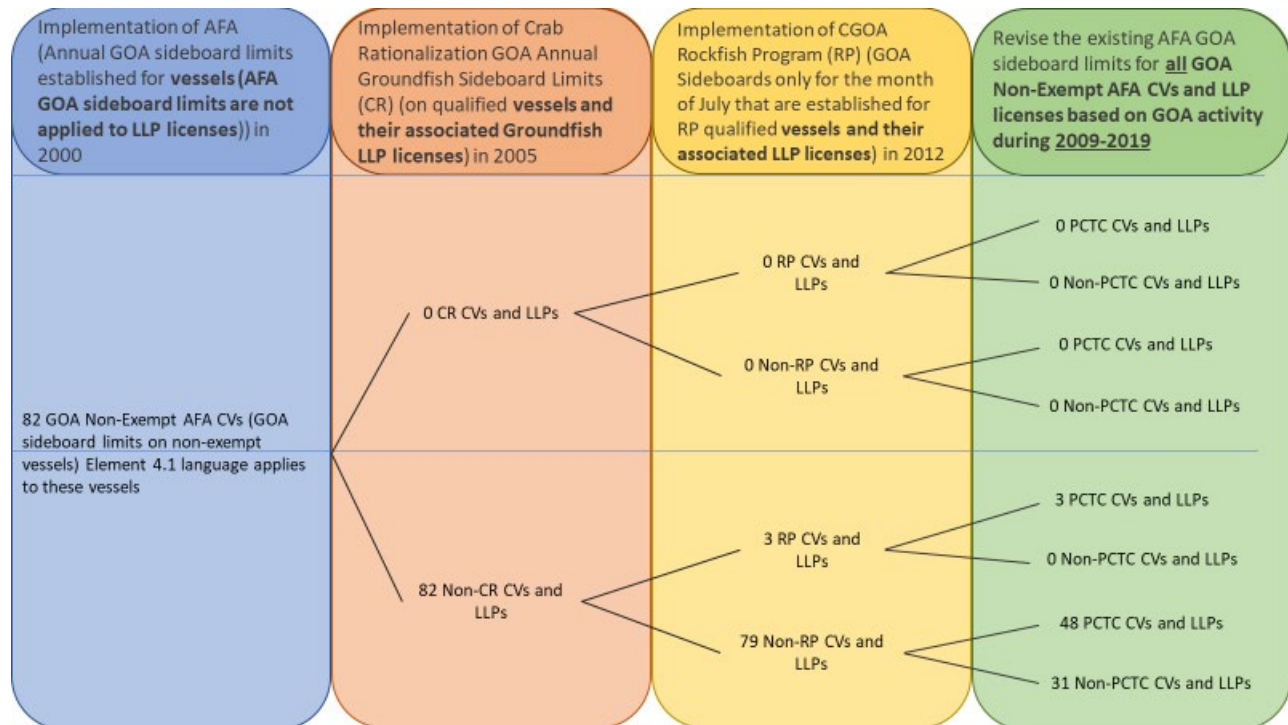


Figure 2-12 Diagram of existing GOA sideboard limits in combination with proposed revised GOA sideboard limits for all non-exempt AFA trawl CVs and LLP licenses (Option 4.1) based on GOA activity during 2004-2019

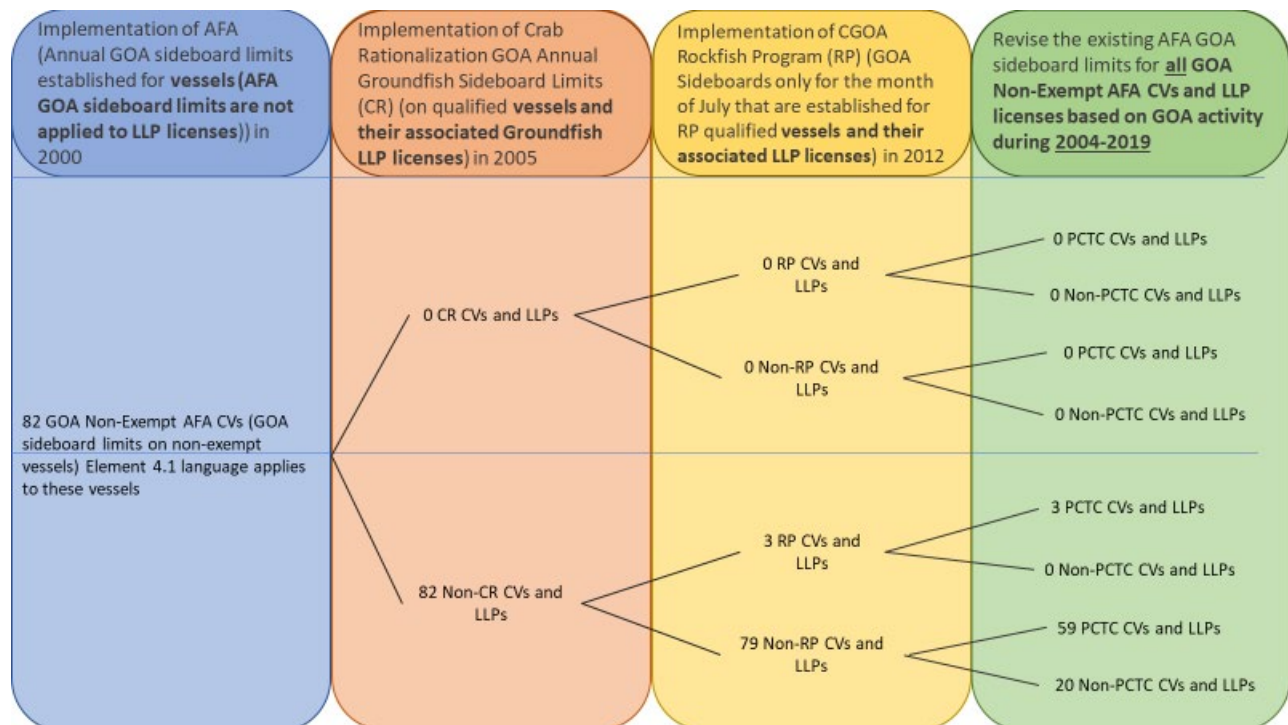


Table 2-124 provides vessel count, LLP license count, existing annual sideboard limits, sideboard harvest, percent of sideboard limit harvested for the non-exempt AFA CVs. Also included in the table is the average sideboard harvested from 2004-2019, 2009-2019, and 2014-2019. As noted in Table 2-124, the non-exempt AFA CVs harvested less than the sideboard limit for every species. As noted in the AFA Program Review (NPFMC, 2017), the GOA pollock is the primary sideboard fishery for the non-exempt AFA CVs. On average, nine vessels participated in the directed fishery for pollock from 2004 to 2019.

Table 2-125 provides the recalculated non-exempt AFA trawl CV GOA groundfish sideboard ratios along with 2021 sideboard limits that would result from those ratios for Option 4.1. The revised sideboard calculation utilized aggregate retained catch of non-exempt AFA CVs of each sideboard species or species group relative to the sum of the TACs for these species or species groups. Years used to calculate the revised sideboards are from Element 2, Options 2.2.1 through 2.2.3. In addition, all CGOA Rockfish Program fishing activity by non-exempt AFA CVs when participating in the Rockfish Pilot Program and the Rockfish Program was removed from the sideboard calculations. With the exception of CGOA Northern rockfish and POP, which are managed via the CGOA Rockfish Program, the sideboard fisheries listed in Table 2-121 are the only GOA sideboard fisheries that are open for directed fishing by the non-exempt AFA CVs and therefore are the only sideboard limits calculated for Option 4.1. GOA groundfish sideboard species listed in Table 2-123 have been insufficient for a directed fishery by sideboarded vessels since implementation in 2000. As a result, directed fishing for the species list in Table 2-123 would remain unchanged under Option 4.1.

As shown in Table 2-125, the calculated sideboard limits for all the non-exempt AFA trawl CVs are lower than the existing non-exempt AFA sideboard limits. These lower sideboard limits shown in Table 2-125 are due to the limited fishing activity by all the non-exempt AFA CVs in these fisheries subject to sideboard limits during the range of years from Element 2 as seen in Table 2-124. Several of the sideboard limits are insufficient to allow directed fishing. These include A season Shumagin (610) pollock, annual WYK (640) and SEO (650) pollock¹⁰³, both A season and B season Western and Central Pacific cod, Western shallow-water flatfish, both Central and Eastern deep-water flatfish, and Eastern POP. To streamline sideboard limits and ease management burden, the Council in June 2021 included language to prohibited directed fishing in regulations for SEO pollock, Western shallow-water flatfish, both Central and Eastern deep-water flatfish, and Eastern POP. In addition, given the reduced sideboard limits for those species that are projected to have sufficient limits for a fishery, it is likely NMFS would require intercooperative management of these fisheries in order for the species to be open for directed fishing.

Note that the recent SOC approval of Amendment 109 to the FMP for Groundfish of the GOA modified the final sideboard limits for the Pacific cod and pollock fisheries. Specifically, the action modified CGOA and WGOA Pacific cod seasonal apportionments to increase the trawl CV sector's A season TAC while proportionally decreasing the sector's B season TAC. The amendment also implemented a regulatory change to combine the CGOA and WGOA trawl CV pollock fishery A and B seasons into a single season (redesignated as the A season) and the C and D seasons into a single season (redesignated as the B season) and change the annual start date of the redesignated pollock B season from August 25 to September 1.

¹⁰³ As a result of Amendment 41 to the GOA Groundfish FMP which prohibited trawling in SEO, the sideboard limit for pollock SEO is zero.

Table 2-124 Vessel count, LLP license count, GOA sideboard limits, sideboard harvest, and percent of sideboard limit harvested by GOA sideboard fishery

Sideboard fishery		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average		
		2004-2019	2009-2019	2014-2019																
Pollock	Number of vessels	10	10	10	10	9	10	9	8	8	9	7	7	8	8	7	6	9	8	7
	Number of LLP licenses	12	13	13	13	12	14	12	11	11	11	10	10	11	10	12	7	11	11	10
	Sideboard limit (1,000 mt)	24	30.9	29.3	24.5	20.2	16.4	27	28.9	33.9	29.7	41.1	41.2	41.2	38.8	41.3	36.0	31.5	34.1	39.9
	Cooperative report harvest (1,000 mt)	6.7	7.9	6.9	6.3	3.2	1.9	5.6	4.4	6.6	12.6	13.1	15.1	13.6	13.6	9.5	5.5	8.3	9.2	11.7
	% of sideboard limit harvested	28	25	24	26	16	11	21	15	19	42	31	36	33	35	23	15	25.0	25.6	28.9
Pacific cod	Number of vessels	10	9	10	7	8	10	9	8	7	9	7	7	8	8	7	3	8	8	7
	Number of LLP licenses	12	11	13	9	10	14	12	11	9	11	10	10	11	10	12	3	11	10	9
	Sideboard limit (1,000 mt)	4.3	4.0	4.9	4.9	4.8	3.8	5.3	5.8	5.8	5.4	5.8	6.8	4.3	4.8	1.2	1.1	4.6	4.6	4.0
	Cooperative report harvest (1,000 mt)	0.4	0.5	0.2	0.6	0.3	0.3	0.9	1.0	0.3	0.4	0.9	0.7	0.3	1.0	0.0	0.2	0.5	0.5	0.5
	% of sideboard limit harvested	8	12	3	12	7	8	17	18	5	7	16	10	7	21	0	18	10.6	11.6	12.0
Arrowtooth flounder	Number of vessels	10	10	10	10	9	10	9	8	8	9	7	6	8	8	7	6	8	8	7
	Number of LLP licenses	12	13	13	13	12	14	12	11	11	11	10	8	11	10	12	7	11	11	10
	Sideboard limit (1,000 mt)	0.8	0.8	0.8	1.0	1.0	0.9	0.9	0.9	2.1	2.1	2.1	2.1	2.1	2.1	1.4	2	1.4	1.7	2.0
	Cooperative report harvest (1,000 mt)	0.0	0.1	0.2	1.0	0.8	0.7	0.4	0.7	0.1	0.5	0.8	0.5	0.1	1.1	0.5	0.6	0.5	0.5	0.6
	% of sideboard limit harvested	2	14	26	102	79	83	49	80	6	25	38	25	5	52	36	30	40.7	39.0	31.0
Pacific ocean perch	Number of vessels	8	8	9	7	9	6	8	6	7	8	7	6	6	6	7	5	7	7	6
	Number of LLP licenses	9	10	11	9	12	9	10	8	9	10	10	8	8	8	12	6	9	9	9
	Sideboard limit (1,000 mt)	1.0	1.0	1.0	1.1	1.1	0.8	1.0	0.9	1.0	1.0	1.2	1.3	1.5	1.5	1.8	1.7	1.2	1.2	1.5
	Cooperative report harvest (1,000 mt)	0.4	0.3	0.2	0.6	0.4	0.3	0.0	0.4	0.0	0.5	0.8	0.6	0.1	0.2	0.2	0.0	0.3	0.3	0.3
	% of sideboard limit harvested	38	30	23	59	36	33	2	47	1	53	65	47	7	13	11	2	29.2	25.6	24.2
Shallow-water flatfish	Number of vessels	6	5	7	5	6	5	7	6	7	7	3	6	6	8	3	1	6	5	5
	Number of LLP licenses	6	5	8	6	7	6	9	8	9	9	4	8	7	10	4	1	7	7	6
	Sideboard limit (1,000 mt)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	1.3	1.1	1.0	1.1	1.3	1.3	1.7	1.8	1.1	1.2	1.4
	Cooperative report harvest (1,000 mt)	0.0	0.0	0.0	0.4	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.2	0.1	0.1	0.0	0.4	0.2	0.2	0.2
	% of sideboard limit harvested	0	0	0	40	12	10	10	7	12	8	30	17	8	9	1	22	11.6	12.1	14.4
Northern rockfish	Number of vessels	5	5	5	5	6	2	4	4	5	6	2	5	6	5	2	2	4	4	4
	Number of LLP licenses	5	5	5	5	6	2	4	4	6	6	2	7	8	7	3	2	5	5	5
	Sideboard limit (1,000 mt)	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Cooperative report harvest (1,000 mt)	0.0	0.1	0.0	0.3	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
	% of sideboard limit harvested	20	57	0	199	189	94	1	81	1	3	16	6	4	5	11	20	44.2	22.1	10.4
Rexsole	Number of vessels	8	7	7	8	8	4	7	7	6	8	7	6	6	8	5	3	7	6	6
	Number of LLP licenses	10	9	8	10	10	5	9	10	8	10	10	8	8	10	8	3	9	8	8
	Sideboard limit (1,000 mt)	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2
	Cooperative report harvest (1,000 mt)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
	% of sideboard limit harvested	0	0	1	8	9	18	37	35	3	54	138	20	2	11	13	13	22.7	31.3	33.0
Deep-water flatfish	Number of vessels	4	2	2	3	3	2	2	2	1	1	2	2	4	4	2	3	2	2	3
	Number of LLP licenses	4	2	2	3	3	2	2	2	1	1	2	2	5	5	3	3	3	3	3
	Sideboard limit (1,000 mt)	0.2	0.3	0.3	0.4	0.5	0.5	0.2	0.2	0.2	0.3	0.4	0.4	0.3	0.29	0.3	0.3	0.3	0.3	0.3
	Cooperative report harvest (1,000 mt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04	0.0	0.0	0.0	0.0	0.0
	% of sideboard limit harvested	2	0	0	4	1	1	9	5	0	0	0	0	0	14	4	0	2.5	3.0	3.1
Flathead sole	Number of vessels	9	10	9	10	9	8	9	7	8	9	7	6	8	8	7	3	8	7	7
	Number of LLP licenses	11	13	12	13	12	11	12	10	11	11	10	8	11	10	12	3	11	10	9
	Sideboard limit (1,000 mt)	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.4	0.3	0.3	0.3	0.36	0.33	0.3	0.4	0.2	0.3	0.3
	Cooperative report harvest (1,000 mt)	0	0	0	0.1	0.1	0	0.1	0.1	0	0	0	0	0.03	0.06	0.1	0.1	0.0	0.0	0.0
	% of sideboard limit harvested	1	12	2	37	53	17	78	64	12	0	0	0	9	19	19	25	21.7	22.0	11.8

Source: AFA Catcher Vessel Intercooperative reports from 2004 through 2019 and BSAI_PCOD_LAPP_GOA_SB_LANDINGS(7-22-21) for vessel and LLP license count.

Table 2-125 GOA groundfish sideboard ratios (aggregate retained catch/TAC) and estimated sideboard limit (mt) using 2021 TACs for all non-exempt AFA CVs and LLP licenses authorized by these vessels for the three sets of years from Element 2

Target Species	Apportionments by season/gear	Area/component	Sideboard ratio ¹	Existing 2021 sideboard limit (mt)	Option 1 (2014-2019)		Option 2 (2009-2019)		Option 3 (2004-2019)	
					Sideboard ratio	sideboard limit (mt)	Sideboard ratio	sideboard limit (mt)	Sideboard ratio	New 2021 sideboard limit (mt)
Pollock	A Season Jan 20 - May 31	Shumagin (610)	0.6047	483	0.038	30	0.057	46	0.077	61
		Chirikof (620)	0.1167	4,871	0.062	2,576	0.064	2,671	0.065	2,713
		Kodiak (630)	0.2028	1,277	0.093	585	0.091	573	0.082	516
	B Season Sep 1 - Nov 1	Shumagin (610)	0.6047	10,689	0.038	670	0.057	1,009	0.077	1,355
		Chirikof (620)	0.1167	1,533	0.062	810	0.064	841	0.065	854
		Kodiak (630)	0.2028	3,655	0.093	1,675	0.091	1,640	0.082	1,478
Annual	WYK (640)	0.3495	1,941	0.020	109	0.026	142	0.025	141	
	SEO (650)	0.3495	3,547	0.000	0	0.000	0	0.000	0	
Pacific cod	A Season Jan 1 - Jun 10	W	0.1331	474	0.007	25	0.009	32	0.007	26
		C	0.0692	454	0.011	75	0.011	71	0.008	53
	B Season Sept 1 - Dec 31	W	0.1331	270	0.007	14	0.009	18	0.007	15
		C	0.0692	254	0.011	42	0.011	40	0.008	29
Shallow-water flatfish	Annual	W	0.0156	207	0.000	0	0.000	0	0.000	0
		C	0.0587	1,648	0.011	309	0.011	309	0.009	253
Deep-water flatfish	Annual	C	0.0647	124	0.002	3	0.002	4	0.002	4
		E	0.0128	48	0.000	0	0.000	0	0.000	0
Rex sole	Annual	C	0.0384	342	0.013	117	0.014	123	0.010	89
Arrowtooth flounder	Annual	C	0.028	1,934	0.010	698	0.011	760	0.012	829
Flathead sole	Annual	C	0.0213	584	0.006	175	0.007	180	0.007	192
Pacific ocean perch	Annual	E	0.0466	331	0.002	14	0.001	7	0.001	7

Source: AKFIN, March 2021

Table originates from Excel file Non-Exempt AFA GOA Sideboard Calculations and BSAI_FOOD_LAPP_GOA_SB_LANDINGS(3-23-21)

Bold font denotes sideboard fisheries likely to be open for directed fishing

¹Determined using a ratio of 1995 to 1997 AFA CV catch to 1995 to 1997 TAC

Like groundfish sideboards, AFA non-exempt CVs and LLP licenses are also restricted by GOA halibut PSC sideboard limits. In June 2021, the Council clarified that the revision to the existing GOA sideboard limits in Option 4.1 are specific to groundfish and would not revise the existing GOA halibut PSC sideboard limits for the AFA non-exempt vessels. Recognizing that the Council could choose to modify the existing AFA GOA halibut PSC sideboard limits at final action, information concerning the GOA halibut PSC sideboard limits are included in the analysis.

The existing GOA halibut PSC sideboard limits are based on the aggregate retained groundfish catch by non-exempt AFA CVs in each PSC target category from 1995 through 1997 divided by the retained catch of all vessels in that fishery from 1995 through 1997 (50 CFR §679.64(b)(4)(ii)). Table 2-122 provides the GOA halibut PSC sideboard limits for all non-exempt AFA CVs for 2021 fishing seasons. As for GOA halibut PSC sideboard for non-exempt AFA CVs, the low numbers of vessels participating in the various seasons result in the data being largely confidential. Because of these disclosure issues, tables showing non-exempt AFA CV PSC by season and target category are not provided. It is noted in the July 2017 AFA Program Review that in no year between 2003 and 2015 were annual AFA halibut PSC sideboard limits in the GOA exceeded,¹⁰⁴ and since publication of the review the limits have not been exceeded as well. On average, non-exempt AFA CVs caught 9.4 to 41.2 percent of their annual halibut PSC limits for shallow-water and deep-water targets, respectively.¹⁰⁵ In comparison, GOA halibut PSC limits for all trawl gear (CVs and C/Ps) have resulted in fishery complex closures during the period. For the deep-water complex which include sablefish, rockfish, deep-water flatfish, rex sole, and arrowtooth flounder, the last halibut PSC closure was on March 7, 2020. For the shallow-water complex, which includes pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, skates, squids, sharks, octopuses, and sculpins, the last halibut PSC closure was on September 2, 2012.

¹⁰⁴ Seasonal limits were exceeded an estimate five times, but the overages were covered by unused apportionments in prior seasons.

¹⁰⁵ Averages do not include halibut PSC taken in the combined species fisheries fifth season.

Given the proposed AFA GOA groundfish sideboard limits are reduced limits relative to the original AFA groundfish sideboard limits, it is likely maintaining the existing AFA GOA halibut PSC sideboard limits in combination with the proposed lower GOA groundfish sideboard limits results in the existing halibut PSC sideboard limits being non-constraining. For example, as noted in Table 2-125, the original sideboard limit for CGOA shallow-water flatfish is 5.87 percent of the TAC, whereas the revised AFA CGOA sideboard limit would range from 0.9 percent to 1.1 percent of the TAC. In contrast, the existing halibut PSC sideboard limits noted in Table 2-122 would remain at 34 percent of the halibut PSC apportioned to the trawl gear shallow-water complex. Although the existing halibut PSC sideboard limits have never been exceeded since 2003, the original intent of GOA sideboards, including the halibut PSC limit, was to limit the potentially for expansion into other fisheries that would not otherwise have been available prior AFA. By revising groundfish sideboard limits to account for potential spill over impacts from the PCTC Program and not revising halibut PSC sideboard limits moves away from the intent of developing comprehensive sideboard limits since CVs subject to the GOA sideboard limits have less incentive to reduce halibut PSC.

In developing revised halibut PSC sideboard limits for all non-exempt AFA CVs and the LLP licenses, the same calculations were used as under the AFA but with catch year options from Element 2. In other words, the sideboard limit would be based on aggregate retained groundfish catch by non-exempt AFA CVs in each PSC target category divided by the aggregated retained groundfish catch of all vessels in each PSC target category. Since CGOA Rockfish Program qualified non-exempt AFA CVs along with other qualified non-AFA trawl CVs participating in a rockfish cooperative receive 117.3 mt of the third season (July 1 through August 1) deep-water species fishery halibut PSC apportionment, CGOA Rockfish Program fishing activity for these AFA CVs will not be included in the halibut PSC sideboard calculation for the third quarter deep-water PSC target category. Table 2-126 provides the sideboard limit calculations for halibut PSC.

Table 2-126 GOA halibut PSC sideboard ratios (directed catch/total directed catch) for all AFA non-exempt CVs and LLP licenses under each of the year combinations from Element 2

Trawl season	Halibut PSC complex	Existing non-exempt AFA CV halibut PSC sideboard ratio ¹	Existing 2021 Sideboard limit (mt)	Option 1 (2014-2019) sideboard ratio		Option 2 (2009-2019) sideboard ratio		Option 3 (2004-2019) sideboard ratio	
				Sideboard ratio	2021 sideboard limit (mt)	Sideboard ratio	2021 sideboard limit (mt)	Sideboard ratio	2021 sideboard limit (mt)
First seasonal allowance (Jan 20 - Apr 1)	Shallow-water	0.34	131	0.061	24	0.064	24	0.065	25
	Deep-water	0.07	9	0.050	7	0.043	6	0.041	6
Second seasonal allowance (Apr 1 - Jul 1)	Shallow-water	0.34	29	0.061	5	0.064	5	0.065	5
	Deep-water	0.07	18	0.050	13	0.043	11	0.041	11
Third seasonal allowance (Jul 1 - Sep 1)	Shallow-water	0.34	41	0.061	7	0.064	8	0.065	8
	Deep-water	0.07	24	0.050	17	0.043	15	0.041	14
Fourth seasonal allowance (Sep 1 - Oct 1)	Shallow-water	0.34	18	0.061	3	0.064	3	0.065	3
	Deep-water	0.07	5	0.050	4	0.043	3	0.041	3
Fifth seasonal allowance (Oct 1 - Dec 31)	All targets	0.205	52	0.108	28	0.107	27	0.105	27

Source: TCCP_RETAINED_GC_COMPLEX(3-23-21)

¹Determined using a ratio of 95-97 non-exempt AFA CV catch in each PSC target category divided by the 95-97 retained catch of all vessels in that fishery

In comparing the existing halibut PSC sideboard limits with the revised halibut PSC sideboard limits, the revised halibut PSC sideboard limits are in all cases smaller than the existing sideboard limits. The revised halibut PSC sideboard limits for the shallow-water complex relative to existing halibut PSC sideboard limits could negatively impact some CGOA shallow-water complex fisheries including CGOA shallow-water flatfish, CGOA rex sole, CGOA flathead sole, and CGOA arrowtooth flounder. Impacts of revised halibut PSC limits could be reduced since any unused halibut PSC from one season would roll to the next season. Low halibut PSC sideboard limits in Table 2-126 would not impact the pollock sideboard

fisheries in Table 2-125, since trawl vessels using pelagic trawl gear are not closed to directed pollock fishing when the halibut PSC limits specified for shallow-water species are reached (50 CFR §679.21(d)(6)).

Nevertheless, if the Council is concerned that revised halibut PSC sideboard limits are too constraining, the revised halibut sideboard limits could be aggregated at the seasonal and complex level to provide greater flexibility for the AFA non-exempt trawl CVs in their GOA groundfish fisheries. Table 2-127 provides the aggregated GOA halibut PSC sideboard limits under each of the qualifying year options from Element 2. Providing an aggregate halibut PSC sideboard limit would provide greater flexibility for the cooperatives to assign halibut PSC sideboard limits to those GOA groundfish sideboard fisheries that have the greatest value. Since the AFA cooperatives would likely continue to carefully coordinate their harvest of the GOA sideboard limits so as not exceed either groundfish or halibut PSC sideboard limits, NMFS has indicated it can accommodate management of aggregate halibut PSC sideboard limits.

Table 2-127 GOA halibut PSC sideboard ratios (directed catch/total directed catch) aggregated at the season and complex level for all AFA non-exempt CVs and LLP licenses under each of the year combinations from Element 2

	Option 1 (2014-2019)	Option 2 (2009-2019)	Option 3 (2004-2019)
Sideboard ratio	0.072	0.072	0.071
2021 halibut sideboard limit (mt)	123	123	121

Source: TCCP_RETAINED_GC_COMPLEX(3-23-21)

2.9.4.3. Option 4.2 – AFA GOA-exempt CVs LLP license restriction

Option 4.2 would prohibit AFA GOA sideboard exempt vessels, non-AFA vessels assigned to an LLP license and CVs assigned to under 60' LLP licenses with AI transferable endorsement that allocated annual BSAI Pacific cod CQ to a cooperative from leasing their BSAI Pacific cod CQ as a condition of benefiting from GOA sideboard exemption. June 2021, the Council added language to Option 4.2 that would allow leasing of BSAI CQ for the calendar year if the vessel assigned to the qualified GOA exempt LLP license do not fish in the GOA during the calendar year, except for the CGOA Rockfish Program. In addition to this exception, Suboption 4.2.1 would authorize holders of LLP licenses and AI transferable endorsements with small amounts of BSAI Pacific cod QS assigned to AFA GOA exempt and non-AFA vessels to lease their CQ while benefiting from GOA sideboard exemption.

Option 4.2 requires the cooperatives to monitor GOA AFA and non-AFA exempt vessels assigned to LLP licenses with BSAI Pacific cod QS or AI transferable endorsements with similar QS to ensure they do not lease their BSAI Pacific cod CQ and to implement a penalty structure for violations. Tracking and monitoring of BSAI Pacific cod CQ leases by exempt CVs can be better accomplished by the cooperatives. NMFS does not have the ability to track individual LLP license holder leases within a cooperative during the fishing year. Recognizing this challenge with Option 4.2, the Council during its December 2020 meeting modified the option to require cooperatives to monitor and enforce exempt CVs assigned to LLP licenses that receive BSAI Pacific cod QS and AI transferable endorsements that received BSAI Pacific cod QS to ensure they do not lease their CQ as condition of their GOA sideboard exemption.

As part of an annual cooperative report the Council is considering as part of the PCTC Program (Element 12), cooperatives would be required to report leased BSAI Pacific cod CQ by exempt CVs during the fishing year and enforcement action taken. Of course, a cooperative report is once a year so is limited in its ability as a tracking and monitoring tool. Nevertheless, requiring cooperatives to monitor exempt AFA CVs to ensure they do not lease their BSAI Pacific cod CQ while benefiting from sideboard exemptions along with including any leasing activity by exempt AFA CVs in their annual report is likely the only method available to ensure compliance.

Table 2-128 and Table 2-129 provide the number of PCTC qualified GOA exempt AFA CVs and non-AFA CVs and the associated percent of BSAI Pacific cod qualifying history assigned to qualified LLP licenses authorizing these vessels. Looking at allocations with C season included, under Option 2.2.1 (2014-2019), the number of PCTC qualified GOA exempt AFA CVs is 12 with the aggregate percent of qualified catch history ranging from 14.1 percent (no drop year) to 15.3 percent (drop two years). Option 2.2.2 (2009-2019) would qualify 14 exempt AFA CVs with an aggregate range of qualifying catch history from 13.3 percent (no drop year) to 13.8 percent (drop two years). Option 2.2.3 (2004-2019) would qualify 15 exempt AFA CVs with an aggregate range of qualifying catch history from 12.3 percent (no drop year) to 12.5 percent (drop two years). Comparing the percent of qualifying catch history with and without C season shows that without C season included generally increases the aggregate qualifying catch history for the qualified exempt AFA CVs by 0.2 to 0.3 percent.

For non-AFA CVs with C season included, under Option 2.2.1 (2014-2019), the number of qualified non-AFA CVs is 14 with the aggregate percent of qualified catch history ranging from 20.6 percent (no drop year) to 21.3 percent (drop two years). Option 2.2.2 (2009-2019) would qualify 15 non-AFA CVs with an aggregate range of qualifying catch history from 22.3 percent (no drop year) to 22.4 percent (drop two years). Option 2.2.3 (2004-2019) would qualify 15 non-AFA CVs with an aggregate range of qualifying catch history from 20.9 percent (no drop year) to 21.2 percent (drop two years). Comparing the percent of qualifying catch history with and without C season shows that without C season included generally reduces the aggregate qualifying catch history for the qualified non-AFA CVs by 1 to 1.5 percent. Not included in Table 2-129 are the non-AFA CVs that are named on LLP licenses with transferable AI endorsements. As noted in Table 2-91, the number of these CVs under Option 2.2.1 (2014-2019) with C-season included is five with an aggregate percent of qualified catch history of 0.62 percent. Under Option 2.2.2 (2009-2019) the number of qualified CVs is seven with an aggregate percent of qualified catch history of 0.59 percent. Finally, under Option 2.2.3 (2004-2019), the number of qualified CVs is eight with an aggregate percent of qualified catch history of 0.99 percent.

Table 2-128 Number of PCTC Program qualified exempt AFA CVs and the average percent of BSAI Pacific cod qualifying history assigned to the LLP licenses authorizing the GOA sideboard exempt AFA CVs

Qualifying catch year options	Number of exempt AFA CVs qualified for the PCTC Program	Average percent of QS (with C-season)		
		No drop	Drop 1	Drop 2
Option 2.2.1 (2014-2019)	12	14.1%	14.7%	15.3%
Option 2.2.2 (2009-2019)	14	13.3%	13.5%	13.8%
Option 2.2.3 (2004-2019)	15	12.3%	12.5%	12.5%
Qualifying catch year options	Number of exempt AFA CVs qualified for the PCTC Program	Percent of QS (without C-season)		
		No drop	Drop 1	Drop 2
Option 2.2.1 (2014-2019)	12	14.3%	14.9%	15.5%
Option 2.2.2 (2009-2019)	14	13.5%	13.6%	13.8%
Option 2.2.3 (2004-2019)	15	12.6%	12.6%	12.6%

Source: BSAI_PCOD_LAPP_Coop_split_exempt (11-9-20)

Table 2-129 Number of PCTC Program qualified non-AFA CVs and the average percent of BSAI Pacific cod qualifying history assigned to the LLP licenses authorizing the non-AFA CVs

Qualifying catch year options	Number of non-AFA CVs qualified for the PCTC Program	Average percent of QS (with C-season)		
		No drop	Drop 1	Drop 2
Option 2.2.1 (2014-2019)	14	20.6%	20.9%	21.3%
Option 2.2.2 (2009-2019)	15	22.3%	22.4%	22.4%
Option 2.2.3 (2004-2019)	15	20.9%	21.0%	21.2%
Qualifying catch year options	Number of non-AFA CVs qualified for the PCTC Program	Percent of QS (without C-season)		
		No drop	Drop 1	Drop 2
Option 2.2.1 (2014-2019)	14	19.2%	19.5%	19.8%
Option 2.2.2 (2009-2019)	15	21.0%	21.2%	21.4%
Option 2.2.3 (2004-2019)	15	20.0%	20.1%	20.3%

Source: BSAI_FCOD_LAPP_Coop_split_exempt (11-9-20)

Table 2-130 and Table 2-131 provided annual retained catch and average retained catch of GOA pollock, Pacific cod, and other aggregated groundfish fisheries from 2004 through 2019 by the PCTC Program qualified exempt AFA CVs based on 2004-2019 qualifying year option. Table 2-132 and Table 2-133 show the same data for qualified exempt non-AFA CVs which also includes those CVs named on LLP licenses with AI transferable endorsements. Data was included only for the 2004 through 2019 qualifying years option since it provides the broadest impact on the GOA groundfish fisheries relatively to other two qualifying year options, and the catch data for the other two qualifying years options would be masked to prevent divulging confidential data. As indicated in Table 2-131, the CGOA pollock fishery was the primary GOA fishery for the qualified exempt AFA CVs followed by CGOA Pacific cod, flatfish, and rockfish fisheries. For qualified exempt non-AFA CVs, Table 2-133 indicates that CGOA pollock fishery is the primary GOA fishery for these vessels followed by the WGOA pollock fishery for most years and the flatfish fishery.

Table 2-130 Number of PCTC Program qualified GOA sideboard exempt AFA CVs (using 2004-2019 qualifying year option) that were active in the GOA by groundfish fisheries from 2004 through 2019

Year	Pollock		Pacific cod		Atka mackerel	Flatfish	Rockfish	Sablefish
	CGOA	WGOA	CGOA	WGOA				
2004	13	1	13	1	5	13	13	12
2005	13	1	13	1	5	13	13	13
2006	13	0	13	0	5	13	13	13
2007	13	0	13	0	7	13	12	10
2008	13	0	13	0	3	13	13	12
2009	13	0	13	0	5	13	12	9
2010	12	0	12	0	5	12	12	9
2011	12	0	13	0	2	13	12	8
2012	13	0	13	0	2	13	13	9
2013	13	0	13	0	0	13	13	4
2014	13	0	13	0	2	13	13	7
2015	13	0	13	0	11	13	13	11
2016	13	0	13	0	9	13	13	12
2017	13	1	13	1	4	13	13	12
2018	15	1	14	1	3	15	15	14
2019	13	2	13	2	7	13	13	11

Source: tccp_exempt_goa_landings(4-29-20)

Table 2-131 Retained catch (mt) for PCTC Program qualified GOA sideboard exempt AFA CVs (using 2004-2019 qualifying year option) by GOA groundfish fisheries from 2004 through 2019

Year	Pollock		Pacific cod		Atka mackeral	Flatfish	Rockfish	Sablefish
	CGOA	WGOA	CGOA	WGOA				
2004	11,521	*	4,505	*	1	1,327	2,510	145
2005	13,181	*	2,926	*	1	2,290	2,081	127
2006	15,699	0	1,703	0	10	4,517	2,104	114
2007	13,963	0	1,198	0	4	3,304	35	7
2008	14,877	0	2,952	0	0	6,513	122	7
2009	8,449	0	2,168	0	2	4,810	47	9
2010	16,473	0	4,479	0	0	3,757	51	15
2011	19,358	0	3,592	0	*	5,539	124	31
2012	22,976	0	2,483	0	*	2,917	87	5
2013	24,574	0	1,627	0	0	3,461	140	4
2014	40,618	0	1,207	0	*	3,358	116	16
2015	46,701	0	1,424	0	2	1,809	70	17
2016	47,758	0	885	0	156	2,955	218	48
2017	52,420	*	747	*	41	2,002	291	26
2018	41,737	*	209	*	13	981	474	7
2019	27,902	*	73	*	6	617	252	4

Source: tcp_exempt_goa_landings(4-29-20)

* Denotes confidential information

Table 2-132 Number of PCTC Program qualified non-AFA CVs* (using 2004-2019 qualifying year option) that are active in the GOA by groundfish fisheries from 2004 through 2019

Year	Pollock		Pacific cod		Atka mackeral	Flatfish	Rockfish	Sablefish
	CGOA	WGOA	CGOA	WGOA				
2004	9	10	9	11	6	11	10	6
2005	9	11	9	11	8	13	12	7
2006	7	11	7	11	4	13	11	6
2007	4	10	4	11	8	13	13	5
2008	6	9	6	9	7	13	11	5
2009	3	9	3	9	3	12	10	3
2010	7	9	7	9	5	13	12	11
2011	11	10	11	11	4	13	12	9
2012	11	11	11	11	3	14	14	7
2013	13	11	13	11	4	15	13	5
2014	12	10	13	10	3	15	14	9
2015	10	9	10	9	7	14	12	12
2016	11	12	11	12	14	15	14	13
2017	7	13	10	13	11	14	14	13
2018	9	12	7	12	9	14	14	14
2019	11	13	11	13	9	14	14	13

Source: tcp_exempt_goa_landings(3-25-21)

* Includes CVs assigned to LLP licenses with AI transferable endorsements

Table 2-133 Retained catch (mt) for PCTC Program qualified non-AFA CVs* (using 2004-2019 qualifying year option) by the GOA groundfish fisheries from 2004 through 2019

Year	Pollock		Pacific cod		Atka mackerel	Flatfish	Rockfish	Sablefish
	CGOA	WGOA	CGOA	WGOA				
2004	6,311	8,626	1,888	714	0	1,421	1,365	91
2005	8,608	13,665	1,504	1,897	3	2,259	1,103	60
2006	5,746	11,413	722	2,254	7	2,708	1,196	64
2007	4,115	8,966	1,533	1,769	2	3,431	422	1
2008	4,069	5,845	1,745	2,279	0	3,307	658	5
2009	2,916	6,021	1,283	1,052	0	4,450	10	5
2010	7,481	8,975	2,702	1,748	0	4,072	404	27
2011	8,923	8,681	2,026	1,423	0	2,539	688	36
2012	10,506	11,557	2,181	3,006	0	1,645	48	4
2013	13,365	2,200	3,333	3,182	0	2,364	48	1
2014	23,804	3,286	4,050	3,704	1	2,166	19	4
2015	21,657	12,150	3,074	3,066	0	1,697	26	18
2016	15,732	27,071	1,380	3,239	8	2,168	102	26
2017	11,864	27,666	593	3,008	6	1,434	86	10
2018	13,979	14,710	175	501	30	2,120	147	10
2019	13,953	13,067	101	647	5	1,577	188	39

Source: tccp_exempt_goa_landings(3-25-21)

* Denotes confidential information

In June 2021, the Council added language to Option 4.2 that would allow vessels assigned to PCTC qualified GOA sideboard exempt LLP licenses to lease the BSAI CQ assigned to the sideboard exempt LLP license if they do not fish in the GOA during the calendar year. The one exception is that vessels assigned to GOA sideboard exempt LLP licenses could continue to fish in the CGOA Rockfish Program and still lease their Pacific cod CQ. This new language provides greater flexibility for those GOA exempt CVs assigned to an LLP license that generates annual BSAI Pacific cod CQ assigned to a cooperative to lease that CQ if the vessel authorized by the LLP license does not fish in the GOA. This flexibility could be important for GOA exempt CVs that are not designed to deliver Pacific cod shoreside (i.e., lack hold capacity) in addition to having a limited offshore market since PCTC Program eligible C/Ps may not be able to provide markets for all offshore designed CVs. The combination of having a CV designed only for offshore deliveries, limited markets for offshore deliveries of Pacific cod CQ, and a prohibition on leasing of CQ for GOA exempt LLP licenses could have resulted in Pacific cod CQ being stranded.

There are currently seven eligible GOA exempt vessels authorized by LLP licenses that would be allocated BSAI Pacific cod QS that have delivered offshore in the BSAI Pacific cod fishery. Of those seven vessels, three vessels have not been active in the GOA since 2003. The holders of these three PCTC Program eligible LLP licenses that authorizes these three vessels could choose to lease their BSAI Pacific cod CQ if the holders do not have a market to deliver their CQ or if they perceive there is an economic advantage to focusing their fishing effort in other BSAI groundfish fisheries rather than harvesting their CQ.

Suboption 4.2.1 would authorize GOA sideboard exempt AFA CVs and non-AFA CVs, to include those CVs named on an LLP license with transferable AI endorsement, to lease their BSAI Pacific cod CQ while maintaining their GOA sideboard exempt status if the qualified LLP license has less than 200 mt, 400 mt, or 600 mt of average annual qualifying BSAI Pacific cod catch history. Since prohibiting GOA sideboard exempt AFA CVs and non-AFA CVs from leasing their BSAI Pacific cod CQ would be monitored and enforced by cooperatives, by extension the vessels that qualify under Suboption 4.2.1 would also likely be monitored and enforced by the cooperatives. To provide an indication of the number of LLP licenses that could lease their BSAI Pacific cod CQ while also benefiting from GOA sideboard exemptions, Table 2-134 and Table 2-135 provide the number of PCTC Program qualified LLP licenses with less than 200 mt, 400 mt, and 600 mt of average annual qualifying Pacific cod catch history for each of the Element 2 qualifying year options (2.2.1 through 2.2.3) including C season. Note that non-AFA

CVs named on an LLP license with a transferable AI endorsement are not included in Table 2-135. However, since all of the LLP licenses with a transferable AI endorsement that would qualify under each of the qualifying year options have less than 200 mt of average annual Pacific cod QS, the BSAI Pacific cod CQ generated from the QS assigned to the AI endorsements for all of these LLP licenses could be leased while maintaining their GOA sideboard exemption status under any average annual Pacific cod QS option under consideration.

Looking at Table 2-134, using 2014-2019 qualifying catch history with no drop year option, of the 12 PCTC Program eligible LLP licenses authorizing AFA GOA exempt CVs (see Table 2-89), five of these LLP licenses have less than 200 mt of average annual qualifying BSAI Pacific cod catch history and therefore could lease their BSAI Pacific cod CQ and still be exempt from GOA sideboard limits. At 400 mt of average annual qualifying BSAI Pacific cod catch history, an additional two LLP licenses that authorize AFA GOA sideboard exempt CVs to fish could lease their BSAI Pacific cod CQ and be exempt from GOA sideboard limits. Finally, at less than 600 mt of average annual qualifying BSAI Pacific cod catch history, an additional two LLP licenses could lease their BSAI Pacific cod CQ and still be exempt from GOA sideboard limits. For the LLP licenses

Table 2-134 Number of PCTC Program qualified LLP licenses authorizing AFA GOA sideboard exempt CVs with less than 200 mt, 400 mt, and 600 mt of average annual qualifying Pacific cod catch history using Element 2 qualifying year options that could lease their BSAI Pacific cod CQ

Average annual Pacific cod QS	Option 2.2.1 (with C-season)		
	2014-2019 (no drop)	2014-2019 (drop 1)	2014-2019 (drop 2)
200 mt	5	4	4
400 mt	2	3	3
600 mt	2	2	1
Average annual Pacific cod QS	Option 2.2.2 (with C-season)		
	2009-2019 (no drop)	2009-2019 (drop 1)	2009-2019 (drop 2)
200 mt	8	8	7
400 mt	2	2	3
600 mt	1	1	1
Average annual Pacific cod QS	Option 2.2.3 (with C-season)		
	2004-2019 (no drop)	2004-2019 (drop 1)	2004-2019 (drop 2)
200 mt	11	10	10
400 mt	2	3	3
600 mt	0	0	0

Source: GOA Sideboard exemption to lease BSAI QS(3-29-21)

Table 2-135 Number of PCTC Program qualified LLP licenses authorizing non-AFA CVs with less than 200 mt, 400 mt, and 600 mt of average annual qualifying Pacific cod catch history using Element 2 qualifying year options that could lease their BSAI Pacific cod CQ

Average annual Pacific cod QS	Option 2.2.1 (with C-season)		
	2014-2019 (no drop)	2014-2019 (drop 1)	2014-2019 (drop 2)
200 mt	3	3	2
400 mt	6	5	4
600 mt	1	2	3
Average annual Pacific cod QS	Option 2.2.2 (with C-season)		
	2009-2019 (no drop)	2009-2019 (drop 1)	2009-2019 (drop 2)
200 mt	6	5	5
400 mt	3	3	3
600 mt	3	2	1
Average annual Pacific cod QS	Option 2.2.3 (with C-season)		
	2004-2019 (no drop)	2004-2019 (drop 1)	2004-2019 (drop 2)
200 mt	8	7	7
400 mt	2	3	3
600 mt	1	1	1

Source: GOA Sideboard exemption to lease BSAI QS(3-29-21)

2.9.5. Element 5 – Processor and Community Provisions

The Council’s PA is shown in **bold** below.

5.1. No closed class of processors; all processors with an eligible FPP or FFP are eligible to process BSAI Pacific cod CQ under this program (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships).

5.2. Limit (sideboard) on directed BSAI Pacific cod CQ that can be delivered by trawl CVs to eligible C/Ps acting as motherships. The sideboard would be based on BSAI Pacific cod processing history by eligible C/Ps during qualifying years under Element 2. **The sideboard will be assigned to the LLP license authorizing the C/P to act as a mothership in the BSAI Pacific cod fishery.**

Option 5.2.1: Each eligible C/P acting as a mothership may process up to the higher of 1) 125% of the eligible C/P’s processing history (percentage based on qualifying years selected in Element 2.2 no drop year); or 2) the history (percentage based on qualifying years selected under Element 2.2) from LLP licenses that are owned (in excess of 75%) directly or indirectly by the owner of a C/P LLP eligible for the offshore sector of the target non-CDQ BSAI Pacific cod trawl CV fishery (as of December 31, 2019), not to exceed 125% of the eligible C/P’s processing history (percentage based on qualifying years selected in Element 2.2 no drop year).

Option 5.2.2: Each eligible C/P acting as a mothership may process up to the eligible C/P’s processing history (percentage based on qualifying years selected in Element 2.2).

5.3. Limit number of trawl CVs in the directed BSAI Pacific cod fishery that can deliver to eligible C/Ps acting as motherships. Trawl CVs can qualify for the offshore sector in one of two ways:

An LLP license that is owned (in excess of 75%) directly or indirectly by the owner of a C/P LLP eligible for the offshore sector of the target non-CDQ BSAI Pacific cod fishery (as of December 31, 2019)

An LLP license in which a) 90% or b) 75% or more of the quota arising from the history of the LLP license qualifying for the non-CDQ BSAI trawl CV Pacific cod fishery was delivered offshore during the qualifying years selected in Element 2.2.

Only initial quota arising from the history of an LLP license qualifying for the offshore sector will be permitted to be delivered offshore. Only vessels that are assigned LLP licenses that qualify for the offshore sector will be permitted to make offshore deliveries. Vessels using LLP licenses that are permitted to deliver offshore may also deliver any or all of the quota derived from the LLP license to shorebased or floating processors.

5.4. Allocation of QS to processors (this option is only applicable to Bering Sea processors and eligible C/Ps if AI provisions are selected under element 6):

Onshore and offshore processors with an eligible FFP or FPP (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships) that have history of processing in the federal BSAI Pacific cod trawl CV fishery will be eligible to receive a percentage of total QS based on each onshore processor's and offshore processor's processing history. To be used, the processor's CQ would be transferred to the CV cooperative.

If a processor holding QS does not associate with a cooperative, that processor's CQ will be divided among cooperatives in the same proportion as the processor's CQ assigned to individual cooperatives by the associated processor that year relative to total processor derived CQ that was issued that year.

If a processor associated with more than one cooperative during a year, the CQ derived from their processor permit would be divided between the cooperatives in the same proportion as the CQ derived from LLP licenses.

Option: A cooperative cannot assign a greater proportion of the CQ resulting from processor held QS to an LLP license owned by that processor for harvest by a vessel owned by that processor than the LLP license would have brought into the cooperative absent any processor held QS. The cooperative will monitor this provision and include reporting on harvest of CQ resulting from processor held QS in the BSAI Pacific cod cooperative annual report.

Percent of QS to be allocated to eligible processors:

- Option 5.4.1: 5%
- Option 5.4.2: 10%
- Option 5.4.3: 15%
- Option 5.4.4: 20%
- Option 5.4.5: 22.5%¹⁰⁶**
- Option 5.4.6: 25%
- Option 5.4.7: 30%

Processing history years (including any drop year option selected in element 2.2) to receive QS are the same as harvester years in Element 2.

Processors that are no longer active (no longer hold an FPP) would not be issued QS. The processing history associated with those processors would be deducted from the total amount of eligible processing history during the qualifying years when calculating the distribution of QS to processors.

¹⁰⁶ Council selected 22.5% as its preferred alternative. The processor allocation of 22.5% of the total QS falls within the scope of the analysis that was considered by the Council.

Element 5.1 states that there would not be a closed class of processors. Any shorebased processor with a valid FPP, and all other required permits, would be allowed to process BSAI Pacific cod harvested under the proposed PCTC Program structure up to the processor use cap¹⁰⁷ (see Element 8.4) in addition to deliveries from CVs that may participate in a limited access fishery.¹⁰⁸ Processors would also be allowed to take deliveries from other harvest sectors that have a Pacific cod apportionment. In addition, any processing vessel that is not a C/P that holds a valid FPP and has all other required permits would be allowed to process Pacific cod harvested under the proposed cooperative structure up to the processor use cap (see Element 8.4) or from CVs that may participate in a C season limited access fishery. C/Ps that qualify to act as a mothership for Pacific cod in the BSAI, under BSAI Amendment 120, would be allowed to process BSAI Pacific cod from the directed trawl CV sector fisheries, but the total amount may be more limited by processing limitations (Element 5.2 and Element 5.3) on Pacific cod than by processor use caps noted in Element 8.4. Finally, C/Ps that do not qualify to act as a mothership for Pacific cod in the BSAI, under BSAI FMP Amendment 120, would not be allowed to take directed Pacific cod cooperative or limited access (C season) deliveries from the BSAI trawl CV fishery, as is true under the status quo. Element 5.4 states that only the two C/Ps that qualify, under BSAI FMP Amendment 120, are allowed to be allocated QS based on their processing history. The C/P firms that do not qualify to process BSAI Pacific cod could not process any QS they are allocated because of owning LLP licenses with qualifying CV catch history, which is the intent of Element 5.4. The only use for that allocated Pacific cod would be to assign it to a trawl CV the firm owns (if they own a trawl CV) and deliver it to an eligible processor or lease the CQ to an unaffiliated trawl CV for delivery to an eligible processor.

Data presented in this section shows the quantity of Pacific cod processed and number of processors by sector for the years 2004 through 2019. AKFIN summaries of CAS data were utilized to provide quantitative estimates.¹⁰⁹ Only BSAI Pacific cod harvested in the trawl CV Pacific cod target fishery are included in the summaries. Processors that only took deliveries of BSAI Pacific cod taken in state waters fisheries or incidentally to other federal target fisheries are excluded. Those data are not included because catches and deliveries of Pacific cod in those fisheries are not directly impacted by the proposed PCTC Program. State fishery catches will be deducted, by the State of Alaska, from the GHF which is accounted for before setting the TAC. Incidental catches will be deducted from the ICA(s) that are established by reducing the TAC(s) allocated to the PCTC Program before the cooperative allocations are made.

Table 2-136 provides a count of the years processing firms were active (took targeted federal trawl CV Pacific cod deliveries harvested from the BSAI). These counts represent all the processing firms (including C/Ps that are no longer eligible to process Pacific cod as a mothership) that were reported in the CAS data. In addition to these counts, there were small amounts of deliveries in 2015 and 2017 that did not list a processor in the data but did list a harvest vessel. The total amount of those deliveries was 156 mt. Those counts and data are excluded from the summaries in this section, since they are relatively small amounts and cannot be attributed to a processing firm.

¹⁰⁷ The Council's preferred alternative exempts AI shoreplants from the limit.

¹⁰⁸ A trawl CV limited access fishery results from not allocating C season BSAI Pacific cod to cooperatives. Other CV sectors deliveries to the processors would not count against the cap. Only deliveries Pacific cod harvested with CQ associated with the PCTC Program.

¹⁰⁹ The processing data was provided by AKFIN in the following files BSAI_PCOD_LAPP_Processors(4-9-20) and harvest data with processor information in BSAI_TRW_LLP_Landings(4-10-20).

Table 2-136 Active processor counts during the three qualifying periods

Firm	2004-2019	2009-2019	2014-2019
1	1	1	1
2	1	1	0
3	1	1	1
4	1	0	0
5	1	1	1
6	2	2	2
7	2	0	0
8	2	0	0
9	3	3	1
10	3	3	3
11	4	4	4
12	4	4	4
13	6	1	0
14	8	7	4
15	14	9	5
16	14	11	6
17	15	10	6
18	15	10	6
19	16	11	6
20	16	11	6
21	16	11	6
22	16	11	6
Active Processor Counts	22	19	17

Source: AKFIN Summary of CAS data. BSAI_PCOD_LAPP_Processors(4-9-20): Procs Years Active

Data in this section are reported at the firm level and not the plant level. Firms that had more than one plant active in a year are reported as the firm being active that year and not a count of each plant¹¹⁰. Data are reported at the firm level because it is assumed that processors will operate their plants in a rational manner and will have the ability to move both quota and harvest vessels that deliver to them between plants as needed. Processing ownership and use caps will be implemented and tracked at the firm level.

In total, there were 22 different firms that reported taking targeted BSAI Pacific cod deliveries from trawl CVs that were fishing in the BSAI Federal or parallel fisheries during the 2004 through 2019 period. Landings of targeted AI Pacific cod in the parallel fishery before receiving a transferable AI endorsement (2004 through September 13, 2009) in addition to legal landings of targeted Pacific cod in the parallel and federal fishery after receiving a transferable AI endorsement would qualify for processing history if delivered to an eligible processor.

Three of the firms only took deliveries from 2004 through 2008 and five firms only took deliveries from 2004 through 2013. These firms may not qualify for an allocation of QS since they were not active during some of the qualifying periods and some of the firms may no longer hold a valid processing permit. In other words, some of the processors that were active may not qualify since they are no longer a “person” as defined in regulations. This issue is discussed in greater detail later in this section of the paper.

The 22 firms that were active during the period operated 35 different processing facilities, 14 shorebased plants and 21 processing vessels (see Table 2-137). The processing vessels included inshore floating processors, true motherships (vessels that only act as an at-sea mothership during the entire year), and C/Ps acting as motherships (but only two qualify to act as a mothership under this action). Vessels were aggregated into a single group so that catch information could be reported. Without the aggregations, the information in most years before 2016 would be considered confidential. Shoreside plant locations (city as reported in the Intent to Operate files) included Adak, Akutan, Anchorage, Unalaska/Dutch Harbor,

¹¹⁰ Plant refers to the each shorebased processing plant, floating processor, C/P, and true mothership that processed Pacific cod harvested from the BSAI and has an intent to operate number. A firm may own or control more than one physical processing plant.

King Cove, and Sand Point. C/P's Intent to Operate city was primarily reported as Seattle. However, Unalaska/Dutch Harbor, King Cove, Kirkland, Renton, and Tacoma were also listed sporadically in the data. Floating processor data was listed as Seattle, but discussions with the owners of those vessels confirm that the vessels operated within the boundaries of Unalaska or Akutan when they were actively processing BS Pacific cod harvested by trawl CVs during the qualifying periods considered.

Table 2-137 Targeted BSAI trawl CV Pacific cod landings from federal and parallel fisheries by plant, plant type and year

Processing Plants	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Shoreside Plants																	
Pacific cod (mt)	20,765	18,025	13,436	16,151	13,980	12,039	11,615	15,173	24,051	23,313	22,817	19,581	19,110	14,712	19,750	13,837	278,354
Processing Plants	7	7	7	8	8	6	5	7	6	8	6	6	6	5	7	7	14
Floater, Motherships, & C/Ps																	
Pacific cod (mt)	16,442	12,895	16,140	12,515	13,548	13,688	13,270	19,427	15,868	15,666	15,925	12,000	21,736	22,577	13,959	12,492	248,149
Processing Plants	7	5	4	4	6	4	5	6	5	5	4	4	11	11	12	11	21
Total Pacific cod (mt)	37,207	30,920	29,576	28,666	27,528	25,727	24,885	34,599	39,919	38,979	38,743	31,581	40,846	37,289	33,709	26,329	526,503
Total Processing Plants	14	12	11	12	14	10	10	13	11	13	10	10	17	16	19	18	35

Source: AKFIN Summary of CAS data. BSAI_PCOD_LAPP_Processors(4-9-20): Vessels and Shoreside

All of the firms and the plants that took trawl deliveries of BSAI Pacific cod in the previous tables, as well as any other processor¹¹¹ that obtain the required permits and certifications and have not processed BSAI Pacific cod from the target fishery in past years, could take deliveries of BSAI Pacific cod CQ from trawl CVs in the future. The information presented above is provided to show historical participation and is not intended to predict the number of processors that may be active in the future.

2.9.5.1. Element 5.2 – Limits on deliveries of BSAI Pacific cod to eligible C/Ps acting as motherships

Element 5.2 would establish a limitation on the amount of BSAI Pacific cod that may be delivered to eligible C/Ps. The limit would be established for either for both eligible C/Ps combined or as individual limits. While the structure of the provision would limit the amount of BSAI Pacific cod that CVs may deliver to these C/Ps, the total amount of deliveries by CVs that deliver to C/Ps could be greater, if they also deliver to other shorebased or floating processors not subject the C/P limitation. A limit on the quantity of Pacific cod that may be delivered to an eligible C/P, established in regulation, would be managed as a maximum amount of Pacific cod harvested with CQ the qualified C/Ps may accept and not an allocation to that sector.¹¹² The C/Ps would need to arrange deliveries with CVs to ensure that they receive the maximum they are allowed on an annual basis.

Any processing limit that is established would be calculated using the same qualifying years that are established under Element 2. The amount of the limit would be calculated by summing the C/P's qualifying history during the qualifying period and dividing that amount by all eligible processing firm's qualifying processing history during the qualifying period. One of the C/Ps is owned by an Amendment 80 firm. The second C/Ps is owned by a firm that has C/Ps that qualify for the AFA pollock allocation.

Option 5.2.1 defines two options for determining the amount of the C/P processing limit. Each qualified C/P firm would be allowed to process up to higher of the two limits calculated for their firm. The first method would establish the limit based on the percentage of BSAI trawl CV Pacific cod they processed using their qualified C/P during the qualifying years. The limit would be set at 125 percent of their

¹¹¹ Except C/Ps that are prohibited from acting as a mothership when processing Pacific cod harvested from the BSAI.

¹¹² The sideboard limit defined under Element 5.2 is specific to Pacific cod allocated to cooperatives. It is assumed that the limit would apply to BSAI Pacific cod deliveries of CQ. This means that if the QS is calculated using targeted catch of Pacific cod only directed catch of PCTC Pacific cod would count against the limit.

qualifying processing history. The second method would establish the limit based on the percentage of QS that is assigned to LLP licenses that are 75 percent owned as of December 31, 2019, by the firm that owned a qualified C/P but may not exceed 125 percent of their processing history. The date established in the motion defines when an LLP license had to be at least 75 percent owned by the firm for QS to be included in the processing limit calculation. The percentage calculated would be established at the time the program is implemented. If an LLP license used to calculate the limit is sold or the percentage of ownership falls below 75 percent, the limit would not be reduced. The Council's PA would result in each of the two firms being allowed to process up to 125 percent of their average annual qualifying processing history, with each firm operating under their individual limit.

Table 2-138 shows the estimated C/P processing percentages when they can be presented under the confidentiality restrictions. Processing percentages for all C/Ps are estimated to be range between 13 percent and 17 percent of the total processing history for trawl CV deliveries of targeted BSAI Pacific cod harvested from the federal or parallel fisheries. Under each option, processing limit amounts can be presented for all C/Ps, because there are three or more. However, processing limits that could be established for the two C/Ps that qualify to act as a mothership under BSAI FMP Amendment 120 are confidential. This complicates providing quantitative information on the size of the processing limit and how it could be divided between the two firms that qualify. Establishing processing limits for the two qualified C/Ps based on catch history they processed during the qualifying periods means that the limits cannot be published in the regulations or otherwise made public after the program is implemented. While not an option under consideration by the Council, a processing sideboard amount could be established that is not based on processing history of the two firms, but instead is an amount determined to be appropriate and justified by the Council. That processing sideboard limit could be published in regulation and be known publicly.

Table 2-138 Estimated C/Ps processing sideboard limits based on the Element 2 qualifying years processing history.

C/P Sideboards	Annual			Exclude C Season		
	2014-2019	2009-2019	2004-2019	2014-2019	2009-2019	2004-2019
All C/Ps	16.9%	16.1%	13.7%	16.7%	15.5%	13.3%
2 Qualified C/Ps	c	c	c	c	c	c

Source: BSAI_PCOD_LAPP_Processors(4-9-20):C/P sideboards

The second provision under Option 5.2.1 would establish the C/P processing limit based on the BSAI trawl CV Pacific cod QS assigned to LLP licenses that were at least 75 percent owned, as of December 31, 2019, by a qualified C/P firm. This limit would be capped at 125 percent of the vessel's processing history. The Council has clearly indicated its intent that only C/P firms allowed to process BSAI Pacific cod harvested by the trawl CVs from the trawl CV sector apportionment under Amendment 120 may have LLP licenses they own accrue towards the processing limit under Option 5.2.1. Therefore, only the two firms that have C/Ps that qualify to act as a MS in the BSAI trawl CV sector fishery may hold LLP licenses whose history counts toward calculating the processing limit. Based on that interpretation of the language in the motion and stated Council intent, there are a total of nine LLP licenses that would be included in calculating the processing limit because they are at least 75 percent owned by one of the two eligible C/P firms.

Under Option 5.2.1, the processing limits for the two qualifying C/Ps would be based on different criteria, as the higher of the two methods for calculating limits is different for each firm. While confidentiality restrictions limit presenting the actual percentages under each option, LLP license history for the firm that would be subject to that limitation would be limited to 125 percent of their processing history.

Table 2-139 shows the estimated relative percentages that result from using the various options considered. The table indicates that the combined LLP license qualifying catch history is about 120

percent of the combined qualifying processing history. The actual percentage varies slightly by year grouping considered and may be more or less than 120 percent. Using processing history, without giving the firms the ability to choose the option to use the qualifying catch history assigned to their LLP licenses to calculate the processing limit, results in the smallest limit. Allowing the firms to use the LLP license history (up to 125 percent of their processing history) increases the overall limit by about 15 percent relative to their combined processing history, depending on the years used. Relative to their LLP license qualifying history, the combined limit would be about 5 percent less. Allowing limiting firms to 125 percent of their processing history based on the two options under Option 5.2.1 essentially results in both firm’s limit being 125 percent of their average annual processing history during the qualifying years.

Table 2-139 Ratios showing percentage changes of the estimated C/P processing limit based on different calculation methods.

Ratios	2004-2019	2009-2019	2014-2019
LLP divided by Processing History	Combined LLP history is about 120 percent of Combined Processing History		
Select Best divided by LLP History	About 5% less than LLP History		
Select Best divided by Processing History	About 15% more than Processing History		

Source: CAS data reported in BSAI_TRW_LLP_PCODLANDINGS(4-10-20) Sheet Element 5.2.1

Option 5.2.2 would differ from Option 5.2.1 in that C/Ps would be required to use their processing history to determine their processing limit and the limit would be set at 100 percent of each firm’s processing history. Selecting this option would reduce have the greatest impact on the firm that would be allocated more CQ from LLP licenses they hold than they have historically processed. The firm would need to contract with another processor to take deliveries of some portion of their CQ. Both firms could be negatively impacted if they shared a combined processing limit rather than being assigned individual processing limits.

2.9.5.2. Element 5.3 – Limit CVs that may deliver to C/Ps

This element was not included in the PA but would have defined which trawl CVs would be allowed to deliver some or all of their BSAI Pacific cod catch from the directed trawl CV fishery to eligible C/Ps. This differs from Option 5.2.1 in that it would define the maximum percentage of the trawl CV sector apportionment that would be allowed to be delivered to C/Ps acting as a MS based on the LLP licenses held by the firm.

Two options are included to determine which CVs would be allowed to deliver to C/Ps. The first is limited to LLP licenses that are at least 75 percent owned by “qualified C/Ps” that are assigned to CVs. The date listed in the motion (December 31, 2019) is important because it is interpreted to determine the C/P qualification date¹¹³. One CV would qualify using that definition that is not owned by a C/P firm that is currently eligible to process BSAI Pacific cod as a mothership. Meaning that 10 LLP licenses would qualify. The date is interpreted as applying to C/P qualification, associated with the Federal Register notice¹¹⁴ (84 FR 70064, December 20, 2019), whose regulations took effect on January 20, 2020. The period between when the FR notice was published and implemented encompasses the date included in the Council’s option.

Table 2-140 was generated to aid the Council in developing options to determine which C/Vs would be allowed to qualify to deliver Pacific cod CQ to C/Ps acting as a mothership. The table shows each LLP

¹¹³ Initial review of the data indicates that one additional LLP license could qualify to deliver to C/Ps acting as a MS relative to Element 5.2. That LLP license would also likely qualify under criteria developed under the option as well, because all of the catch associated with that LLP was delivered to C/Ps during the qualifying periods considered.

¹¹⁴ 84 FR 70064.

license that was assigned to a CV that delivered targeted BSAI Pacific cod to the offshore sector that was harvested from the trawl CV fishery, during the qualifying years under consideration. Columns that show each year from 2004 through 2019 indicate the percentage of the qualifying Pacific cod catch associated with the LLP license that was delivered to a C/P that year. Annual cells show the following information.

- LLP licenses (not the actual LLP license number) with an asterisk could qualify under Option 5.3.1.
- A blank cell means the LLP license was not used to harvest any qualifying Pacific cod that year.
- A red cell with 0% means that all the qualifying Pacific cod catch was delivered to a processor other than a C/Ps acting as a mothership.
- A yellow cell with 0% means that some qualifying Pacific cod catch was delivered to a C/P acting as a mothership, but the percentage of catch delivered to a C/P, relative to the LLP licenses total qualifying catch, rounded to zero.
- Percentages of 1 or more shows the percentage of qualifying catch delivered to a C/P that year.

Two sets of summary columns are provided for each qualifying period considered. “Total” is the percentage of total qualifying catch that was delivered to a C/P acting as a mothership during the period. “Years” shows the number of years during the qualifying period the LLP license was used to allow a CV to deliver qualifying catch to any C/P acting as a mothership. In addition to the values that were presented, LLP licenses were sorted from low to high by the quantity of Pacific cod that was delivered to C/Ps during the 2004 through 2019 qualifying period. Actual quantities or ranges could not be included because of confidentiality constraints. However, the table was sorted from low to high using the amount of catch delivered to C/Ps during the 2004 through 2019 qualifying period. That information is provided to give the reader some idea of the relative magnitude of deliveries that went to C/Ps by each LLP license but does not allow estimates of the actual amounts to be estimated from the information provided.

Table 2-140 LLP licenses that delivered offshore to C/Ps acting as a mothership 2004-2019

LLP License	2004-2019															2004-2019		2009-2019		2014-2019		
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	Years	Total	Years	Total	Years
1												0%	0%	0%	0%	0%	0%	0	0%	0	0%	0
2	0%	0%	0%	0%	0%	0%			0%	0%	0%	0%	0%	0%	0%	0%	0%	1	0%	1	0%	1
3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1	0%	1	0%	1
4					0%			0%	0%			0%	27%	100%		0%	4%	2	5%	2	13%	2
5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	1	0%	1	1%	1
6					0%	0%	0%	0%	29%	0%	0%	0%	0%	0%	0%	0%	1%	1	1%	1	0%	0
7	0%	0%	0%	0%	0%	0%							0%	17%	0%	0%	2%	1	5%	1	5%	1
8																52%	52%	1	52%	1	52%	1
9		0%	0%	0%				0%	0%	0%	0%	0%	0%	0%		87%	2%	1	3%	1	6%	1
10*				0%	56%	0%	0%		0%	0%					100%	0%	12%	2	2%	1	4%	1
11					0%	0%						0%	25%	14%	0%	13%	8%	3	10%	3	11%	3
12																100%	100%	1	100%	1	100%	1
13*	0%	100%	100%													75%	4	100%	2	100%	1	1
14								0%	0%					12%	0%	100%	22%	2	22%	2	30%	2
15	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	53%	0%	3%	2	4%	2	8%	2
16			0%												100%	100%	96%	2	100%	2	100%	2
17													15%	14%	0%	87%	18%	3	18%	3	18%	3
18	0%	0%	0%	0%	0%	0%	0%		0%			0%	100%	0%	0%	0%	14%	1	24%	1	48%	1
19	0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	100%	77%			18%	2	30%	2	74%	2
20				0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	82%	100%	13%	2	15%	2	33%	2
21*	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		0%	6%	100%	100%	100%	12%	4	19%	4	49%	4
22*											100%				0%	85%	80%	2	80%	2	80%	2
23*		0%	0%	0%	0%		0%	0%	0%					0%	100%	91%	31%	2	36%	2	75%	2
24									100%		100%	100%	100%	100%	100%	100%	100%	6	100%	6	100%	5
25	0%	0%	0%	0%	0%	0%	0%	78%	54%				100%	100%	23%	31%	24%	6	42%	6	52%	4
26	0%	0%	0%	0%	0%	0%	0%	96%	8%	33%	0%		100%	100%	100%	100%	27%	7	44%	7	69%	4
27		0%	0%	0%	0%	0%	0%	100%	8%	13%	0%		100%	100%	0%	0%	23%	5	29%	5	39%	2
28	0%	0%	0%	0%	0%	0%	0%	94%	75%	0%	0%	0%	28%	0%	0%	0%	17%	3	33%	3	10%	1
29	0%	0%	0%	0%	0%	0%	0%	100%	82%	63%	0%	0%	94%	0%	0%	0%	16%	4	25%	4	8%	1
30*	0%	0%		63%	82%		100%	97%	39%	14%	32%	53%	8%	100%	100%	100%	56%	13	54%	10	58%	6
31*	0%	0%	0%	0%	82%	0%	0%	87%	100%	100%	100%	100%	100%	100%	100%	100%	60%	10	86%	9	100%	6
32*					100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	12	100%	11	100%	6
33*	91%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	13	100%	8	100%	4
34*	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	13	100%	8	100%	3

Source: AKFIN summary of CAS data (BSAI_TRW_LLP_PCODLANDINGS2(4_10_20: Sheet 5.3.2)

* LLP licenses (not the actual LLP license number) with an asterisk could qualify under Option 5.3.1

There are a total of 34 LLP licenses that appear to have delivered qualifying Pacific cod catch offshore, including the nine or 10 LLP licenses that could qualify under Option 5.3.1 based on the 75 percent C/P firm ownership standard. One LLP license (LLP license 1 in the table) only delivered offshore to a true mothership (not a C/P). Percentages are zero for that LLP license because the table shows the percentage of their total Pacific cod catch or catch range (mt) that was delivered to C/Ps. Catch delivered to C/Ps is used for the calculations because Option 5.3 states it is limiting the number of trawl CVs that may deliver to qualified C/Ps acting as a mothership.

When constructing options, that could include Option 5.3.1 and/or Option 5.3.2, the Council may use any or all the fields provided. For example, it could consider the number of years in the fishery or a minimum percentage of Pacific cod catch delivered to C/Ps, or any combination of the two metrics to qualify. The ranges provided could be modified or expanded, based on direction from the Council, to refine options.

If the option were selected that allowed LLP licenses that were 75 percent owned by a qualified C/P firm to qualify, the LLP licenses with an asterisk would not need to meet the qualification criteria defined under Option 5.3.2. As shown in the table, LLP licenses that are 75 percent owned by a C/P firm generally have a high percentage of catch delivered offshore and tend to mostly be concentrated among the LLP license with more catch delivered to C/Ps. However, that is not always true. For example, LLP license 10* shows that it delivered 12 percent of its qualifying catch to C/Ps during the 2004 through 2019 qualifying period. That LLP license could not be assigned to a CV to qualify it to deliver offshore under Element 5.3.2. Using the above information, the Council is considering two options for CV qualification for delivery to C/Ps under Element 5.3.2. The options are based on a LLP license that was used when delivering either 90 percent or 75 percent or more of the qualifying catch history (assigned to the LLP license) offshore during the qualifying years selected in Element 2.2. It was assumed that the Council could have selected both Element 5.3 options (75 percent LLP ownership and a threshold landing amount offshore) to determine which LLP licenses could be assigned to a CV to make it eligible to deliver to a qualified C/P. Based on that assumption, two additional LLP licenses could be used to qualify a vessel to deliver offshore under Element 5.3.2 (at either the 75 percent or 90 percent thresholds). In that case, selecting either the 75 percent or 90 percent threshold would not change the number of LLP licenses that would qualify. Selecting Element 5.3.1 and Element 5.3.2 means that a total of 12 LLP licenses could be used to qualify a CV to deliver offshore.

Based on the 75 percent LLP license ownership threshold, three firms hold the LLP licenses. The catch history associated with those LLP licenses accounted for 15.5 percent, 15.8 percent, and 13.8 percent of the total LLP license qualifying catch history over the years 2004 – 2019, 2009 – 2019, and 2014 – 2019, respectively. The processing limit would be set equal to those amounts.

Using only the 75 percent or 90 percent delivery threshold to qualify for delivering offshore (Element 5.3.2), a total of eight LLP licenses would qualify at the 90 percent threshold and 10 would qualify at the 75 percent threshold. This means that from two to four LLP licenses that are 75 percent owned by C/P firms (Element 5.3.1) would not qualify a CV to be used to deliver offshore.

In terms of actual processing limits derived from Element 5.3.2 they range from 7.2 percent to 10.6 percent depending on the threshold and years used. Six firms appear to hold those LLP licenses so the data would not be considered confidential and they delivered to three or more C/Ps

Table 2-141 Processing limits using 75 percent and 90 percent of LLP license delivery to C/Ps

Harvest % Threshold	2004-2019	2009-2019	2014-2019
75%	7.9%	10.3%	10.6%
90%	7.5%	7.2%	8.8%

Source: AKFIN summary of NMFS CAS data.

The Council's motion would only allow CQ derived from the qualifying catch history of an LLP license qualifying for the offshore sector to be delivered offshore. A vessel must be assigned an LLP license that qualify for the offshore sector to make offshore deliveries. Together these provisions would limit the percentage of CQ that could be delivered offshore and define the CVs that could make those deliveries.

Vessels using LLP licenses with an offshore designation would be allowed to deliver any or all of the CQ annually assigned to that LLP license to any eligible shorebased, floating, C/P, or mothership processor. It would not allow CQ derived from other LLP licenses to be stacked on the vessel and the CQ derived from the stacked LLP license to be delivered offshore.

2.9.5.3. Element 5.4 – Allocation of harvest shares to processors

Element 5.4 would allocate a percentage of the available harvest quota to processors that took BSAI Pacific cod deliveries during the qualifying years selected. AI shorebased processors would be excluded from the allocation if they receive a separate allocation or set-aside under Element 6, but there are currently no active AI shorebased processors eligible for an allocation based on their processing history. All other processors¹¹⁵ that currently hold an FPP or FPP, including qualified C/Ps would be eligible to receive harvest QS based on their processing history. Processors would be allocated Pacific cod QS and a pro rata share of the PSC species assigned to cooperatives.¹¹⁶ All PSC species allocated to cooperatives would be issued to processors in the same proportion as the percentage used to divide the Pacific cod harvest apportionment between harvests and processors.

The following is an example of how the Pacific cod and PSC may be allocated: If a processor permit was issued two percent of the total Pacific cod QS, then the processor permit would also be allowed to control two percent of the halibut PSC limit that is assigned to cooperatives. Because the PSC moves with the Pacific cod CQ when it is allocated to a cooperative, the cooperative that is assigned the Pacific cod quota would also be assigned the proportional amount of PSC. After the PSC is assigned to a cooperative, it could be moved between cooperatives with or without Pacific cod CQ, after the transfer is approved by NMFS.

Both the onshore and offshore processors could be eligible to receive harvester quota. Any C/P that is issued harvester quota must assign that quota to a CV cooperative, and cannot harvest the quota with a C/P. All other processors must also allocate the harvest quota they are issued to a CV cooperative before it may be used. An option would prevent CVs owned or controlled by the processor from harvesting more CQ than it would have been allocated absent a processor allocation of QS. Since the Council remain silent on defining ownership and control, NMFS retained the existing definition at 679.2 used for existing catch share programs.

The percentage of harvest QS that was considered to be assigned to processors at the time of initial allocation range from zero, if that provision is not included as part of the PA, up to 30 percent of the total QS issued. Information on limitations of transfers is described in Element 7 of this proposed action.

While it is anticipated that processors will always utilize CQ derived from their QS, the Council has indicated that QS derived from processor permits would need to be assigned to a CV cooperative before the CQ may be fished. If a processor does not associate with a cooperative (assign their CQ to a cooperative) during a year, that processor's CQ would be divided among cooperatives in the same proportion as the processor CQ assigned to individual cooperatives by the associated processor that year relative to total processor derived CQ that was issued that year.

Processors have indicated that their intent is to form a single cooperative with their associated CVs, as that is the most efficient structure. However, the proposed program structure would not prohibit a

¹¹⁵ Described as BS processors in the Council motion.

¹¹⁶ If crab PSC is allocated and the AI Shoreplant allocation must be harvested from the AI, crab PSC would not be allocated to that plant because the crab PSC limits only apply to harvests made from the BS.

processor from associating with more than one cooperative during a year. If a processor is associated with more than one cooperative during a year, the CQ derived from their processor permit would be divided between the cooperatives in the same proportion as the LLP license derived CQ that is assigned to that cooperative. This would help ensure that harvest vessels could be allocated an amount of CQ from the processor that would make up for the reduction resulting from the processor allocation. Public testimony has indicated that is the intended use of the CQ. For example, if a processor is associated with two cooperatives and one is assigned 75,000 CQ pounds of Pacific cod from LLP licenses and the other 25,000 CQ pounds of Pacific cod, 75 percent of that processor's CQ would be assigned to the first cooperative and 25 percent would be assigned to the second cooperative.

Pacific Council Experience Under the Shoreside Whiting IFQ Program

As discussed during Public Testimony at the June 2021 Council meeting there are differences in the whiting processing sector and the BSAI Pacific cod processing sector that should be considered. Processors in the whiting fishery are spread out over a large geographic area and there has been consolidation of processing in the sector. The BSAI Pacific cod processing sector for trawl CV deliveries is already highly concentrated in the Dutch Harbor/Unalaska and Akutan communities. During years when an AI shoreplant was active in Adak and had a set aside under Amendment 113, relatively large volumes of the AI TAC was delivered to that plant. However, depending on whether AI shoreplants are granted an exclusive apportionment, it is expected that the vast majority of Pacific cod landings will occur in the current locations or at C/Ps acting as motherships in either the BS or AI.

Whiting has also been described as being more perishable, with the fish requiring processing sooner to maintain a marketable product. Pacific cod is less perishable, but it is still anticipated that the cooperative structure would allow for higher quality Pacific cod being delivered to plants. This would include fish that have been on the boat less time and fish that are less damaged by being in the hold during bad weather or subject to other factors that degrade fish quality.

Background

In 2011, the Pacific Fishery Management Council (PFMC) under Amendment 20 to their groundfish FMP, transitioned from a limited entry trawl sector commercial fishery to a catch share system. The catch share program consists of cooperatives for the mothership and C/P fleets that target and process Pacific whiting at-sea, and an individual fishing quota (IFQ) program for the shorebased trawl fleet that targets both Pacific whiting and a wide range of other groundfish species. The following information was adapted from the PFMC analysis of the whiting fishery (PFMC, 2010). Specifically, the discussion and justification that resulted in the PFMC selecting the option to allocated 20 percent of the harvesting quota to shorebased processors. The action under consideration by the Council could allocate harvesting shares to both shorebased and at-sea processors, which differs from the model developed for the whiting fishery. Appendix A and Appendix E (Analysis of the Impact of the Initial Quota Share Allocation on Long-Term Quota Share Distribution) of that action provides a more detailed discussion of market power¹¹⁷ and impacts of vertical integration which is included by reference (PFMC, 2010).

New entrants into the harvest side would be limited to those that acquire an LLP license that PCTC QS has been assigned. There is no provision in the program that sets aside a portion of the ITAC for new entrants. Processors would be free to enter the fishery but would need to overcome the relationships vessels have with their current processors and the potential processor allocations of harvest shares to processors with qualifying history in the fishery.

The number of harvesters and processors that are actively harvesting and processing in the directed BSAI Pacific cod trawl CV fishery are likely to contract under the program as both sides of the industry attempt to better match capacity with the Pacific cod that are available. Estimates of the actual number of CVs

¹¹⁷ Market power in an industry is influenced by new entrants, the number of harvesters, the number of processors, availability of substitutes, and competitive rivalry.

and processors that will be active in the fishery are not provided, but public testimony on this subject at the June 2021 Council meeting indicated that as few as two or three processors could process the entire allocation and as few as 35 CVs could be utilized to actively harvest the CQ. QS could still be held by more entities but could be leased within a cooperative to reduce the number of trawl CVs actively fishing BSAI Pacific cod during the year. Processors that remain in the fishery will continue to compete for Pacific cod deliveries. Some aspects of the processing capacity designed for Pacific cod is specific to that fishery and cannot be readily utilized to processor other species like pollock, salmon, or crab. Processors will want to continue to utilize those assets. Harvesters will form cooperatives to coordinate their Pacific cod harvest activities. The AFA vessels may choose to integrate the pollock and Pacific cod harvest strategies in the BSAI to create a more rational annual fishing cycle for the fisheries that are rationalized. This will extend to the Pacific whiting fishery for vessels that also hold IFQ for that fishery.

It is also worth noting that it is difficult to calculate market power in this context. As stated by Anderson (2000), *“the difficulty of defining market power and of measuring the gains or losses of various actions such that they can be approved as part of a management plan should not be understated.”* While it is widely acknowledged that the allocation structure will result in shifts in market power, we cannot address the issues of whether the market forces before the LAPP was implemented were optimal or the actual amount of quota that should be issued to processors under the PCTC to achieve the Council’s desired outcome.

The PFMC began considering harvest share allocations to processors, as the Council considered them as options in previous LAPPs (e.g., the Rockfish Program). The MSA LAPP provisions in Section 303A(c)(5)(A) require that the Council ensure fair and equitable initial allocations, including consideration of (1) current and historical harvests, (2) employment in the harvesting and processing sectors, (3) investments in and dependence on the fishery, and (4) the current and historical participation of fishing communities.

Congress specifically instructed the PFMC to fully analyze alternative program designs, including LAPPs that allocate quota to harvest fish to both harvesters and processors. Much of the PFMC’s discussion surrounding an allocation to processors involved the impact of both status quo and trawl rationalization on market power. It was noted that the U.S. economy relies on competition and on individuals and businesses acting in their own self-interest for growth, innovation, price setting, and the allocation of resources. There was a sentiment by some stakeholders that government should not interfere in business competition unless it is necessary for the public benefit. During its discussion it was noted that the PFMC already interfered with harvesting businesses because of problems identified relative to conservation and management both in the non-whiting and whiting fishery. When the PFMC intervened in harvesting, it could not avoid interfering with the processing businesses by changing the basic bargaining dynamics in the raw fish product market. While ex-vessel price negotiations are between the harvesters and processors, the PFMC felt it could not ignore how fishery management actions might influence those negotiations.

Some PFMC members opposed any allocation to processors because they believed it would have an adverse effect on market power (excessively increasing market power for processors) and that there were ways to address concerns about community stability, other than by allocating to processors. They noted that even if processors received no QS, after initial allocation, processors would likely be able to control quota shares through the initial allocations to vessels they own or control, or by purchasing quota in the market to achieve the balance of power they consider more favorable. This type of consolidation can be addressed to some extent through ownership and use caps, to make sure the balance does not swing too far in one direction. Others were concerned about small processors and expressed concern that not allocating harvest shares to those processors might cause more consolidation and a further decline in the number of buyers, increasing the power of remaining processors. In its PPA, the PFMC recommended giving processors 20 percent of the shoreside allocation of QS for all species except bycatch taken in the shoreside whiting fishery.

Determining the Percentage Allocation of Whiting to Processors

PFMC members noted the difficulty of determining the correct percentage for a possible QS allocation to processors. The option for a 50 percent allocation of whiting QS to processors seemed like far too much. When a 20 percent option was proposed, some Council members felt that when the 20 percent allocation to processors was combined with a 10 percent allocation for adaptive management and considering that some processors would receive QS for the permits they hold, the amount remaining for harvesters would be insufficient. In selecting its PPA Council members noted that the case for providing QS to whiting processors seemed to be relatively clear, but it was less clear for non-whiting processors. For whiting processors, the switch from a derby fishery would immediately result in some of the processing capacity becoming surplus. The shift from two-month cumulative limits to IFQs would not affect the non-whiting processors in the same way. However, with respect to non-whiting processors there was concern for small processors' ability to compete with larger processors. The 20 percent approach chosen for the whiting and non-whiting PPA was believed by some to be a fair middle ground for public review and comment.

In its final PA, after further review of the analysis and public testimony, the PFMC recommended giving processors 20 percent of the QS only for shoreside whiting and no QS for shoreside non-whiting. In taking this action, PFMC members expressed their concern that an initial allocation of QS to non-whiting processors would add too much to the market power of shoreside non-whiting processors. They noted that there was already considerable consolidation among processors, particularly relative to the number of vessels operating in the fishery. Providing processors with an initial allocation would be expected to further increase consolidation and market power. Additionally, the argument that the larger processors also held vessel permits that would provide them with QS was determined to be an important consideration. At the same time, PFMC members continued to be concerned with the impact of the program on smaller processors. It was noted that if an allocation of non-whiting QS to processors were to be made, that the appropriate amount might be 10 percent of the QS. Instead, the PFMC favored providing a 10 percent allocation for adaptive management. The adaptive management program (AMP) could be used not only to provide some amount of certainty and security to the larger processors, but also to provide flexibility to tailor a program that would provide some protection to smaller processors. Because the AMP allocation has served as a pass-through to harvesters, it has been difficult politically to "reallocate" that quota. To date the quota has continued to pass-through to harvesters, because the PFMC has not been provided sufficient evidence to persuade its members to vote to reallocate the AMP quota to other stakeholders, including processors, that could show proof that the program had caused sufficient harm to justify a reallocation.

With respect to the decision to allocate 20 percent of the whiting QS to processors, differing conditions between the whiting and non-whiting sectors were noted. In particular it was noted that the size of the shoreside whiting fleet was expected to be very small (only 20 vessels), providing the fleet with greater market power relative to the three major whiting buyers than would be experienced by the non-whiting fleet relative to the major buyers of non-whiting species.¹¹⁸ While the shoreside whiting fleet position would be strong, the analysis predicted that, with the move from a whiting derby fishery to an IFQ program, the amount of processing capital needed in the whiting fishery would decline by 30 to 50 percent, and that competition among whiting processors would tend to increase to continue to attract deliveries to their facilities,¹¹⁹ leading to a decrease in their market power. In contrast to whiting, the non-whiting trawl fishery was not a derby style system; it was managed with two-month cumulative trip

¹¹⁸ These conditions are more similar to the BSAI Pacific cod trawl CV fishery than the non-whiting fishery conditions were (two-month openings and trip limits) at the time the program was implemented.

¹¹⁹ Processors invest in excess capacity to compete with other processors for deliveries by being able to handle peak volumes during the derby fishery. When the derby is over, much of the capital then remains idle. The move to a LAPP will slow the pace of the fishery resulting in substantial unneeded processor capital. Excess harvesting capacity may also exist in the harvesting sector. Under a LAPP structure the harvesting vessel owners could be compensated to not participate in the fishery by leasing CQ.

limits. Therefore, the shift to IFQs will not create a sudden increase in the amount of excess processing capacity. Even with a 20 percent allocation of whiting QS to processors, the PFMC believed it may be uncertain whether the initial allocation of whiting QS to processors will offset whiting harvester gains in market power, relative to status quo. An initial allocation of whiting QS to processors was determined to function as a means of guaranteeing supply for processors, granting processors some leverage in bargaining power as they can “hold out” against harvesters, and providing an incentive to make necessary capital investments to increase product recovery yield.

The analysis conducted by the PFMC to allocate harvester quota to processors considered a slightly broader range (0 percent to 50 percent) than the Council is considering (0 percent to 30 percent) under the BSAI Pacific cod action. Economic analysis considered for the whiting fishery and the BSAI Pacific cod fishery rely on the same discussion of changes in market power that can result from allocation of harvest shares to harvester only or both harvesters and processors. Both Councils have agreed that an allocation of harvest shares to processors that is greater than 30 percent would likely result in the balance of power being shifted too far toward the processing sector.¹²⁰ However, the available economic data do not provide sufficient information to select a point estimate on the continuum of 0 percent to 30 percent that would result in the optimum balance of market power between the two sectors.

Through their consideration of the issues, the PFMC ultimately determined that some allocation of harvest shares to processors was warranted in the whiting fishery, but not the non-whiting fisheries. Determining the appropriate percentage using economic information available to staff was not possible. The PFMC ultimately selected 20 percent, in large part, due to a substantial group of harvesters and processors testifying together in support of that allocation percentage.

It was noted earlier that the PFMC has not utilized any of the AMP quota to address unforeseen negative impacts on the processing sector. That quota has been used as a pass-through allocation to the harvesting sector. This may indicate that a 20 percent allocation of harvesting quota to processors was sufficient to balance market power in the whiting fishery, after the fishery management structure was changed to a LAPP. It may also indicate that both sectors feel the risk of reconsidering the allocation percentage is greater than any expected benefit they would receive.

Acquisition of Additional Harvest Shares

In addition to the 20 percent of the whiting quota processors were indirectly initially issued more quota or purchased additional quota after the program was implemented. Including the allocation to vessels owned or controlled by processors it was estimated that they received an additional 6 percent of the quota (26 percent at initial allocation in 2011). The total percentage of whiting quota held by shorebased sector processors in 2021 was estimated to be 31 percent¹²¹. Indicating that they were able to acquire an additional 5 percent of the whiting quota. These processors currently own quota shares for non-whiting species as well, but that was not issued as a processor allocation. As of January 2021, the Shorebased IFQ Program was composed of 35 first receivers, one of which is designated as whiting-only receivers and 11 that may receive both whiting and non-whiting. In the catch share program, a first receiver site license is required to receive shoreside catch share deliveries. The number of these licenses is not limited. The number of shorebased processing companies purchasing Pacific whiting decreased from an average of twelve from 2009 to 2010 to eight from 2011 to 2015¹²². According to fish tickets in that area, there were 9 facilities that purchased whiting (non-bycatch) in 2020. Public comment and social surveys indicate that this level of participation reflects an increased rate of consolidation in ownership and concentration of control of quota share, fishing businesses, processing capacity, and support infrastructure.

¹²⁰ The PFMC noted that in their deliberation and the Council did not include an option that was greater than 35 percent to be considered.

¹²¹ Personal communication with Erin Steiner (NOAA Fisheries)

¹²² <https://www.pcouncil.org/documents/2017/01/trawl-catch-share-review-main-document.pdf/> p. ES-5

Some Pacific cod processors are also vertically integrated with their harvesting vessels. Processors hold LLP licenses that would qualify for an allocation of harvest shares under Element 2. The complex ownership structure of firms is difficult to untangle with the information available, since many CVs are held by a firm that is different from the processor. However, using the exact same address to link the LLP licenses and the processors it appears that close to 25 percent of the harvester quota allocated under Element 2 could be assigned to three processors that own LLP licenses. This includes processors operating shoreside and at-sea. That percentage could be greater if a broader definition of affiliation was used to link vessels with processors. However, a true understanding of corporate structures cannot be resolved even with required reporting, so no additional assumption about affiliation and its impact on vertical integration is made in this analysis. Adding a 20 percent allocation of harvest shares to processors, as an example, the amount of QS held or controlled by processors ownership of CVs could increase to 40 percent (25 percent plus 15 percent [75 percent * 20 percent] of the total QS initially issued.

Given the above example, it is important to note two things. First, that not all Pacific cod processors are vertically integrated through the ownership or affiliation with CVs and LLP licenses. As a result, not all processing firms are situated equally. Firms that do not own LLP licenses would not initially benefit from the allocation under Element 2 and may be more dependent on an allocation to processors to compete in the market for Pacific cod deliveries since they would not directly control any CQ derived from harvesting Pacific cod. Depending on future decisions by the firms, they or a closely related firm could potentially acquire LLP licenses that are assigned QS and increase their control of QS holdings, as has occurred in the whiting fishery. Second, processors that hold LLP licenses that would be allocated QS based on their qualifying catch history will likely need the CQ derived from those LLP licenses to allow vessels they own to continue operating in the fishery as they have prior to the PCTC Program. If they were not allocated that quota, their vessels would lose the opportunity to fish without reducing the Pacific cod available to vessels that they do not own.

The 5-year review of the whiting shorebased IFQ program also indicated that there is evidence that shorebased processors use their quota to support bargaining relationships with vessels to secure deliveries.¹²³ In addition to the change in market power the proposed allocation of harvest shares has on the CV sector, allocation of harvest shares to processors will also result in distributional effects. Those impacts will likely vary by firm and will depend on how any QS issued to processors is redistributed back to the CVs.

Processor Allocation Research

Models have been developed and published that attempt to determine a Pareto optimal solution regarding allocations of quota to processors. Papers that describe those models include the works of Matulich, et al (2010), Matulich (2010), Matulich (2009) and Matulich (2008). These papers were based on processors sunk costs (that have no alternative use) to build processing capacity to compete in a fishery that was managed such that harvesters raced to catch as much of the TAC as possible and processors increased capacity to accept as much of the TAC as possible before the fishery was closed to directed fishing. Under a rationalized fishery the processors would bid to receive fish and use as much of the excess processing capacity that had no other value as they could. The papers concluded that because the processors would compete on price, harvesters would have increased market power and would capture all of the rents derived from the rationalized fishery. The data to estimate quasi-rents for processors and harvesters are not available to staff to make the calculations described in those papers and the conclusions drawn in those papers remain controversial. Those models have never been utilized by the Council to determine distribution of quota between harvesters and processors. Even if that information were

¹²³<https://www.pcouncil.org/documents/2017/01/trawl-catch-share-review-main-document.pdf/>

available for one year, it may not hold in other years, as the overall North Pacific management structure and world markets change.

Other research was conducted during the same general period as discussed in the previous paragraphs that concluded allocations to processors may not be needed to prevent harvesters from obtaining too much market power (Fell and Haynie 2011; Wilen 2009; Young 2004). Studies also discussed whether allocations of harvest shares to processors could result in anticompetitive behavior in the processing sector (Wilen 2008; Powell 2004). Wilen (2009) concluded that for the Pacific whiting fishery that rationalization of fisheries is unlikely to generate significant processing stranded capital. Most capital involved in whiting processing was stated to be malleable and not likely to be devalued because of rationalization. He also stated that if policy makers judge it desirable to consider compensation for processors, a legitimate process would tie compensation to anticipated or demonstrated capital losses. He concluded that current policies proposed on the U.S. West Coast to transfer harvester quota are arbitrary and unsupported by empirical estimates of the magnitude of the problem. As described earlier, the location of the processors involved in the whiting fishery and the BSAI Pacific cod fishery are not alike. The remote location of Pacific cod processors in the BSAI and large investments in specialized equipment and infrastructure that have limited other uses (specialized Pacific cod plants) means that caution should be used when making direct comparisons of stranded capital in the two fisheries.

Guldin and Anderson (2021) have recently conducted the first review of the impacts of the allocation of harvest shares to processors in the Pacific whiting fishery. The authors found that processors used processor-owned quota in informal ex-vessel market negotiations. They were able to offer quota to match a portion of deliveries and attract landings to their facility while charging catcher vessel operators a contracting premium on quota pounds transferred during seasons when the whiting TAC was close to binding. Processors also utilized the quota during seasons when the TAC was not binding but charging price premiums was not evident in the data. The paper concluded that additional research is required on the allocation of harvest shares to processors policy, particularly regarding welfare outcomes of harvesters and processors and overall efficiency.

The data used by Guldin and Anderson (2021) included some types of information that will be collected for the PCTC program from the CAS data collection program and data that could be collected during the QS/CQ transfer process. The CAS will collect data on catch and ex-vessel value. First wholesale information will be collected from production reports and COAR data. Data on QS transfers could be collected by NMFS as part of the LLP license transfer process. It would likely be difficult to assess a value to the Pacific cod QS relative to the other endorsements and QS that may be assigned to that LLP license. Annual CQ transfers between cooperatives that must be approved by NMFS¹²⁴, could include the price paid for the CQ. When these are arm's length transactions, they could provide an accurate reflection of the annual value of the Pacific cod CQ. Information that is used in their paper that is currently not available and is not proposed to be collected are cost data from the processing sector (or harvesting sector). These data were collected on the West Coast as part of the LAPP. The Council's PA does not include the development of an Economic Data Report that is specific to the PCTC program, so cost data like those used in the paper would not be available for the PCTC program.

Any initial allocation of harvest shares to processors also transfers the long-term underlying value of the shares from the harvest sector to the processing sector. Given that the Council is considering a range of up to 30 percent of the harvest shares being allocated to processors, as much as 30 percent of the asset value could be directly transferred from the harvesting sector to the processing sector, in addition to any change in the division of rents that directly is attributable to the processor allocation. Additional shares would also be issued based on processor ownership and control of LLP licenses. The value of those shares is

¹²⁴ This is an electronic process that is automatically approved if sufficient quota CQ is available and all other criteria are met when the submitting the application.

often reported to be used as collateral for loans¹²⁵ or as compensation for firm exiting the fishery. To the extent quota is allocated to the processing sector, that asset value is not available to harvesters. However, the harvesters would still have 70 percent of the asset value and would be in a better position to acquire loans or receive compensation for exiting the fishery than they would have been in the No Action alternative. If processors lease quota holdings at a contracting premium, rents are reallocated from the harvesting sector to the processing sector; however, overall efficiency should be unchanged if there are no transaction costs associated with quota transfer (Milon and Hamilton 2002). If processors use quota holdings in the ex-vessel market to secure landings, this policy could lead to ex-vessel market distortions and efficiency implications (Guldin and Anderson, 2021).

Use of Processor Owned Harvest Quota

The Council's option indicates that to be used, the QS "would be transferred to the CV cooperative." This indicates that CQ may only be used by a cooperative. Depending on the requirements for cooperative formation that could include as few as one LLP license and an associated processor.

Since the cooperative structure allows CVs to join a cooperative in association with a specific processor (e.g., the Rockfish Program model), it is assumed that the processor will assign all their CQ to a cooperative with whom they are associated. The CQ could then be reallocated within the cooperative to member vessels or transferred to another cooperative. Civil contracts would define the rules of how the cooperative operates and how any reallocations are authorized and compensated within the cooperative.

However, if a processor was eligible to receive QS - based on processing trawl caught BSAI Pacific cod during the qualifying years – but did not associate with any CV cooperative, that processor could lose its eligibility to receive CQ, since the QS must be assigned to a CV cooperative. If the processor only assigned their QS to a cooperative as a lease without planning to process the fish, how that processor would be compensated and the terms and conditions they would have the authority to negotiate could be limited. The processor would need to negotiate lease values, but it would not be allowed to discuss ex-vessel prices paid to the CV by the other processor as part of the lease price determination within the cooperative structure. Those negotiations would need to take place between individual harvesters and processors.

Once the processor's harvest shares are assigned to a cooperative, the quota could be distributed for harvest in a number of ways that would benefit the processor and some or all member CVs. The distribution would depend on how the processor determines it best achieves its overall goals.

While the discussion provided is intended to consider some possible distributions of CQ, it is likely that the relationships established between harvesters and processors over the years will substantially influence where the majority of harvesters will deliver in the future.

- Distributing CQ so that member vessels have approximately an amount of available CQ that as they would have had before the processor's harvest shares were deducted. Processors have stated that this is their intent.
- Assigning more CQ to vessels the processor owns or controls than they would have brought into the cooperative absent an allocation to processors (the Council's PA would prevent this outcome).
- Using the quota as bonus to entice new members to join.
- Trading Pacific cod quota for deliveries of other species (i.e., pollock, crab, other groundfish).

The first bullet above would essentially reallocate CQ within the cooperative to the harvesters in the same proportion that was forgone to fund the processor's harvest allocation. Depending on the amount of QS

¹²⁵ Collons, Kacy A. 1996. ITQS as Collateral Rightly Understood: Preserving Commerce and Conserving Fisheries. *UCLA Journal of Environmental Law and Policy*, 14(2). <https://escholarship.org/uc/item/8g02s5c1>

held by the processor and the QS held by the members, the amount each harvester may receive may differ from their percentage of catch history. For example, if the processor holds more QS than the percentage the member harvesters gave up funding the allocation, the processor could give its cooperative members more CQ than they would have had otherwise. The converse is also true. Processors that have less QS than their associated CV gave up could not reallocate them all enough CQ to replace the foregone harvesting shares allocated to processors. That could create an incentive for one or more CVs to move to a cooperative the following year where the processor could provide better compensation. All else being equal, the allocation of processor quota would tend to exert pressures to keep the market share of each processor about the same under the cooperative structure as occurred during the qualifying years. Long-standing working relationships between a harvester and processor will also be a factor when an LLP license holder determines which cooperative to join. Both these factors may result in the cooperative's composition closely resembling the groupings of vessels/LLP licenses with processors that occurred under the limited access fishery.

Under the second bullet, processors might allocate all or a greater portion of their harvest shares to vessels they own if the program allowed that behavior. This approach would only be available to processors that own harvest vessels. Approximately, two of the processors that would qualify for QS are assumed to directly own CVs that deliver to them. Business relationships that are less readily evident in the data could result on additional CVs that are not directly owned but may have an unknown degree of control by the processor that could expand the number of processors associated with CVs. The approach would allow the firm to capture economic rents from the QS at both the ex-vessel and first wholesale levels. If crew are compensated based on the ex-vessel value of Pacific cod delivered and the ex-vessel value of fish delivered to the processor is undervalued, it could put downward pressure on crew compensation. In addition, if crew are in a weaker bargaining position, it could result in their receiving a small percentage of the total ex-vessel value. CVs that are not owned or controlled by the processor may be less likely to agree to those terms and conditions when the cooperative is formed. Because they would have the opportunity to change cooperatives on an annual basis, they would have the opportunity to negotiate for better contract terms and conditions with a different cooperative.

The third bullet could provide incentives for LLP license holders to join their cooperative. However, any additional benefits that could be offered to a vessel/LLP license holder outside the cooperative would come at the expense of the current member's opportunity to access QS. If a person perceived that they would have better opportunities in another cooperative, as a result of a similar offer, it could result in current members leaving the cooperative. As stated before, the outcome that is expected is that CV operators will, for the most part, continue business partnerships with their historical partner, with the processor using the QS to maintain market power that more closely represents historical levels than under a cooperative without QS being allocated.

The fourth bullet describes processors bartering their Pacific cod quota for other species. The PFMC found evidence that processors barter to purchase quota (trading units of other quota species). Processors as well as processor-owned vessels traded quota with independent vessels. Between 2011 and 2015, 13 percent of transfers were recorded as barter and six percent listed as either cash sale or cash and barter, and 81 percent listed as "other." Often the trades were determined to be complex and non-cash arrangements. As a result, the 5-year review of the program determined it was difficult to assess how quota trading is affecting the profitability of shorebased processors. These complications also made it difficult to assess the effect of the 20 percent whiting allocation on the profitability of the shorebased processors receiving the allocation.

Impacts of Pollock Cooperatives on the BSAI Pacific Cod Trawl CV Fishery

It is anticipated that previous business relationships with processors, either through common ownership, membership in other cooperatives, or working together for a substantial amount of time, will play a role in determining where CVs will deliver their Pacific cod CQ in the future. For AFA CVs, AFA

cooperative membership is thought to have a strong correlation to where CV have delivered Pacific cod harvested from the BS in the past and will continue under the PCTC. However, AFA delivery contracts do not require delivery of non-pollock groundfish to their plant. Table 2-142 shows the percentage of targeted BS Pacific cod that was harvested by AFA CVs and delivered to plants that are owned by the firm associated with their AFA cooperative. From 2017 through 2020 between 84 percent and 87 percent of Pacific cod was delivered to those plants by AFA vessels, with an average of 86 percent over the period considered. As discussed in other sections, historical delivery patterns and associations are expected to have a strong influence over where CVs will deliver under the PCTC. In general, that means that most AFA CVs will deliver their Pacific cod to the firm they are a member of their AFA cooperative. The overall magnitude and value derived from the pollock fishery, relative to the Pacific cod, is also expected to factor into this decision-making process. Some CVs, especially CVs that are members of an AFA cooperative whose plant is located further from the Pacific cod fishing grounds are more likely to deliver their Pacific cod allocation to a processor that is closer to the fishing grounds.

AFA cooperative membership data indicates that there has been relatively little movement of vessels between cooperatives since 2016. Of the 113 AFA CV ADF&G numbers that were included in the annual AFA cooperative lists, only one was a member of more than one cooperative over the 2017 through 2021 period and from 107 to 111 CVs were cooperative members during a year. Table 2-142 shows the percentage of BS Pacific cod that was harvested by AFA CVs and delivered to the same processing firm they are associated with in an AFA cooperative. AI Pacific cod harvests were excluded from the table as were deliveries to plants in Adak and King Cove. These plants were excluded for different reasons. Adak was excluded because it is not associated with an AFA cooperative and the catch delivered from that plant is harvested in the AI. Pacific cod harvested from the AI is less efficient to deliver to a BS AFA plant. King Cove was excluded because it is not close to the traditional BS Pacific cod fishing grounds. Vessels that are members of that AFA cooperative have often chosen to deliver their Pacific cod harvests to a processor that is closer to the fishing grounds. Whether slowing the pace of the fishery will result in more deliveries to the plant is not known, but to the extent the CVs are able to access processor quota where they historically delivered, it will provide less incentive to deliver to plants that are farther from the fishing grounds and that cannot provide quota that is equal to what the processors are allocated.

Table 2-142 Percentage of targeted BS (AI excluded) Pacific cod harvested by AFA trawl CVs that was delivered to their AFA associated plants/firms, 2017 - 2020

All Akutan, Dutch Harbor, Unalaska AFA Cooperatives	2017	2018	2019	2020	Total
All Firm Plants	87%	84%	87%	87%	86%

Source: AKFIN summary of CAS data and 2021 AFA cooperative membership data

BSAI Pacific cod Processor Participation

Estimates of the number of processors that qualify for QS under Element 5.4 are presented in Table 2-143. Processor counts and the quantity processed excludes C/Ps that are no longer eligible to take deliveries of Pacific cod as a mothership. Shoreplants that are no longer active are also excluded from the table. The table also provides an estimate of the total amount of targeted Pacific cod that was delivered to the qualified processors over the period considered. The table is divided temporally with the top portion of the table including targeted Pacific cod catch for the entire year and the bottom part excluding C season catch. This was done to match the options considered under Element 2. One firm that qualified using annual data does not qualify when the C season data are not included, regardless of the years selected for the qualifying period. The information in the two parts of the table is not considered confidential because more than three processor's data were excluded by removing the C season data, even though only one processor only had taken deliveries during the C season.

Table 2-143 Number of processing firms that qualify and the total processing history under Element 5.4

Seasons	Processors	2014-2019	2009-2019	2004-2019
All	Processors #	11	11	12
	Quantity (mt)	187,161	338,450	457,706
Excludes C	Processors #	10	10	11
	Quantity (mt)	182,786	331,340	447,309

Source: AKFIN file BSAI_PCOD_LAPP_Processors(4-9-20):Qualified Processor t2

To produce Table 2-143, staff relied on direction from the Council. Based on its June 2021 motion, processors that are no longer active would not be issued QS¹²⁶. The processing history associated with those processors would be deducted from the total when distributing QS. The application for an FFP notes that “only persons who are U.S. Citizens are authorized to receive or hold a Federal Fisheries Permit (FFP).” A person applying to receive the LLP license must be a U.S. Citizen or U.S. corporation, partnership, association, or other non-individual entity to be eligible to receive a license. To receive the new Processor Permit to hold QS the processor must be a U.S. corporation, partnership, association, or other non-individual entity. This would allow U.S. firms that are subsidiaries of foreign firms to apply for and receive QS. However, if processor ownership caps are established based on ownership and control rules the limits would need to be at the level of the firm that holds the subsidiaries, and the ownership limit could include a grandfather provision for the combined firms.

Table 2-146 shows the percentage of QS that would be allocated to groupings of processing firms based on processing history during the qualifying years. Processors that are no longer active and C/Ps that are no longer eligible to process Pacific cod harvested by trawl CVs are excluded from the table. Including processors that are no longer active could slightly increase the percentage for the bottom group of firms as listed in the table. Firms were grouped relative to their processing history during the period and seasons considered. In each case, the top four firms were grouped together, and the remaining firms were grouped together. The remaining firms were grouped because separating the processors into smaller groupings was not possible given the number of firms that qualify. Firms may change groupings depending on the qualifying history years and seasons selected.

Processor groupings indicate that the top four firms, in aggregate, would always be allocated between 78.4 percent and 79.9 percent of the QS. The bottom six to eight firms would be allocated 20.1 percent to 21.6 of the QS, in aggregate.

Table 2-144 Percentage of QS allocated to processing firms by grouping

Processing Firms	2014-2019 All Seasons	2009-2019 All Seasons	2004-2019 All Seasons
Top 4 firms	78.7%	79.9%	79.3%
Bottom 6-8 firms	21.3%	20.1%	20.7%
Processing Firms	2014-2019 A & B Seasons	2009-2019 A & B Seasons	2004-2019 A & B Seasons
Top 4 firms	78.4%	79.5%	79.5%
Bottom 6-8 firms	21.6%	20.5%	20.5%

Source: BSAI_PCOD_LAPP_Processors(4-9-20): Processing history groupings

¹²⁶ Because the permits are plant specific, if a processor holds an FFP/FFP that currently allows them to process BSAI Pacific cod harvested by the trawl CV sector and it owned a plant that no longer has the required permit they would be allocated QS for the qualifying history of the plant that is no longer active. It was not the Council’s intent that because a plant was destroyed or retired that the history of that plant would be removed if the processing firm remained active.

2.9.6. Element 6 – Aleutian Islands Processor Provisions

The Council's PA is shown in **bold** below.

Options 6.1 and 6.2 are mutually exclusive.

Under this element:

An AI shoreplant is defined consistent with vacated Amendment 113 regulations.

An AI shoreplant operating under the provisions of this element is exempt from the processing use cap in element 8.4.

All cooperatives will be required to establish an intercooperative agreement that describes how either the set-aside provision in option 6.1 or the annual AI community shoreplant QS in option 6.2 will be administered by the cooperatives to ensure that harvests in the Bering Sea do not exceed the minimum set aside or shoreplant allocation amounts. This intercooperative agreement must establish how the cooperatives intend to harvest the set-aside or shoreplant QS in years when it applies. This intercooperative agreement must be provided as part of the annual cooperative application and is required before NMFS can issue CQ. A cooperative intending to harvest any amount of the set-aside must provide the cooperative's plan for coordinating harvest and delivery of the set-aside with an AI shoreplant in the cooperative application.

Option 6.1: In any year when the community of Adak and/or Atka files a notice of intent to process, require the cooperative(s) to reserve a set-aside for delivery to an AI shoreplant. The amount of the set-aside (AI CQ reserve) will be 10, 12%¹²⁷, to 25% of the BSAI CV trawl directed A season CQ and is in effect during the A and B season. Any remaining portion of the AI CQ reserve will be reallocated to cooperatives in the same proportion as the initial CQ if Adak and/or Atka withdraws its intent to operate notice during the A or B season.

The intercooperative agreement must establish how cooperatives would ensure that CVs < 60 feet LOA assigned to an LLP license with a transferable AI trawl endorsement have the opportunity to harvest a percentage of the AI CQ reserve for delivery to an AI shoreplant. Option 1: 50%, option 2: 25%, or option 3: 10% of the AI CQ reserve.

NMFS will establish a separate AI Incidental Catch Allowance (ICA) and AI Directed Fishing Allowance (DFA) to support the AI CQ reserve.

When the AI CQ reserve is set equal to the AI DFA, directed fishing for Pacific cod in the AI may only be conducted by PCTC Program vessels that deliver their catch of AI Pacific cod to AI shoreplants for processing.

When the AI DFA is greater than the AI CQ reserve amount, the difference between the AI DFA and the AI CQ reserve will be available for directed fishing by all non-CDQ fishery sectors with sufficient A-season allocations and may be processed by any eligible processor.

Option 6.2: In any year when the community of Adak and/or Atka files a notice of intent to process, annual QS shall be issued to the plant operator designated in that notice of intent. In the event, one community issues a notice (option 1: 5.5%, option 2: 10%) of the total BSAI trawl CV Pacific cod CQ (prior to QS based on harvesting or processing histories) shall be issued to the plant. In the event both communities issue a notice, the CQ shall be divided equally between two plants. Adak or Atka may withdraw its intent to operate notice during the season if necessary. In that case, the unharvested portion of the CQ will be reissued to the other AI shoreplant if it is operating.

¹²⁷ Council added 12% as its preferred alternative. The addition of 12% is within the scope of the analysis.

Suboption 6.2.1: If no AI shoreplants are operating, the amount of annual CQ equivalent to unharvested portion will be reissued to cooperatives (holders of LLP licenses with BS and/or AI harvest history in proportion to their initial CQ).

Annual AI community shoreplant allocations shall be transferable to any cooperative(s) (and between cooperatives) for harvest by member vessels that are assigned an AI trawl CV LLP license eligible under this program. CQ shall be harvestable exclusively in the AI and landed in the AI management region.

Suboption 6.2.2: If the community of Adak and/or Atka files a notice of intent to process, annual CQ should be issued to an entity representing the community designated in the notice of intent.

Suboption 6.2.3: AI trawl CVs less than 60' assigned to an LLP license with a transferable AI endorsement will be eligible under the program to be assigned to a cooperative annually in association with the Adak and/or Atka plant regardless of whether they otherwise qualify for the program. Option 1: 50%, option 2: 25%, or option 3: 10% of the annual AI community shoreplant allocation must be harvested by these vessels.

Two options, with suboptions, are considered in this section. Option 6.1 and Option 6.2 are mutually exclusive, so both will not be selected as part of the Council final action. Option 6.1 would require cooperatives to reserve a percentage (10 percent to 25 percent) of their A-season allocation to be delivered to AI shoreplants, during years when the community of Adak or Atka file a notice of intent to process. That quota is referred to as the AI CQ reserve. If Adak or Atka withdraw its intent to operate notice during the A-season (the set-aside is only in place during the A-season), the set-aside requirement would be removed. Option 6.2 would allocate 5.5 percent or 10 percent of the total annual trawl CV Pacific cod CQ to the operator(s) of AI shoreplants or an entity representing the community designated on the notice of intent. There is a requirement that harvest quota for use in the AI must be harvested from the AI and delivered to a processor operating in the AI.¹²⁸

One of the primary differences between the two approaches is that under Option 6.1 QS is assigned to the LLP license associated with the qualifying catch history and the CQ derived from those QS are issued to cooperatives. The cooperatives through an inter-cooperative agreement determine how the AI CQ reserve is delivered to the AI shoreplant. The motion does not prohibit the AI shoreplant from forming a cooperative with one or more LLP license holders, but no options are presented that would exempt the AI shoreplant from meeting the cooperative formation requirements under Element 1 as well as the requirement that an LLP license holder may only assign their CQ to one cooperative. These terms will need to be coordinated with the AI shoreplant. QS under Option 6.2 are held by NOAA Fisheries and the annual CQ is issued to the eligible AI shoreplant operator(s) or an entity representing the community filing the intent to operate notice. That entity holds the CQ and determines how to distribute it to harvest vessels and could be based on an AI shoreplant associated cooperative if LLP license holders join that cooperative. LLP license holders that join the cooperative would be allowed to deliver the CQ they brought into the cooperative to any processor in the BS or AI but would be limited by cooperative rules developed by the cooperative participants.

The portion of the cooperative allocation that could be delivered harvested and delivered outside the AI would be the amount above the AI shoreplant's initial allocation. For example, if the AI shoreplant was initially allocated 1,000 mt of Pacific cod and LLP license holders brought an additional 200 mt of Pacific

¹²⁸ Because the quota is issued to the AI shoreplants or an entity that represents the community, it is assumed they will have contracts with vessels that define the delivery requirements. Those contracts could allow the Pacific cod to be delivered to any processor operating in the AI under conditions approved by the AI shoreplant operators or the community entity.

cod into the cooperative, the cooperative would be allowed to harvest and deliver a maximum of 200 mt from the BS and deliver that catch to a processor located in the BS.

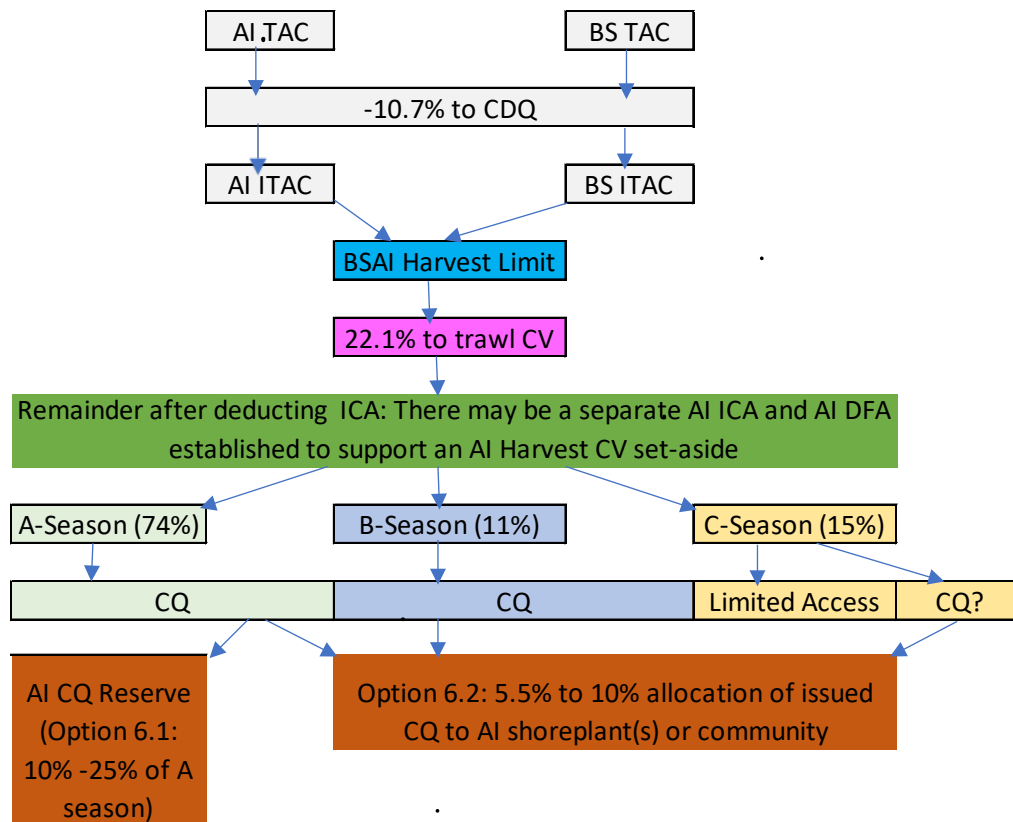
As a result of the two structures, it is expected that entities that are initially issued the CQ will have more market power when negotiating the terms of delivery, including who will deliver the Pacific cod. Market power could be shifted more towards the smaller CVs if Suboption 6.2.3 is selected and the AI shoreplants are required to grant exclusive access to deliver 10 percent to 50 percent of their harvest quota for use in the AI to trawl CVs that are less than 60 feet LOA and assigned an LLP license with a transferable AI trawl endorsement.

2.9.6.1. Option 6.1 – Cooperative required set-aside for AI shoreplants

Option 6.1 would impose a requirement that a predefined percentage (10 percent to 25 percent) of the BSAI trawl CV sector A-season Pacific cod apportionment must be reserved by cooperatives for delivery only to an AI shoreplant. The proposed definition of an AI shoreplant is the same as was established for BSAI Amendment 113. The overall structure of this action would be different than BSAI Amendment 113, that attempted to establish a set-aside of 5,000 mt from the trawl CV A-season BSAI sector apportionment that had to be delivered to an “AI shoreplant.” The proposed structure would require that the PCTCs utilize an intercooperative agreement to ensure that a percentage of their allocation is reserved for delivery to AI shoreplants during the A-season. There is no requirement that the total amount that is reserved is actually delivered.

Figure 2-13 provides a brief overview of the BS and AI Pacific cod fishery apportionments that may be established under Option 6.1 and Option 6.2. As currently prescribed in the specifications process, NMFS deducts the CDQ allocation from the AI and BS TACs to determine the ITAC for each area. ITACs for the BS and AI are combined to establish the non-CDQ harvest limit for all sectors. Trawl CVs are apportioned 22.1 percent of the non-CDQ harvest limit. ICAs are established as necessary to support incidental catch of Pacific cod in non-Pacific cod trawl CV directed fisheries. The remaining amount is divided between the three fishing seasons. Depending on the program structure selected by the Council, the A-season and B-season directed fishing allowance (DFA) would then be apportioned to cooperatives in the PCTC program. The C-season could be allocated to cooperatives or remain a limited access fishery. Cooperatives would be responsible for assuring that no more than 75 percent to 90 percent of the CQ derived from the A-season apportionment would be delivered to non-AI shoreplants, if Option 6.1 is selected.

Figure 2-13 Apportionment of the BS and AI TACs



The structure of the BSAI Pacific cod fishery is complex and directly impacts deliveries that are available to the AI shoreplants in a given year. The AI CQ reserve is intended to establish a minimum amount of CQ harvested during the BSAI Pacific cod trawl CV A-season could only be delivered to AI shoreplants. Reserve amounts would be established on an annual basis depending on the available BSAI ITAC. Whether these requirements are in place or not, it is likely some portion of the AI Pacific cod harvested by the trawl CV sector would be delivered to AI shoreplants if their market is competitive with offshore and non-AI shoreplant markets and the trawl CV fishery is open long enough for the AI fishery to be conducive to fishing. The amount of those deliveries may not be sufficient to sustain the viability of the plants' operations over the long-term. As noted in Amendment 113 analysis, the Adak shoreplant was able to attract trawl CV deliveries of AI Pacific cod by the trawl CV sector even when offshore and non-AI shoreplants were also operating in the AI Pacific cod fishery. Additionally, the recent Council action to limit Amendment 80 and AFA C/Ps acting as motherships from receiving BSAI non-CDQ Pacific cod deliveries from trawl CVs would likely increase the potential for trawl CV deliveries of AI Pacific cod to AI shoreplants by reducing the number of potential markets for trawl CV harvested AI Pacific cod.

BSAI Amendment 113 was implemented at the start of the 2017 fishing year but was vacated as a result of the March 21, 2019, U.S. District Court (Court) opinion. Specifically, the Court found NMFS had not demonstrated the rule implementing Amendment 113 was reasonably calculated to promote conservation consistent with National Standard 4, and that NMFS could not show consistency with National Standard 8 because in the Court's view the rule allocates fishery resources to two particular communities.

Differences in the proposed PCTC structure and Amendment 113 will require that some regulations vacated under Amendment 113 would need to be reinstated as they were before or modified prior to being reinstated. The Council and NMFS may take action to implement a new set of regulations that are similar to those vacated under Amendment 113 but are consistent with the Court's opinion. The new rulemaking

would need to reauthorize portions of the regulations that were vacated by the Court’s action that are necessary to implement a new action. For example, Amendment 113 defined an “AI shoreplant” to mean a processing facility that is physically located on land west of 170° W. longitude within the State of Alaska (State). Defining AI shoreplants is necessary because the existing term “shoreside processor” in 50 CFR §679.2 can include processing vessels that are moored or otherwise fixed in a location (i.e., stationary floating processors), but not necessarily located on land. When Amendment 113 was vacated the associated regulations implemented in 2017 are longer in effect. As a result, implementing the proposed regulation would require reauthorizing some of those vacated regulations, like the definition of an AI shoreplant. The Council could include in the proposed action an alternative to remove or replace extraneous Amendment 113 FMP language. The regulations that were implemented for Amendment 113 as defined in the Final Rule¹²⁹ implementing the action are listed below.

- Define the term “Aleutian Islands shoreplant” in regulation.

The definition used in the example above would need to be reinstated as it was previously defined if the AI set-aside proposed under Option 6.1 or the PCTC Program allocation under Option 6.2 with the AI shoreplant delivery requirement was selected as part of the Council’s action.

- Calculate and define the amount of the AI Pacific cod TAC available as a DFA and the amount that will be available as an ICA.

Under Amendment 113, NMFS annually specified an ICA and a DFA derived from the AI Pacific cod non-CDQ TAC. Each year, during the annual harvest specifications process described at 50 CFR §679.20(c), NMFS would specify an amount of AI Pacific cod that NMFS estimates would be taken as incidental catch when directed fishing for non-CDQ groundfish other than Pacific cod in the AI. This amount would be the AI ICA and would be deducted from the AI non-CDQ TAC. The amount of the AI non-CDQ TAC remaining after subtraction of the AI ICA would be the AI DFA.

NMFS specified the AI ICA and DFA to clearly establish the amount of AI Pacific cod that would be used to determine the amount of the AI CV Harvest Set-Aside. The specification also provides the public with notification of the amount of the AI non-CDQ TAC that is available for directed fishing prior to the start of the fishing season to aid in the planning of fishery operations. The AI DFA is the maximum amount of Pacific cod available for directed fishing by all non-CDQ fishery sectors in all seasons in the AI. Under the proposed action, this would include any directed trawl CV catches delivered to AI shoreplants under the AI CV harvest set-aside, limited access fishery (if the C-season is not allocated under the PCTC), and CQ deliveries to processors.

Although the amount of the AI ICA may vary from year to year, NMFS specified an AI ICA of 2,500 mt for the years 2017 through 2019. NMFS determined that amount was needed to support incidental catch of Pacific cod in other AI non-CDQ directed groundfish fisheries. In future years, if these regulations are reimplemented, NMFS would specify the AI ICA in the annual harvest specifications based on recent and anticipated incidental catch of AI Pacific cod in other AI non-CDQ directed groundfish fisheries.

- Limit the amount of A-season (from January 20 until April 1) Pacific cod that may be harvested by the trawl CV sector in the BS prior to March 21 (BS Trawl CV A-Season Sector Limitation).

As described in this section, the regulatory change would not be needed to be reimplemented under Option 6.1 or Option 6.2, if the PCTCs are required to limit their harvests from the BS during the A-season. However, a limitation on the amount of Pacific cod that may be harvested from the AI may be necessary to ensure that the AI A-season ITAC is not harvested before the AI delivery requirement is met. There are two potential components of the directed BSAI Pacific cod trawl fishery under this action, the PCTC Program fishery and the limited access fishery for all the other sectors that are apportioned some of

¹²⁹ <https://www.federalregister.gov/d/2016-28152/p-28>

the BSAI Pacific cod ITAC. Allocations to the limited access fishery can be harvested and delivered in either the BS or AI. The PCTC Program allocations would be structured so that a maximum of 75 percent to 90 percent of the A-season apportionment could be delivered to a non-AI shoreplant. The portion of the CQ that is delivered to the AI shoreplants could only be harvested from the AI and delivered to the AI shoreplants that are eligible to receive those fish.

To help ensure that the stakeholders in the AI are provided an opportunity to utilize any established percentage of the Pacific cod A-season trawl CV sector allocation, the Council could consider establishing an AI reserve of A-season AI Pacific cod TAC so that a minimum of 10 percent to 25 percent of the trawl CV sector A-season allocation would be available to trawl CVs that deliver to AI shorebased processing plant. If a portion of the AI ITAC is not reserved for delivery to the AI shoreplants by the trawl CV sector, there is no guarantee that other sectors would not harvest the AI ITAC before the trawl CV sector completing their AI deliveries. If those deliveries cannot be made during the A-season, the AI shoreplants would lose exclusive access to those fish.

AI shoreplants that may be eligible to receive AI Pacific cod from the set-aside are located in the communities of Adak and Atka. Although the Atka shoreplant has not received and processed AI Pacific cod from trawl CVs, the shoreplant in Adak has received and processed relatively large amounts of Pacific cod. Section 2.7.1 of the Amendment 113 RIR provided details on the delivery and processing of AI Pacific cod that could be published under the current confidentiality regulations (NMFS, 2016).

Since 2008, except for 2018 and 2019, AI fishing communities, and specifically the community of Adak and its shoreplant, have seen a decrease in the amount of Pacific cod being delivered to their plant from the federal component of the fishery. The amount of Pacific cod delivered to AI shoreplants has been highly variable, which is not conducive to stable shoreside operations. Several factors have contributed to this instability, and therefore the reason to consider this action, including decreased Pacific cod biomass in the AI subarea; the establishment of separate OFLs, ABCs, and TACs for Pacific cod in the BS and the AI; changing Steller sea lion protection measures; and changing fishing practices in part resulting from rationalization programs that allocate catch to specific fishery participants.

Recent history of the AI Pacific cod fishery indicates that from 2008 through 2017, trawl CVs have primarily delivered their catch of AI Pacific cod to a small group of C/Ps that operate as motherships. As deliveries of AI Pacific cod harvest from trawl CVs to C/Ps operating as motherships have increased in recent years, the amount of trawl CV harvest delivered to AI shoreplants has decreased. Additionally, C/Ps operating as motherships and other floating processors have demonstrated the capacity to process the entire ITAC of Pacific cod in the AI in years when no AI shoreplant is in operation. From 2018 through 2019, C/Ps acting as a mothership and other floating processors agreed to stand-down to allow the AI shoreplant to accept deliveries that were generally in-line with the 5,000 mt set-aside envisioned under Amendment 113. Additional information regarding the fishery was provided in the discussion paper presented at the December 2019 Council meeting under agenda item D-3 (NPFMC, 2019). After that action was vacated and the pace of the fishery continued to increase in 2020, the fleet was unable or unwilling to agree to a stand-down and the amount of trawl CV Pacific cod delivered to the AI shoreplant from the federal and parallel fisheries decrease substantially. The Adak plant was still able to access deliveries from the State GHL AI Pacific cod fishery. The Adak plant was not active in the AI Pacific cod trawl fishery in 2021.

The intent of proposed Option 6.1 is to create a management structure to incentives deliveries to the AI shoreplants that would approach a defined target level. Those Pacific cod deliveries would be determined to be necessary to mitigate the risk that trawl CVs that deliver to AI shoreplants and the communities in which they are located would be preempted from participating in the AI Pacific cod fishery by processors that are not defined as an AI shoreplant. The AI CQ harvest reserve could be considered an important component of the amendment package because:

- the Pacific cod allocation for the BSAI trawl CV sector has been significantly lower in recent years and the pace of the BSAI trawl CV sector apportionment harvest has increased
- the rationalization programs, and particularly the Amendment 80 Program and AFA program, allowed an influx of processing capacity into the AI Pacific cod fishery that was mitigated by BSAI Amendment 120 and
- AI communities and shoreplants (Adak) have received almost all their groundfish first wholesale gross revenue from AI Pacific cod.

The action is being considered to provide balance between the stakeholders in the BSAI trawl CV sector, if necessary. The action does not modify existing harvest allocations to the nine BSAI Pacific cod sectors defined in 50 CFR §679.20(a)(7)(ii)(A). Although the nine non-CDQ sectors would continue to receive their existing harvest allocations of BSAI Pacific cod, each sector's ability to harvest a portion of its BSAI Pacific cod allocation in the AI may be affected. The impacts are most likely to occur as a result of either changes in the AI DFA attributed to this proposed program or fewer reallocations of Pacific cod from the trawl CV sector.

This proposed action requires that some or all the AI DFA be reserved for harvest by vessels fishing CQ under the PCTC Program and delivering their catch to AI shoreplants for processing. NMFS would account for harvest and processing of AI Pacific cod under the AI CQ reserve separate from, and in addition to, its accounting of AI Pacific cod catch by the nine non-CDQ fishery sectors established in 50 CFR §679.20(a)(7)(ii). Because of this separate accounting, the AI CQ reserve would not increase or decrease the amount of BSAI Pacific cod allocated to any of the non-CDQ fishery sectors. The AI CQ reserve would apply from January 1 through the end of the BSAI trawl CV Pacific cod A-season.

When the AI CQ reserve is set equal to the AI DFA, directed fishing for Pacific cod in the AI may only be conducted by PCTC Program vessels that deliver their catch of AI Pacific cod to AI shoreplants for processing. All other sectors would be prohibited from directed fishing for Pacific cod in the AI, unless when the AI CQ reserve is removed and sufficient fish are available. PCTC Program vessels that do not want to deliver their directed catch of AI Pacific cod to AI shoreplants for processing, or do not have a market with an AI shoreplant, would be prohibited from directed fishing for Pacific cod in the AI when the AI CQ reserve is in effect and the DFA did not support directed fishing for deliveries to other processors. These vessels would be permitted to conduct directed fishing for groundfish other than Pacific cod in the AI when the AI CQ reserve is in effect, and their incidental harvests of Pacific cod would accrue toward the AI ICA. AI Pacific cod taken as part of the ICA does not need to be delivered to an AI shoreplant.

When the AI DFA is greater than the AI CQ reserve amount, the difference between the DFA and the AI CQ reserve will be available for directed fishing by all non-CDQ fishery sectors with sufficient A-season allocations and may be processed by any eligible processor. This difference was called the “AI Unrestricted Fishery” under Amendment 113. C/Ps would be permitted to conduct directed fishing for Pacific cod in the AI and process that directed catch as long as the AI Unrestricted Fishery is open to directed fishing. NMFS would determine whether the AI Unrestricted Fishery is sufficient to support a directed fishery and would notify the public through a notice in the Federal Register.

Trawl CVs that choose to operate in the limited access fishery during the C-season, if it is excluded from the PCTC could fish in either the BS or AI. Any Pacific cod catch from the directed fishery, if Pacific cod is open to directed fishing by these trawl CVs, could be delivered to any legally permitted processor. If trawl CVs in the limited access fishery choose to deliver to an AI shoreplant, it could potentially increase the overall amount of Pacific cod delivered to the AI shoreplants. However, because the limited access fishery has been relatively small or non-existent in the AI and the majority of catch would probably be delivered to BS processors, the overall impact to AI processors would be minor.

- Set aside some or all the AI Pacific cod non-CDQ DFA for harvest by trawl CVs directed fishing for AI Pacific cod and delivering their catch for processing by AI shoreplants from January 1 to March 15.

This regulation would need to be modified. There would no longer be a requirement that some or all the AI set-aside must be delivered to the AI shoreplant by March 15 as was required under Amendment 113. Because the March 15 date is no longer a part of the proposed action it is not needed to enforce the proposed regulations. However, if the Council wishes to ensure that the AI is not closed to directed fishing because the AI ITAC is taken, the Council could recommend that a portion of AI ITAC that is equal to the AI shoreplant delivery requirement could be established as recommended in the previous bullet.

- Require that either the City of Adak or the City of Atka annually notify NMFS of its intent to process AI Pacific cod during the upcoming fishing year in order for the AI CQ reserve to be effective in the upcoming fishing year.

This regulation would be necessary under the proposed action to allow NMFS to determine whether the AI CQ reserve is necessary under Option 6.1 or the allocation of harvest quota for use in the AI is needed under Option 6.2. It would require that either the City Manager of the City of Adak or the City Administrator of the City of Atka notify NMFS of the city's intent to support an active AI shoreplant to process AI Pacific cod in the upcoming fishing year. If neither city notifies NMFS in accordance with regulatory requirements described below, the AI CQ reserve would not be in effect for the upcoming fishing year and the trawl CV cooperatives are not limited in the amount of Pacific cod they may harvest from either the BS or AI, except as controlled by the area ITACs and the sector apportionment.

Regulations would require annual notification to NMFS in the form of a letter or memorandum signed by the City Manager of Adak or the City Administrator of Atka stating the city's intent to support an active AI shoreplant to process AI Pacific cod in the upcoming fishing year. This signed letter or memorandum is the official notification of intent. The official notification of intent must be postmarked no later than October 31 of the year prior to fishing. The official notification of intent must be submitted to the NMFS Alaska Regional Administrator by certified mail through the United States Postal Service. The City Manager of Adak or City Administrator of Atka must also submit an electronic copy of the official notification of intent and the certified mail receipt with postmark via email to NMFS no later than October 31. Email submission of electronic copies of the official notification of intent and the certified mail receipt with postmark would provide NMFS with the timely information it needs to manage the upcoming fisheries. Email notification is in addition to notification via certified U.S. Mail and does not replace the requirement for notification through the U.S. Postal Service.

A city's notification of intent to process AI Pacific cod must contain the following information: Date, name of city, a statement of intent to process AI Pacific cod, statement of calendar year during which the city intends to process AI Pacific cod, and the signature of and contact information for the City Manager or City Administrator of the city whose local AI shoreplant is intending to process AI Pacific cod.

On or shortly after November 1 each year the Regional Administrator would send a signed and dated letter either confirming receipt of the city's notification of their intent to process AI Pacific cod, or informing the city that notification was not received by the deadline.

Based on the final rule that was published for Amendment 113, the notification requirement was required from either Adak or Atka and not another city that might have an AI shoreplant in the future to make the set-aside available for processing by any shoreplant west of 170° W. longitude in the AI. When the rule was implemented, the Council recognized that only the City of Adak and the City of Atka could be prepared to process AI Pacific cod; therefore, the Council specified that the notification requirement would only be required from either Adak or Atka and not another city that might have an AI shoreplant in

the future. The Council could consider requiring notification from additional AI cities with shoreplants capable of accepting AI trawl CV deliveries in the future if they develop and the need arises.

- Remove the BS Trawl CV A-Season Sector Limitation and the AI CV Harvest Set-Aside if less than 1,000 metric tons (mt) of the harvest set-aside is delivered to (i.e., landed at) AI shoreplants on or before February 28, or if the harvest set-aside is fully taken before March 15.

A similar regulation is no longer necessary to account for the removal of the 1,000 mt landing requirement by February 28 or the removal of the BS Trawl CV A-Season Sector Limitation on March 15. Both regulations that were vacated are no longer necessary under the proposed actions because the options under consideration do not include a requirement that 1,000 mt of the set-aside be landed by February 28. As envisioned under this action, there will not be a BS Trawl CV A-Season Sector Limitation, but the cooperatives must provide a plan to deliver to AI shoreplants in their intercooperative agreement.

The action would need to add a regulation that would allow any portion of the unused AI CQ reserve or harvest quota allocated for use in the AI to be reallocated to eligible LLP license holders with BS and AI catch history that are members of a BSAI Pacific cod cooperative if Adak and Atka withdraw their intent to operate notice. The AI CQ reserve would expire at the end of the B-season (the reserve is deducted from the A season) and the harvest quota allocated for use in the AI would expire when the cooperative fishery for the AI shoreplants ends, if the intent to operate is not withdrawn sooner.

If the AI shoreplants withdraw their intent to operate, an amount of annual quota equivalent to the unharvested Pacific cod would be reissued to all eligible holders of LLP licenses with BS and/or AI harvest history in proportion to their initial annual allocations. The initial allocations are described under the Element 2 sections of this paper. Allowing the reallocation of CQ to LLP license holders will help ensure that OY is better achieved as part of the proposed program.

When building the record for Option 6.1 and/or Option 6.2 the Council should explain how the action is consistent with National Standard 8. Under a LAPP program, the Council has explicit authority to implement regional or port-specific delivery or landing requirements as described at 16 USC 1853a(c)(5)(B)(i).

The Council should also consider explaining how the action is designed to provide benefits and/or stability to both harvesters and fishery-dependent communities. In doing so it could explain how it is responsive to changes in management regimes that necessitate putting protections in place. For example, the action requires participating CVs to deliver a defined portion of the overall A-season BSAI Pacific cod catch to AI shoreplants because the timing of the BS and AI Pacific cod fisheries, the compressed timing of the fishery, and the structure of the trawl CV apportionment create incentives for the entire trawl CV apportionment to be harvested from the BS and delivered to plants closer to the BS fishing grounds. The AI fishery is then left for, primarily freezer longliners to harvest and process the catch at-sea. Together these factors, make it very difficult for the trawl CVs that are dependent on the AI fishery and the AI shoreplants to effectively complete for a sufficient share of the sector's allocation to conduct viable fishing operations.

The rationale for creating the AI CQ reserve for the benefit of stakeholders in the trawl CV sector of AI Pacific cod fishery is related to the overall structure of the BSAI Pacific cod fishery and the Council's desire to consider some protections for those AI stakeholders. BSAI Pacific cod is allocated to the trawl CV sector at an amount equal to 22.1 percent of the combined BSAI ITAC. Trawl CVs may harvest some or all the sector's A-season (74 percent of the annual amount) allocation in either the BS or AI, as long as the fishery remains open to directed fishing in that area. The fishery would remain open as long as the seasonal apportionment of Pacific cod has not been determined to be harvested; the fishery would be closed to directed fishing when the seasonal apportionment for that area is projected to be taken. Because the trawl CV sector traditionally begins fishing in the BS and the seasons have been open for a shorter

time in recent years, it has been possible for the entire trawl CV sector A-season apportionment to be taken before trawl CVs begin fishing in the AI area after the Pacific cod aggregate in late February or early March. In that instance, the trawl CVs (and AI shorebased processors would not receive sufficient product to operate efficiently) that have been dependent on the fishery, in the recent past, would not be able to participate in the AI during the A-season, even if the overall AI Pacific cod fishery remains open to other sectors that have not fully harvested their sector allocation. The remaining AI ITAC would need to be taken by trawl C/Ps, freezer longliners, pot gear vessels, jig vessels, and longline CVs. The freezer longline vessels have the largest allocation and would be most likely to harvest any remaining AI A-season ITAC. The only sectors that would deliver to the AI shoreplants are the pot, jig, and longline CVs and the amount they would deliver may not be sufficient to keep the shoreplants viable. The trawl CVs that may be more reliant on the AI than the BS may have limited opportunities to fish in the AI if the sector's apportionment is taken before the Pacific cod aggregate in the AI, allowing for lower costs to harvest the Pacific cod. Vessels in this group includes CVs less than 60 feet LOA that could be granted exclusive access to harvest a portion of the AI shorebased plants allocation under Option 6.2.

Under the proposed allocation structure, the PCTC Program would allow the AI set-aside to be taken in the AI, unless trawl CVs or any other gear type harvested the AI ITAC before the AI set-aside could be taken. This possibility would be eliminated if the AI DFA was reduced by an amount equal to the AI trawl CV harvest set-aside to prevent other sectors from harvesting the entire AI ITAC before the set-aside is harvested.

Limiting the set-aside to the A-season could impact the ability of the AI shoreplant(s) to access the allocation. Because any portion of the set-aside that is not used by the end of the A-season would expire, it is possible that it could create an incentive for CVs not to deliver to the AI shoreplant during the A-season and wait for the fish to be reallocated to the BS cooperatives. BS cooperatives would have an incentive to employ this strategy because harvesters could determine how to deliver the fish within their own cooperative and not have to reach an agreement through an inter-cooperative arrangement and the processor associated with the cooperative could take deliveries of the fish. Whether they would employ such a strategy will depend on the delivery terms and conditions offered by the AI shoreplant(s). These would include the price paid, payment schedule. Also, because it is possible that the AI shoreplant(s) that operate in the future will not receive an allocation of harvest shares under Element 5.4, it (they) will have limited ability to negotiate with CVs that hold the CQ to establish favorable delivery terms.

The conditions why the Aleut Corporation's pollock allocation has not been harvested and why the Pacific cod set-aside may not be harvested are different. The Aleut Corporation has been allocated pollock since 2005. In most years since the allocation was implemented, a majority of the pollock has been reallocated to the BS DFA and assigned to AFA sectors in proportion to their initial allocation.¹³⁰ For example, 10,000 mt of 2020 Aleutians Islands Aleut Corporation pollock DFA was added to the 2020 Bering Sea pollock DFA (Table 2-145). The 2020 Bering Sea subarea DFA was increased by 10,000 and made available to the AFA sectors. The reasons for the reallocations have been described in the Experimental Fishing Permit applications to determine if the pollock fishery could be viable.¹³¹ Stellar sea lions were listed as "threatened" under the Endangered Species Act in 1990. Directed pollock fishing in the AI was closed beginning in 1999, in part due to concerns about Steller sea lions. In 2001 some Stellar sea lion protection measures were relaxed, but no allowance was made for pollock fishing inside critical habitat in the AI. In 2015 NMFS reopened AI pollock fishing that was restricted but generally kept closures inside 10 miles from rookeries and 3 miles from haulouts east of 178 degrees longitude in Area 542 and in Area 541. These area closures, net damage resulting from trying to fish areas the pollock are located, and the increased abundance of Pacific ocean perch in the pollock fishing areas have resulted in much of the Aleut Corporation pollock allocation being reallocated to the BS. NMFS staff have also

¹³⁰ Inshore sector - 50 percent, C/P sector - 40 percent, and mothership sector -10 percent of the BS DFA

¹³¹ <https://media.fisheries.noaa.gov/dam-migration/efp-popby-app-1118.pdf>

noted that in 2021 there was no effort in the Aleut Corporation pollock fishery because the AI shoreplant was not operating.

Table 2-145 Aleut Corporation pollock allocations and reallocations, 2005 through 2020

Year	Initial Allocation	Reallocations		Final Allocation
		Metric Tons	% of Initial Allocation	
2005	15,100	13,900	92%	1,200
2006	15,300	14,403	94%	897
2007	15,500	-	0%	15,500
2008	15,500	-	0%	15,500
2009	15,500	-	0%	15,500
2010	15,500	-	0%	15,500
2011	15,500	12,500	81%	3,000
2012	15,500	10,500	68%	5,000
2013	15,500	13,000	84%	2,500
2014	15,100	11,750	78%	3,350
2015	14,700	12,554	85%	2,146
2016	14,700	13,000	88%	1,700
2017	14,700	14,700	100%	-
2018	14,700	12,200	83%	2,500
2019	14,700	14,600	99%	100
2020	14,700	10,000	68%	4,700

Note: Aleut Corporation allocation started in 2005.

Source: <https://media.fisheries.noaa.gov/dam-migration/bsai-pollock-reallocation-1999-present.pdf>

Pacific cod in the AI area tend to aggregate in late February and early March and the fleet has been able to harvest Pacific cod outside critical habitat and without excessive bycatch of Pacific ocean perch. Given those factors, whether Pacific cod will be delivered to the AI shoreplant(s) depends on the willingness of the cooperatives (through the inter-cooperative agreement) to work with the communities to ensure that Pacific cod CQ is harvested as opposed to a lack of ability to harvest the fish.

Another factor that could limit Pacific cod harvests in the AI area is the halibut PSC limits that are implemented for the BSAI Pacific cod trawl CV fishery. Halibut PSC limits are established for the BSAI and if the cooperatives or the limited access fishery take the entire limit in the BS it would also prohibit cooperatives from delivering directed fishery BSAI Pacific cod to any processor.

Halibut PSC limits have not constrained the AI trawl CV sector fishery in the past, and it is anticipated that halibut usage under the PCTC Program may decline. However, AI shoreplant proponents are concerned that in some years the PSC limit could constrain the AI fishery. The concern is driven by the timing of the AI fishery relative to the BS fishery and the proposed halibut PSC limit reductions. Halibut PSC limits apportioned to the BSAI trawl CV Pacific cod sector could be reduced by 10 percent to 35 percent (Option 3.2) limit Pacific cod harvests in the AI area. A discussion of halibut PSC limits and the division of those limits between trawl CVs and trawl C/Ps was provided under Element 3 (Section 2.9.3).

The apportionment of halibut PSC limits under all options is structured such that PSC limits are assigned to cooperatives in the same proportion as the Pacific cod, and it is assumed that would also be true for any

AI shoreplant allocations under Option 6.2.¹³² Under Option 6.1 the Pacific cod CQ and any PSC limits would be controlled by the cooperatives and they would determine how it is divided among members and members would try to avoid catching PSC species while maximizing benefits derived from their allocations. In all cases it is assumed that cooperative members would try to avoid halibut PSC to ensure the cooperative would be able to harvest their entire allocation. If halibut PSC do limit cooperatives or the limited access fishery from harvesting BSAI Pacific cod, it is expected to have greater impacts on seasons after the A-season. Recall that the halibut PSC limit is an annual allocation and is not divided by seasons. Therefore, it is likely that the B-season and C-season would be impacted before the AI fishery, unless the value of AI fishery to harvesters is less than the B-season or C-season fisheries.

The simplest way for halibut PSC to be managed is to allocate all the PSC as described under Element 3 and letting the cooperatives manage its usage. If the Council wanted to ensure that some PSC was reserved for use in the AI fishery, it would need to allocate it among CQ holders (Element 3.2) and ensure that a portion of the limit would be used, when necessary, to harvest the AI set-aside. There is currently no requirement in the Council's motion that cooperative's set-aside a specific amount of halibut for use in the AI when harvesting the AI Pacific cod set-aside. This is left up to the cooperatives to administer. The Council would need to add an alternative if it wanted to ensure the cooperatives reserved halibut PSC for use in the AI.

The following example is used for illustrative purposes to show the pro rata share of the halibut PSC limit that would be apportioned could be used to harvest deliveries to the AI shoreplant(s) if Option 6.1 is selected. Under Option 6.1, the cooperatives would determine the best use of the PSC limits and the PSC limit could be used to harvest Pacific cod from the BS or AI. In this example, if 15 percent of the BSAI Pacific cod trawl CV A-season sector allocation is apportioned to the AI CQ reserve fishery, it means that 11.1 percent of the annual BSAI Pacific cod trawl CV sector allocation is apportioned to the AI CQ reserve fishery. Table 2-146 shows the amount of halibut PSC reserve that would be proportional to a 11.1 percent of the sector apportionment. Recall that the halibut PSC limit is currently set as a combined limit for both the trawl CV and trawl C/P sectors. Table 2-146 considers a range of 50 percent to 100 percent of the halibut PSC limit being apportioned to the trawl CV sector. Again, this range was arbitrarily selected by the analyst to facilitate the discussion and does not represent a range that is being considered by the Council. If 90 percent of the trawl BSAI Pacific cod halibut PSC limit was selected and an equal proportion of the halibut PSC limit and the Pacific cod ITAC were apportioned to the trawl CV sector, it means that a 39.1 mt halibut PSC limit would be apportioned as the AI CQ reserve. That halibut PSC limit would be used to support the AI CQ reserve fishery. During years the entire halibut PSC limit is not taken it could be either left in the water to benefit the halibut biomass or could be reapportioned to qualified LLP license holders after March 21 when the Pacific cod is reapportioned.

¹³² Under Option 6.2 crab PSC limits would not be assigned to AI shoreplant unless CVs assigned LLP licenses with CQ to the cooperative. Then crab PSC limits would only be assigned to the cooperative pro rata to the LLP licenses CQ. This would provide PSC limits for the CVs to fish their allocation in either the BS or AI, but would not assign crab PSC to the cooperative for the CQ that must be harvested from the AI. The Council may wish to provide further direction on the treatment of crab PSC limits if the LLP license holder assigns their CQ to an AI shoreplant cooperative.

Table 2-146 Range of possible halibut PSC limit apportionments assigned to the AI set-aside Pacific cod trawl CV fishery.

A-season trawl CV cod allocated to the AI shoreplants	% of annual BSAI trawl CV cod allocation assigned to AI set-aside fishery	Metric tons of halibut apportioned to AI set-aside based on % of 391mt of trawl limited access halibut PSC limit assigned to CVs					
		50%	60%	70%	80%	90%	100%
10%	7.4%	14.5	17.4	20.3	23.1	26.0	28.9
11%	8.1%	15.9	19.1	22.3	25.5	28.6	31.8
12%	8.9%	17.4	20.8	24.3	27.8	31.2	34.7
13%	9.6%	18.8	22.6	26.3	30.1	33.9	37.6
14%	10.4%	20.3	24.3	28.4	32.4	36.5	40.5
15%	11.1%	21.7	26.0	30.4	34.7	39.1	43.4
16%	11.8%	23.1	27.8	32.4	37.0	41.7	46.3
17%	12.6%	24.6	29.5	34.4	39.4	44.3	49.2
18%	13.3%	26.0	31.2	36.5	41.7	46.9	52.1
19%	14.1%	27.5	33.0	38.5	44.0	49.5	55.0
20%	14.8%	28.9	34.7	40.5	46.3	52.1	57.9
21%	15.5%	30.4	36.5	42.5	48.6	54.7	60.8
22%	16.3%	31.8	38.2	44.6	50.9	57.3	63.7
23%	17.0%	33.3	39.9	46.6	53.2	59.9	66.5
24%	17.8%	34.7	41.7	48.6	55.6	62.5	69.4
25%	18.5%	36.2	43.4	50.6	57.9	65.1	72.3

This assumes the halibut PSC assigned to the Pacific cod fishery before Element 3 apportionments between trawl CV sector and the AFA C/P sector.

If the AI shoreplant(s) formed a cooperative(s) under Option 6.1, CQ derived from LLP licenses would be treated the same whether it is assigned to an AI shoreplant cooperative or any other cooperative, in terms of delivery requirements. Any CQ derived from LLP licenses could be delivered to any processor, within the terms of the cooperative contract. Because the LLP license derived CQ could be harvested from the BS it is assumed that crab PSC would also be allocated to the AI shoreplant on a pro-rata basis. Because the AI shoreplant does not receive an allocation of QS under Element 5.4 it would not be able to compensate those CVs any allocation reductions that result from Element 5.4. So, the LLP license holders may need to forgo an amount of Pacific cod that another processor could provide to join an AI shoreplant cooperative. Attracting CVs to its cooperative more difficult as a result.

Table 2-147 provides a summary of the BSAI Pacific cod fishery TACs, ITACs, and trawl CV apportionments for the years 2003 through 2020. Information in the far righthand column shows the percentage of the BSAI A season trawl CV apportionment that would be needed annually and on average to allocate 5,000 mt to the AI shoreplant(s). The percentage ranges from 13.8 percent to 27.1 percent of the trawl CV A season apportionment, with an average of 16.1 percent. The 10 percent to 25 percent allocation range being considered by the Council would allocate from 2,859 mt to 7,148 mt, on average. The Council's PA over the same period ranged from 2,214 mt to 4,335 mt with an average of 3,431 mt.

Table 2-147 BSAI TAC, ITAC, trawl CV sector total and A season apportionments (mt), and percentage of A season, 2003 through 2020

Year	TAC	ITAC	ITAC as % of TAC	CV % of ITAC	Trawl CV			10% of A	12% of A	25% of A	% to equal 5,000 mt
					annual apportionment total	Trawl CV A season apportionment	A-season hindcast ICA	season less A ICA	season less A ICA	season less A ICA	
2003	207,500	191,938	92.5%	22.1%	42,418	31,390	2,578	2,881	3,457	7,203	17.4%
2004	215,500	199,338	92.5%	22.1%	44,054	32,600	2,590	3,001	3,601	7,502	16.7%
2005	206,000	190,550	92.5%	22.1%	42,112	31,163	3,578	2,758	3,310	6,896	18.1%
2006	194,000	174,067	89.7%	22.1%	38,469	28,467	2,690	2,578	3,093	6,444	19.4%
2007	170,720	157,916	92.5%	22.1%	34,900	25,826	1,193	2,463	2,956	6,158	20.3%
2008	170,720	152,453	89.3%	22.1%	33,692	24,932	1,717	2,322	2,786	5,804	21.5%
2009	176,540	157,916	89.5%	22.1%	34,899	25,826	2,415	2,341	2,809	5,853	21.4%
2010	168,780	150,975	89.5%	22.1%	33,365	24,690	2,085	2,261	2,713	5,651	22.1%
2011	227,950	203,559	89.3%	22.1%	44,987	33,290	2,200	3,109	3,731	7,772	16.1%
2012	261,000	233,073	89.3%	22.1%	51,509	38,117	4,207	3,391	4,069	8,477	14.7%
2013	260,000	232,180	89.3%	22.1%	51,312	37,971	2,178	3,579	4,295	8,948	14.0%
2014	253,894	226,727	89.3%	22.1%	50,107	37,079	951	3,613	4,335	9,032	13.8%
2015	249,422	222,734	89.3%	22.1%	49,224	36,426	2,031	3,439	4,127	8,599	14.5%
2016	251,519	224,606	89.3%	22.1%	49,638	36,732	1,798	3,493	4,192	8,733	14.3%
2017	239,399	213,784	89.3%	22.1%	47,246	34,962	2,489	3,247	3,897	8,118	15.4%
2018	203,831	182,021	89.3%	22.1%	40,227	29,768	1,770	2,800	3,360	6,999	17.9%
2019	180,689	161,355	89.3%	22.1%	35,659	26,388	2,982	2,341	2,809	5,852	21.4%
2020	155,595	138,946	89.3%	22.1%	30,707	22,723	4,270	1,845	2,214	4,613	27.1%
Average						31,019	2,429	2,859	3,431	7,148	16.1%
Std Dev						5,000	874	517	620	1,292	

Source: NMFS annual specifications

Cooperatives must reserve 10 percent of the AI set-aside for delivery by vessels that are less than 60 feet LOA that are assigned to an LLP license with a transferrable AI endorsement. As many as eight vessels could benefit from this provision. As discussed under Option 6.2 these vessels have the capacity to harvest the set-aside and on average, using the 2003 through 2020 data reported above, would be able to harvest about 343 mt of Pacific cod in addition to their modest CQ allocations under the program. Combined the allocations and the set-aside will make it more likely that at least one of these CVs will obtain a market and participate in the fishery. The exclusive access to the set-aside may also increase the value of one of more of the AI transferrable endorsements.

2.9.6.2. Option 6.2 – Annual allocation of BSAI quota to an AI shoreplant operator

Option 6.2 would establish an annual allocation of Pacific cod CQ to an AI shoreplant operator when the city of Adak or Atka files a complete and approved intent to process application with NMFS. This type of cooperative quota is referred to in the paper as harvest quota for use in the AI. harvest quota for use in the AI would be assigned as a percentage of the annual trawl CV catch limit that is allocated under the PCTC. The allocation is an annual allocation, so the harvest privilege is issued as pounds of quota and the underlying QS, that is a long-term harvest privilege, is not held by the plant operator. Under the proposed structure NMFS would hold the QS and issue the resulting pounds of quota to the processor operator, unless Suboption 6.2.2 is selected to issue the annual quota to the entity representing the community listed on the intent to process application. If the Council issues quota to a community entity it will need to establish eligibility criteria under MSA 303A(c)(3) and require the communities to submit sustainability plans that meet the criteria specified through rulemaking (or, at minimum, developed by Council, approved by Secretary, published in Federal Register). The sustainability plan must demonstrate how the plan will address the social and economic development needs of coastal communities, including those that

have not historically had the resources to participate in the fishery, for approval based on criteria developed by the Council. Ownership caps would not apply to harvest quota for use in the AI because NMFS would hold the QS units associated with the harvest quota for use in the AI, so no ownership of the underlying harvest quota for use in the AI fishing privilege could be permanently transferred. Any future purchases of QS assigned under Element 2 or Element 5 would be subject to ownership caps defined under Element 8. Only the CQ assigned under Option 6.2 would be exempt from the use caps defined under Element 8.

Table 2-148 shows the amount of harvest quota for use in the AI that would be allocated to AI shoreplant operators when the allocation is set at 5.5 percent or 10 percent of the annual BSAI trawl CV sector quota. The calculation is provided for each year from 2003 through 2020 based on allocating all seasons to the PCTC to show the variation in the trawl CV sector apportionment and how it would have impacted each of the percentage allocations of harvest quota for use in the AI. If the C-season is excluded from the PCTC the amounts shown would be reduced by 15 percent. Information in the two far-right side columns report the difference between the harvest quota for use in the AI at 5.5 percent and 10 percent of the annual BSAI trawl CV sector apportionment and 5,000 mt that was apportioned under BSAI Amendment 113. The bottom rows of the table are presented to show the average allocation that would have resulted over the period considered and one standard deviation from the mean over the period.

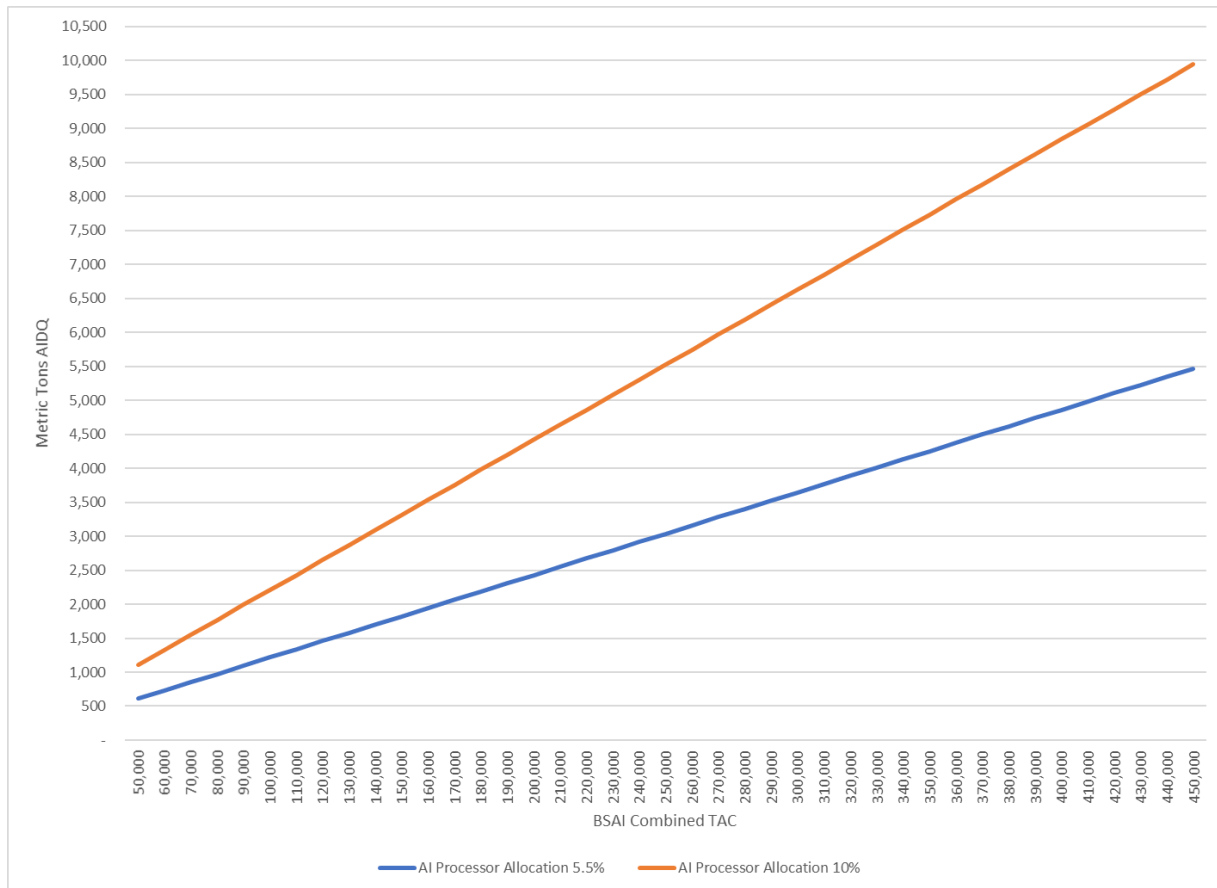
Table 2-148 Estimated harvest quota for use in the AI allocation under ITACs established from 2003 through 2020

Year	TAC	ITAC	ITAC as % of TAC	CV % of ITAC	CV total A&B Season(mt)	Hindcast ICA for A&B sesaon	5.5% of A&B season directed fishery (mt)	10% of A&B season directed fishery (mt)	% of trawl CV to equal 5,000 mt	mt difference between 5,000mt and 5.5%	mt difference between 5,000mt and 10%
2003	207,500	191,938	92.5%	22.1%	36,056	2,578	1,841	3,348	13.9%	3,159	1,652
2004	215,500	199,338	92.5%	22.1%	37,446	2,592	1,917	3,485	13.4%	3,083	1,515
2005	206,000	190,550	92.5%	22.1%	35,795	3,582	1,772	3,221	14.0%	3,228	1,779
2006	194,000	174,067	89.7%	22.1%	32,698	2,690	1,650	3,001	15.3%	3,350	1,999
2007	170,720	157,916	92.5%	22.1%	29,665	1,194	1,566	2,847	16.9%	3,434	2,153
2008	170,720	152,453	89.3%	22.1%	28,638	1,776	1,477	2,686	17.5%	3,523	2,314
2009	176,540	157,916	89.5%	22.1%	29,665	2,464	1,496	2,720	16.9%	3,504	2,280
2010	168,780	150,975	89.5%	22.1%	28,361	2,296	1,434	2,606	17.6%	3,566	2,394
2011	227,950	203,559	89.3%	22.1%	38,239	2,487	1,966	3,575	13.1%	3,034	1,425
2012	261,000	233,073	89.3%	22.1%	43,783	4,469	2,162	3,931	11.4%	2,838	1,069
2013	260,000	232,180	89.3%	22.1%	43,615	2,745	2,248	4,087	11.5%	2,752	913
2014	253,894	226,727	89.3%	22.1%	42,591	1,388	2,266	4,120	11.7%	2,734	880
2015	249,422	222,734	89.3%	22.1%	41,841	2,330	2,173	3,951	12.0%	2,827	1,049
2016	251,519	224,606	89.3%	22.1%	42,192	2,973	2,157	3,922	11.9%	2,843	1,078
2017	239,399	213,784	89.3%	22.1%	40,159	5,074	1,930	3,509	12.5%	3,070	1,491
2018	203,831	182,021	89.3%	22.1%	34,193	2,862	1,723	3,133	14.6%	3,277	1,867
2019	180,689	161,355	89.3%	22.1%	30,311	3,727	1,462	2,658	16.5%	3,538	2,342
2020	155,595	138,946	89.3%	22.1%	27,400	6,042	1,175	2,136	18.2%	3,825	2,864
Average					35,702	2,959	1,801	3,274	14.0%	3,199	1,726
Std Dev					5,410	966	285	518			

The values have a normal distribution indicating that about 68 percent of the values are within plus or minus one standard deviation of the average (mean) and about 95 percent of the values are within two standard deviations of the average. Based on data from the 2003 through 2020 fisheries, we would expect the harvest quota for use in the AI calculation to fall between 1,231 mt and 2,371 mt under a 5.5 percent allocation and 2,238 mt and 4,310 mt about 95 percent of the time.

Figure 2-14 shows the trawl CV sector apportionment and the resulting harvest quota for use in the AI that would be allocated, based on 5.5 percent or 10 percent of the trawl CV sector apportionment being allocated as harvest quota for use in the AI and all seasons being allocated. If the C-season is not allocated under the PCTC program, the amounts shown in the figure would be reduced by 15 percent to account for the apportionment made to that season.

Figure 2-14 Option 6.2 – 5.5 percent and 10 percent harvest quota for use in the AI allocations by TAC and trawl CV sector apportionment



Harvest quota for use in the AI allocated under this provision is required to be harvested from the AI and landed in the AI management area. However, the annual AI community shore plant allocations may be transferred to any cooperative(s) (and between cooperatives) for harvest by member vessels that are assigned an AI trawl CV LLP license eligible under this program. This means that while to harvest quota for use in the AI is allocated to the AI shoreplant or the community representative, it could decide to lease the CQ to another cooperative and that cooperative’s members could fish the Pacific cod in the AI and deliver the catch to a processor operating in the AI but not an AI shoreplant.

CQ issued under Element 2.2 would not have an AI delivery requirement but could be delivered to an AI shoreplant if the cooperative members agreed to the delivery conditions. NMFS would need to be able to track the harvest quota for use in the AI separately from the CQ issued under Element 2.2. This is necessary to ensure that harvest quota for use in the AI is harvested from the AI and landed in the AI. The tracking would need to be done through the NMFS approval of any transfers outside the AI shoreplant(s) cooperative(s).

Suboption 6.2.3 was added at the December 2020 Council meeting and would establish a percentage (10 percent to 50 percent) of the harvest quota for use in the AI that must be harvested and landed by CVs that are less than 60 feet LOA and are licensed (endorsed) to fish in the federal AI Pacific cod trawl fishery. The LLP license data indicates the only vessels that would qualify for this provision are the eight LLP licenses that are assigned a less than 60 feet LOA transferable AI trawl endorsement, since no LLP licenses with a maximum LOA endorsement of 60 feet qualified under the requirements of the original LLP. The eight transferable endorsements are estimated to be allocated between 0.36 percent and 0.62 percent of the total QS.¹³³ Based on the proposed allocation percentages to the AI shoreplants and the portion of that amount that could be reserved for harvest by vessels less than 60 feet LOA, Table 2-149 was generated to show the difference between their total initial allocation based on catch history during the qualifying periods and the set-aside amount they could be granted exclusive privilege to harvest. The relative amount varies by year and option considered, but only the smallest set-aside amounts would be less than their projected combined initial allocations. The largest AI shoreplant allocation and largest percentage of that allocation set-aside for exclusive harvest by less than 60 feet vessels would be about 14 times greater than their smallest initial allocation eight times greater than their largest initial allocation.

Table 2-149 Estimated less than 60' LOA trawl CV initial allocations compared to set-aside delivery amount

Year	<60' Initial Allocation		AI Shoreplant allocation: 5.5%	<60' CV delivery set-aside			AI Shoreplant allocation: 10%	<60' CV delivery set-aside		
	0.36%	0.62%		10.0%	25.0%	50.0%		10.0%	25.0%	50.0%
2003	152.71	262.99	2,333	233	583	1,167	4,242	424	1,060	2,121
2004	158.59	273.13	2,423	242	606	1,211	4,405	441	1,101	2,203
2005	151.60	261.09	2,316	232	579	1,158	4,211	421	1,053	2,106
2006	138.49	238.51	2,116	212	529	1,058	3,847	385	962	1,923
2007	125.64	216.38	1,919	192	480	960	3,490	349	872	1,745
2008	121.29	208.89	1,853	185	463	927	3,369	337	842	1,685
2009	125.64	216.38	1,919	192	480	960	3,490	349	872	1,745
2010	120.12	206.87	1,835	184	459	918	3,337	334	834	1,668
2011	161.95	278.92	2,474	247	619	1,237	4,499	450	1,125	2,249
2012	185.43	319.36	2,833	283	708	1,417	5,151	515	1,288	2,575
2013	184.72	318.13	2,822	282	706	1,411	5,131	513	1,283	2,566
2014	180.38	310.66	2,756	276	689	1,378	5,011	501	1,253	2,505
2015	177.21	305.19	2,707	271	677	1,354	4,922	492	1,231	2,461
2016	178.70	307.76	2,730	273	683	1,365	4,964	496	1,241	2,482
2017	170.09	292.93	2,599	260	650	1,299	4,725	472	1,181	2,362
2018	144.82	249.41	2,212	221	553	1,106	4,023	402	1,006	2,011
2019	128.37	221.09	1,961	196	490	981	3,566	357	891	1,783
2020	98.64	169.88	1,507	151	377	754	2,740	274	685	1,370
Average	150.24	258.75	2,295	230	574	1,148	4,173	417	1,043	2,087
5,000 mt	n/a	n/a	5,000	500	1,250	2,500	5,000	500	1,250	2,500
Percent of Total	0.36%	0.62%		0.55%	1.38%	2.75%		1.00%	2.50%	5.00%

Specific geographic locations associated with the LLP licenses and the vessel's homeport and owner are provided in Table 2-150. The information reported in the table was derived from publicly available CFEC vessel registration files for 2021 and the 2021 LLP license file reported on the NMFS website. In general, the information shows that the vessel's homeport is concentrated in Sand Point (3), Kodiak (1), and Petersburg (1), Alaska. The three remaining vessel's homeports are reported as Seattle (2) and Bellingham (1), Washington. The CFEC listed vessel owner's addresses are in the states of Washington (6), Tennessee (1), and Hawaii (1). The LLP license holder's states are Washington (6), Alaska (1), and not address reported in the data (1). The one LLP license whose owner is listed as Alaska, has an address associated with a CDQ group. Overall, the data indicates the vessel and LLP license ownership associated with the eight transferable endorsements are primarily concentrated in Washington.

¹³³ See Section 2.8.2.2 for more detail

Table 2-150 LLP license with transferable AI endorsement license and linked vessel by owner address and homeport

LLP License Linked Vessel	CFEC Vessel Homeport		CFEC Vessel Owner		LLP License Holder	
	City	State	City	State	City	State
1	SAND POINT	AK	OROVILLE	WA	OROVILLE	WA
2	KODIAK	AK	COLUMBIA	TN	JUNEAU	AK
3	SAND POINT	AK	BOTHELL	WA	RENTON	WA
4	SAND POINT	AK	SHORELINE	WA	ISSAQUAH	WA
5	PETERSBURG	AK	HOLUALOA	HI	Not Listed	
6	BELLINGHAM	WA	FRIDAY HARBOR	WA	FRIDAY HARBOR	WA
7	SEATTLE	WA	GIG HARBOR	WA	GIG HARBOR	WA
8	SEATTLE	WA	RENTON	WA	RENTON	WA

Source: <https://www.cfec.state.ak.us/plook/#vessels> and <https://www.fisheries.noaa.gov/alaska/commercial-fishing/permits-and-licenses-issued-alaska#license-limitation-program-llp>

The Council considered allocating halibut PSC to the AI shoreplant(s) or the community entity and not crab PSC limits. Crab PSC limits are designed to close areas of the BS when the limit is reached. Because harvest quota for use in the AI must be harvested from the AI, that CQ may not be fished in the BS and no crab caught in the AI will accrue to any PSC limit that is proposed under this program.

AI and BS Harvest

Selecting either Option 6.1 or Option 6.2 could impact the amount of Pacific cod harvested by trawl CVs in the AI. Because any harvest from the AI will be deducted from the total CQ available, it would result in equal reduction in the amount of Pacific cod that would be available for harvest from the BS. Thereby reducing the total catch of Pacific cod by the trawl CVs in the BS. Members of other sectors would then be able to harvest more Pacific cod from the BS before the ITAC is taken in that area.

Elements 6.1 and 6.2 both require that the Pacific cod made available to the AI shoreplant be harvested from the AI. However, Option 6.2 does not create an AI reserve equal to the AI shoreplant allocation to ensure that AI ITAC is not harvested prior the plant taking deliveries of its allocation. If the Council wanted to create a set-aside of the AI ITAC it could be structured like the set-aside under Option 6.1. This would prevent other cooperatives or other sectors from taking the entire AI ITAC and closing directed fishing for Pacific cod before the AI shoreplant CQ is harvested and delivered. Table 2-151 shows that based on the annual ITAC and catch by target fishery, the remainder after deducting the Pacific cod catch in non-Pacific cod target fisheries ranged from 5,021 mt to 10,561 mt. Because the ICA set in the AI varies by year this is a proxy for the DFA.

Table 2-151 AI Pacific cod ITAC and catch of Pacific cod by target fishery, 2014 through 2020

Year	AI ITAC	Pacific cod catch by target fishery (mt)			% non-Pacific cod target	ITAC less non-Pacific cod target
		Non-Pacific cod	Pacific cod	Total		
2014	6,248	1,227	4,442	5,669	22%	5,021
2015	8,414	2,687	5,509	8,196	33%	5,727
2016	11,465	2,832	8,442	11,274	25%	8,633
2017	14,016	4,172	6,540	10,711	39%	9,844
2018	14,016	3,455	9,864	13,319	26%	10,561
2019	12,693	2,777	9,007	11,783	24%	9,916
2020	12,320	2,604	3,751	6,356	41%	9,716

Source: NMFS CAS data and annual Pacific cod ITACs reported

Table 2-152 shows the estimated amount of Pacific cod that would be made available to the AI shoreplant(s) under each of the proposed elements based on 2014 through 2020 data. The information on the right portion of the table shows the amount of the ITAC (mt) that would be available for all other sectors to harvest. Variability of ITACs, catch in non-Pacific cod target fisheries, and the amount available to the AI shoreplant(s) results in either no AI Pacific cod available to other sectors in the A season or an amount that was greater than was harvested in the Pacific cod target fisheries most years.

Table 2-152 AI Pacific cod available to AI shoreplants (mt) and amount available after AI shoreplant allocation and catch in non-Pacific cod target fisheries (mt), 2014 through 2020

Year	Amount available to AI shoreplant				Estimated Available after AI Shoreplant			
	Set-aside under 6.1		Allocation 6.2		Set-aside under 6.1		Allocation 6.2	
	10%	25%	5.5%	10%	10%	25%	5.5%	10%
2014	3,708	9,270	2,756	5,011	1,314	(4,248)	2,266	11
2015	3,643	9,106	2,707	4,922	2,085	(3,379)	3,020	805
2016	3,673	9,183	2,730	4,964	4,960	(550)	5,903	3,669
2017	3,496	8,741	2,599	4,725	6,348	1,104	7,246	5,120
2018	2,977	7,442	2,212	4,023	7,584	3,119	8,348	6,538
2019	2,639	6,597	1,961	3,566	7,278	3,319	7,955	6,351
2020	2,028	5,069	1,507	2,740	7,688	4,647	8,209	6,976

Source: NMFS CAS data and annual Pacific cod ITACs reported

Because the trawl CV sector is allocated 22.1 percent of the combined BS and AI ITACs, any catch they make in the AI will reduce the amount they are allowed to harvest from the BS. This could result in more fishing opportunities available to other sectors that fish in the BS. Using 2020 and 2021 (through July) as an example, limited effort in the AI has resulted in a higher percentage of catch being taken in the BS. In 2021 this could result in the BS being closed to directed Pacific cod fishing before the pot fisheries B season.

2.9.7. Element 7 – Transferability

This section addresses the transferability of the PCTC Program privileges, as required under the MSA. Element 7.1 states that initially issued QS resulting from LLP catch history is non-severable from the LLP license, unless the Council selects the suboption that would create a 90-day window after the publishing of the final rule when BSAI non-exempt AFA vessels would be allowed to transfer QS to reflect sideboard history use agreements. After the 90-day window closes, any LLP license transfers (or AI transferable endorsement transfers) would result in the transfer of all program eligibility and the QS associated with the LLP license. Transfers of QS without the associated LLP license would be prohibited.

Element 7.2 defines the transfer provisions for processor permits that are assigned PCTC harvest allocations. Those permits may only be transferred to another processor. The provision further limits the transfer of processor permits that were initially issued to shorebased processors to other shorebased processors that hold an FPP.

Element 7.3 would allow for annual allocations (CQ) of Pacific cod and PSC to be transferable between cooperatives, regardless of whether they were derived from harvesting or processing history. Element 7.4 would allow post-delivery transfers of CQ between cooperatives prior to December 31. This provision would allow cooperatives to cover any overage before the end of the calendar year without incurring a violation.

The Council’s PA is shown in **bold** below.

Element 7. Transferability

7.1. Initially issued QS are attached to trawl CV LLP licenses and are non-severable from the LLP licenses. Transfer of an LLP license eligible for this program results in the transfer of any program eligibility and QS associated with the LLP license.

Suboption 7.1.1: For the LLP licenses associated with the non-exempt AFA vessels, within ninety (90) days of initial issuance of QS, the owners of the LLP licenses that are associated with AFA non-exempt CVs that had engaged in fish transfer agreements during the qualifying periods and whose QS allocation at initial issuance does not exceed the ownership cap in element 8.1 may transfer the QS between other LLP licenses associated with AFA non-exempt vessels subject to the ownership cap in element 8.1. After these transfers are approved by NMFS, the BSAI Pacific cod QS will no longer be severable from the LLP license to which it was reassigned unless modification is supported by an operation of law.

7.2. QS based on processing history are issued as separate permits, and the permit is only transferable to another processor. Permits issued to shoreside processors can only be transferred to other shoreside processors that hold an FPP. The QS is non-severable from the permit except in the case that transfer of the permit to another eligible processor would result in exceeding the use cap under Option 8.3. In that case, the portion of the QS over the cap is allowed to be severed from the permit and transferred to another eligible processor permit or shoreside processor that holds an FPP.

7.3. Annual Pacific cod CQ and PSC limits (whether derived from harvesting or processing histories) are transferable between cooperatives.

7.4. Post-delivery transfers of CQ are permitted but must be completed by December 31 or August 1¹³⁴.

2.9.7.1. Element 7.1 - Harvester privilege transfers

Option 7.1 restricts the severability of the catch history and resulting QS from LLP groundfish licenses. This restriction is consistent with other catch share programs, like the CGOA Rockfish Program. Allowing persons to sever QS associated with the LLP license would be complicated and expensive to transfer, potentially increasing cost recovery for associated activities by NMFS to approve the transfer applications and programming complex tracking of transfers. The issue of non-severability of catch history and the resulting QS from an LLP license and its impact on consolidation was discussed in Amendment 111 to reauthorize the GOA Rockfish Program (NPFMC, 2020). After the initial allocation of QS to an LLP license the proposed program would make it non-severable. The limitations on transfers of QS separate from the LLP license has limited consolidation since quota shares cannot be stacked on fewer LLP licenses. The non-severability of QS from a license also meant that a person would need to sell the entire LLP license including all of the associated QS. NMFS typically is involved at the cooperative level for transfers. Transfers within a cooperative are managed by the cooperative. Vessels within the cooperative, through contractual agreements, will determine who is allowed to harvest the allocation NMFS makes to the cooperatives. The contracts signed by individual cooperative members specify the penalties individuals would be subject to if they exceed their harvest limit. NMFS will only be concerned with whether the cooperative exceeds its allocation. If the cooperative exceeds its harvest limit, NMFS will notify the enforcement agency and/or impose penalties on the cooperative.

Eligible LLP license holders would be permitted to transfer the LLP license and all its endorsements and assigned QS to any person eligible to hold an LLP groundfish license.¹³⁵ The transfer would include any

¹³⁴ The Council added August 1 as its preferred alternative to align with the Council's preferred alternative to allocate only A and B season BSAI trawl CV Pacific cod (Element 2.5).

¹³⁵ Only a U.S. Citizen or U.S. corporation, partnership, association, or other non-individual entity are eligible to hold an LLP license.

privilege to participate in the PCTC program and any other privilege that is associated with or arises from holding the license. The interest in the PCTC that is derived from the license is not severable from the license, or divisible (except for BSAI non-exempt AFA vessels for 90-days if that option is selected). Any transfers of annual CQ allocations would be temporary transfers of that single year's allocation.

Transfers of LLP licenses are approved by NMFS, may only happen once per year, and typically occur when the LLP licenses are not actively fishing. The primary reasons to use LLP license transfers are to remove or add a vessel to the LLP license, to change the ownership of an LLP license, or an operation of law, such as a court order.

As stated earlier, NMFS approves transfers of QS when LLP licenses or processor permits are sold and when CQ transfers between cooperatives. Inter-cooperative CQ transfers are the annual temporary transfer of a fishing privilege and would be allowed as part of the cooperative provisions proposed by the Council based on its intent for transfer flexibility. Transfers of harvest shares would not be approved if the transfer would result in a person exceeding any ownership or use caps established under Element 8 or the limit of a person holding more than 10 LLP groundfish licenses.

CQ issued to a cooperative by NMFS would be based on the LLP licenses assigned to the cooperative on an annual basis. An LLP license holder would be allowed to change cooperatives annually. Once CQ is assigned to a cooperative, NMFS would monitor and approve transfers to other cooperative(s) to accurately account for a cooperative's harvest in a given year.

Ownership and use caps would limit any trawl CV from catching more than a specified percentage of the Pacific cod allocation to the sector and thereby limit the amount of a cooperative's CQ that the cooperative could assign to any vessel. No cooperative would be permitted to hold or use in excess of a defined percentage of the trawl CVs sector's allocation, while no entity would be permitted to hold or use in excess of a defined percentage of the trawl CV sector's allocation. This cap would be applied to limit the number of shares that a person could bring to a cooperative, either through holding an LLP license or through inter-cooperative leasing.

Suboption 7.1.1 – Transfer of quota shares

This option would allow owners of LLP licenses associated with the non-exempt AFA vessels that had engaged in fish transfer agreements during the qualifying period to transfer some or all the QS assigned to an LLP license to a different LLP license within 90-days of initial issuance of harvest quota shares. The suboption notes that after these transfers are approved by NMFS, the BSAI Pacific cod QS would no longer be severable from the LLP license to which it was reassigned. In October 2021, the Council added language to accommodate transfers of QS between other LLP licenses associated with AFA non-exempt vessels beyond the 90-day windows if supported by an operation of law. The Council's intent of the new language is to allow transfers of QS that utilize legal channels to resolve transfer disputes, which can easily exceed the 90-day limit, to be completed after the 90-day limit for transfers of initial issuance of QS has passed.

This suboption to allow a one-time transfer option is distinct from the statutory requirement to provide for an administrative appeals process which is described in Section 2.10.7. To prevent this provision from being applied beyond the Council's original intent of accommodating private transfer agreements of BSAI AFA non-exempt Pacific cod sideboard limits. Holders of qualified LLP licenses with QS cannot transfer QS from other qualified LLP licenses beyond the ownership cap selected in Element 8.1. To accommodate this, the grandfather provision associated with the ownership cap would apply at the time of initial issuance of QS. In other words, transfers of QS between LLP licenses during the 90-day period must be within the maximum limit established for the ownership cap selected in Element 8.1. Holders of LLP licenses can transfer QS from a qualified LLP license with QS to another LLP license assigned to a non-exempt AFA vessels with a BS and or AI trawl endorsement up to but not over the ownership cap selected in Element 8.1. If the grandfather provision (Option 8.1.1) is selected, persons over the cap at the

time initial issuance of QS cannot acquire any more QS during the 90-day transfer process unless they transfer sufficient QS to fall below the ownership cap at which point they can only acquire QS up to the ownership cap but not over the cap.

To facilitate the transfer of QS amongst LLP licenses that authorized non-exempt AFA trawl CVs, NMFS would develop a process to approve the transfer applications associated with suboption 7.1.1. After initial PCTC QS are assigned to qualified LLP licenses, a transfer application could be submitted by the owner of an LLP license that at any time during the qualifying period associated with a non-exempt AFA trawl CV to identify the amount of QS to be transferred. This subgroup of LLP license holders could submit a one-time application to transfer a specific amount of QS between LLP licenses (the one initially qualified to receive QS and the one that will receive the transferred QS) NMFS would develop the necessary transfer application forms to implement the Council's policy recommendation. After a transfer has been completed or the 90-day window has elapsed, QS would be non-severable from the LLP license. Because these one-time transfers could only be processed or approved during a specific 90-day window, the exact timing of when this window begins would need to occur after the establishment of initial allocations to qualified LLPs. Only after initial allocation are issued, would the owner of a qualified LLP know the exact amount of QS that would be issued to their license and from which would be the starting point for private negotiations with other LLP holders with whom the LLP owner may have had private contractual agreements during the qualifying period. The following describes how NMFS would implement this provision relative to the initial allocation determinations.

- NMFS determines allocations and sends out Initial Administrative Determinations (IADs) informing LLP holders after the final rule.
- LLP holders would have 90 days to submit an application to transfer QS.
- Within 90 days, a transfer application would be submitted to NMFS specifying the amount of QS to be transferred permanently from one LLP to another LLP. NMFS would process that application and the QS transfer would be complete.
- After 90 days, this flexibility would lapse and QS would be permanently attached to the LLP to which it was assigned.

The Council recommendation is to have any private disputes resolved within 90 days of IAD issuance. NMFS would not be involved in private disputes and would only receive and process the one-time transfer application after any disputes are resolved. After 90 days, NMFS would permanently assign QS to the LLP license to which it was originally assigned.

One limitation of the 90-day window for addressing transferring QS between LLP licenses is that it does not account for a dispute resolution process where parties of private transfer agreements of BSAI AFA trawl CV Pacific cod sideboards are unable to agree on how to reallocate the QS among the parties' LLP licenses. Without a dispute resolution mechanism, parties to the transfer agreement may not have time necessary for dispute resolution via a civil suit or other dispute resolution processes that cannot be completed within the 90-day window. To accommodate a dispute resolution process, the Council added language to allow the modification of initial QS allocations if it is supported by an operation of law.

2.9.7.2. Element 7.2 - Processor Privilege Transfers

Element 7.2 creates a new permit for processors to which the processor allocations of harvest shares, based on processing history, would be issued. Like under Element 7.1, two types of transfers are considered. The first is transfers of the processor permit and QS that is assigned to the processor permit. These permits would only be allowed to be held by processors, meaning that they could not be held by harvesters, communities, or non-government organizations. This is consistent with the Council's intent to consider issuing processor quota to help maintain a balance of market power between the harvesters and processors under the cooperative structure. The second type of transfer is the transfer of annual CQ derived from the QS units that are held. CQ would be issued to the cooperative the processor is associated

with and vessels within the cooperative would harvest the CQ and deliver the Pacific cod to the processor holding the QS or a different processor. Transfer of CQ would allow the cooperatives to operate more efficiently by allowing the cooperatives to address issues that may arise inseason. For example, vessel breakdowns/shutdowns (especially in small cooperatives with few vessels), processor breakdowns/shutdowns, or transferring small amounts of CQ at the end of a fishing year or season.

NMFS has issued permits to inshore processors in the past, including AFA permits through a one-time application. It is assumed that a similar structure would be used to create the permits that may be assigned processor privileges in the PCTC Program. NMFS would issue to a processor a harvest share permit upon receipt and approval of a completed application. That permit would be assigned to the processor and have harvesting QS units attached to the permit based on the qualifying processing history of the applicant. Once the processing QS is assigned to the permit, the QS would be non-severable (except in the case when the transfer would place the buyer over the ownership cap), as it is for the harvesting sector allocation of QS attached to LLP licenses. The permit could be transferred with attached QS, if the buyer meets the criteria established by the Council to hold that permit. On an annual basis, the holder of the permit would be issued CQ that could be transferred to a CV operator within a cooperative. The CV could be affiliated, through ownership linkages, with the processing plant. However, CVs owned or controlled by the processor may not be allowed to harvest more of the cooperative allocation than the amount of CQ they brought into the cooperative based on the QS assigned to their LLP license. The permit would be subject to holding and use caps discussed in Element 8.

The new PCTC processor permits would only be transferrable to other processors. A stricter transfer limitation would be placed on processor permits initially assigned to shoreside processors¹³⁶ that hold an FPP.¹³⁷ These processor permits could only be transferred to other processors that hold an FPP, meaning that they could not be transferred to C/Ps acting as a mothership or other processing vessels that operate in Federal waters (e.g., motherships). The intent of this provision is if the QS is severed from a processor permit due to the buyer exceeding the ownership cap, any QS severed from the processor permit must be assigned to a shoreside processor with an FPP.

The provision does not include any requirement that the processor buying the permit intends to operate in the BSAI or has any history processing trawl CV caught Pacific cod from the BSAI. If the Council wanted to ensure that this QS was held and processed by shoreplants that have the capability to process trawl caught Pacific cod, it could consider requiring that the permit is held by a shoreside processor that has the capacity to process deliveries of Pacific cod from trawl CVs. Requiring that a processor has the capacity to process trawl deliveries of Pacific cod is not intended to create a closed class of processors, but instead is intended to ensure that processing quota is held by person with the intent to process Pacific cod as intended by the Council. As an example, that could mean the ability to process deliveries of 150,000 lbs. (68 mt) of Pacific cod.¹³⁸ The provision goes on to state that QS assigned to a processor permit is not severable, except when the transfer of the permit would result in the buyer being over the owner/use caps that are established for processor issued harvest shares. In that case, QS over the cap could be transferred to another eligible processor permit. Transferring the QS over the ownership/use limit to another eligible processor permit would not increase the total number of processor permits that were initially issued. QS would just be divided among existing permits. Processors currently holding a

¹³⁶ As defined at 50 CFR 679.2, shoreside processor means any person or vessel that receives, purchases, or arranges to purchase, unprocessed groundfish, except catcher/processors, motherships, buying stations, tender vessels, restaurants, or persons receiving groundfish for personal consumption or bait.

¹³⁷ An FPP permit is required for stationary floating processors (processing vessels that operate solely within Alaska State waters) and shoreside processors that receive and/or process groundfish harvested from Federal waters (or from any Federally-permitted vessels).

¹³⁸ The 150,000 lb. amount was used as an example because it has been discussed as the approximate amount of Pacific cod that trawl CVs, with the least capacity, can deliver on a trip. Trip limits established for the GOA Pacific cod fisheries are 300,000 lbs. and some GHF fishery trip limits are 250,000 lbs. and are designed to help protect operators of vessels with less delivery capacity than other members of the fleet.

permit that was assigned at the time of initial allocation, would be the only persons eligible to hold processor issued harvest shares severed from another processor permit.

2.9.7.3. Element 7.3 - Pacific cod and PSC CQ are transferable between cooperatives

This provision would allow the transfer of PCTC Program Pacific cod and PSC CQ between cooperatives that received an annual allocation of Pacific cod CQ. Cooperatives would be permitted to engage in the temporary transfer of CQ. Transfers of this nature would be for a single year's annual allocation. The underlying QS remains with the LLP license. NMFS does not approve transfers between persons within a cooperative that take place during the fishing year. These transfers are controlled through the cooperative. NMFS will review catch and transfer data to ensure the cooperative did not harvest more than their final allocation. Catch data will also be reviewed to determine if vessels fishing within the cooperative exceed their use caps.

There is no minimum number of LLP licenses required to form a cooperative under Element 1. This is consistent with the Rockfish Program. To encourage cooperative formation, the Rockfish Program regulations were relaxed relative to those established under the Rockfish Pilot Program. The minimum number of LLP licenses with affixed rockfish QS required to form a cooperative was eliminated. However, CGOA Rockfish program limited in-season CQ transfers to a cooperative with a minimum of two LLP licenses. These changes were implemented to encourage cooperative formation by providing greater flexibility to transfer CQ to meet operational demands. The PCTC would not require that a cooperative have at least two LLP licenses to receive transfers of CQ.

As described earlier in this section, NMFS would need to approve any inter-cooperative transfers. Intra-cooperative transfers by members of a cooperative would be managed by the cooperative through civil contracts. To monitor use caps, inter-cooperative transfers of CQ would need to be conducted through individuals. Persons receiving an initial allocation in excess of the use cap would be grandfathered at the level of the allocation, if the Council selects that option. They would not be allowed to acquire additional CQ through inter-cooperative transfers.

2.9.7.4. Element 7.4 - Post-Delivery Transfers

Like the CGOA Rockfish Program (NPFMC 2011), Element 7.4 would include a provision that permits post-delivery transfers of CQ that must be completed prior to the annual CQ expiring. If this option is not included, all overages are subject to an enforcement action and penalty when they occur. Enforcement actions and penalties are at the discretion of NMFS Office of Law Enforcement. Since the program has not been implemented, it is difficult to predict the extent to which participants will exceed their allocations of Pacific cod or PSC species. As each cooperative approaches its allocation limit, it is increasingly likely that some overage could occur.

End of cooperative fishing may drive consolidation of remaining Pacific cod allocations, in part, by the requirement that a vessel not begin a fishing trip without unharvested CQ of all species allocated under the program. Allocations will likely be consolidated in one or two cooperatives with harvesters in those cooperatives making 'sweep up' trips, to complete the season's harvests. Although consolidation of allocations in one or two cooperatives can be used to avoid overages, it is anticipated that unintentional small overages may occur.

Based on the option, there would be no limits on the number or magnitude of post-delivery transfers. No cooperative vessel under this catch share program would be permitted to begin a fishing trip unless the cooperative holds unused cooperative quota that could be made available to the vessel in the event they need it. This restriction prevents a cooperative from not having enough quota at the end of the season. The intent of this provision is to improve cooperative flexibility, reduce potential violations from overages, reduce enforcement costs, and allow more complete harvests of the cooperative's allocation. The transfer would need to be completed by December 31 or August 1 if only A and B seasons are rationalized, prior to the cooperative quota expiring for the year.

Despite the absence of limits on post-delivery transfers, the provision is likely to be used in a limited way. Participants are only likely to rely on the provision for unintended small overages. Analysts do not have data for overages because the existing fishery is not currently allocated quota. In the CGOA Rockfish Program, this provision is used if an overage occurred. Overages not covered with a transfer and, thus, subject to penalty, should be fewer. Finally, requiring the overage to be covered on or before December 31 of the year in which the overage occurred could lead the cooperative to unreasonably delay finding shares to cover the overage, which could result in some uncovered overages. On the other hand, the potential cost of cooperative overage penalties is likely to deter most vessels from delaying coverage of an overage. Delay in obtaining a post-delivery transfer needed to cover an overage until shares are unavailable for that transaction is unlikely to be a persistent problem.

If no post-delivery transfers are permitted, cooperatives that have an overage at the time of landing cannot make a transfer to cover that overage. Processors are generally unaffected by this provision since the overage charged to the cooperative will not affect the processor's operations. Minor changes in the enforcement burdens are expected if the provision is not implemented, as a few overages are likely to occur unless cooperatives are very conservative in their harvest strategies.

Based on an expectation that limited overages would occur and the likelihood that this provision would provide additional opportunities for cooperatives to settle their quota accounts after a landing, it will reduce the risk of enforcement actions that result from overages. The option would establish a flexible system of post-delivery transfers to cover overages. Limits on the amount and number of transfers are based on the amount of unused CQ that a cooperative holds. However, the cooperatives are likely to rely on the provision for unintended small overages. In most cases, these transfers could be prearranged through an inter-cooperative agreement. Overages not covered with a transfer by December 31 are subject to penalty. However, the post-delivery transfer option should reduce the number of penalties. The development of an inter-cooperative agreement is expected to contribute to relatively stable and predictable price for post-delivery transfers. Although, based on the existing inter-cooperative agreements, punitive lease rates may apply to large overages. Lease rates for minor, infrequent overages are likely to be at a reduced rate.

Processors are likely to participate in the negotiation of these prearranged transfers. A processor is unlikely to approve a transfer that it views as significant and adverse, in the absence of compensation. This negotiating power is expected to be higher if they are allocated CQ that is designated to be fished in a cooperative. Although this processor involvement is likely to complicate transactions for harvesters, the need for processor consent will ensure that transfers are not detrimental to processors. In existing catch share programs, a cooperative manager is responsible for arranging these transfers.

The increase in administrative and record keeping requirements to address post-delivery transfers is likely to be small. Yet, changes in the timing of administrative decisions and processes may pose challenges. In general, NMFS will oversee CQ accounts and usage, maintaining a record of any overage. Instead of referring overages to NMFS OLE immediately, that notice would be deferred until after December 31. The burden of these notices is expected to be minor. Overall, allowing post-delivery transfers should reduce the number of enforcement actions prosecuting overages.

A minor overall net benefit to the Nation is likely to arise from this element. The element is likely to reduce the number of overages, by allowing participants to use post-delivery transfers to balance catch quota accounts. The risk of increasing the magnitude of any overage is also limited, since enforcement actions and the associated penalties are expected to deter overharvest of allocations. The action has the potential to reduce administrative and enforcement costs, by reducing the number of enforcement actions for overages.

It is unclear what the post-delivery implications will be for the C season if the C season remains as a limited access fishery. In theory, PCTC Program participants could keep the overage penalties small and intentionally fish over their QS and catch the C season allocation which could have impacts on two

fisheries outside of this PCTC Program. First, any potential C season Pacific cod TAC reallocations to other sectors, including the under 60 sectors, could see a reduction due to intentional overages. Second, the limited access C season could see a reduction in allocation due to the intentional overages from these cooperatives.

2.9.8. Element 8 – Ownership and Use Caps

The Council's PA is shown in **bold** below.

8.1. Harvester-issued QS. Processor-issued QS does not count toward this use cap. No person may hold or use more than option: 5%- 10% of the Pacific cod QS issued:

Option 8.1.1: using the individual and collective rule or

Option 8.1.2: using 10% ownership threshold or management and control for assigning QS to a holder's/entity's cap.

Suboption 8.1: Persons over the cap at the time of QS issuance are grandfathered.

8.2. No vessel may harvest more than option: 3%; 4%; 5% of the annual Pacific cod CQ issued in the fishery.

Option 8.2.1: Vessels over the cap at the time of QS issuance are grandfathered. The grandfather provision is applied to the vessel designated on an LLP license that yields more than 5% of the annual Pacific cod CQ at the time of initial allocation. This grandfather provision is not transferrable if the LLP license is transferred to a new owner.

8.3. Processor-issued QS¹³⁹: No person may hold or use more than option: 15% - 20% of the Pacific cod QS:

Option 8.3.1: using the individual and collective rule or

Option 8.3.2: using 10% ownership threshold or management and control for assigning QS to a holder's/entity's cap.

Suboption 8.3: Persons over the cap at the time of QS issuance are grandfathered.

8.4. No company may process more than 20%-30% of the Pacific cod CQ.

Option 8.4.1: using the individual and collective rule

Option 8.4.2: Company over the cap at the time of QS issuance are grandfathered.

Element 8 defines ownership and use caps. The Council included options for ownership and use caps (5% -10%) for harvester-issued (Element 8.1) and processor-issued cooperative shares (15% - 20%) (Element 8.3), vessel use caps (3% - 5%) (Element 8.2), and a plant level processing cap (20% - 30%) (Element 8.4). The Council included options to grandfather persons over the harvester-issued and processor-issued use caps, vessel use caps, and processing cap.

As required for any LAPP, this cooperative program includes options to establish maximum shares for participants to prevent any person from acquiring excessive shares in the PCTC Program. For the CV harvest sector, options limit QS holdings, CQ use, and vessel CQ use. For processors, options limit harvest shares holdings and processing activity. Restricting the percentage of QS that an entity can own is required element of a LAPP. Though the definition of excessive share is fact-specific and varies between

¹³⁹This cap refers to any QS initially issued to processors on a processor permit under Element 5.3.

fisheries, the focus is normally on preventing any entity from obtaining monopoly power and the attainment of management objectives or equity goals (Anderson 2008).

Ownership and use caps are typically implemented to prevent a person, vessel or processing facility from harvesting, processing, or controlling an excessive amount of the LAPP shares. Ownership and use caps under Element 8 would be imposed to limit consolidation of both harvesters and processors in the BSAI trawl CV sector. In development of previous catch share programs, the Council tried to balance the goals of improving economic efficiency, maintaining employment opportunities for crew, and providing financially affordable access opportunities for new participants. The Council could consider specific goals and objectives they would like to achieve in development of the PCTC Program, including encouraging economic efficiencies. This action could incentivize the use of CQ on fewer vessels, fewer processing plants, and the consolidation of ownership. Given the potential for consolidation of harvesting and processing privileges, all LAPPs must include provisions to prevent anyone from acquiring excessive shares as the program matures.

Section 303A(c)(5)(D) of the MSA requires that the Council must prevent excessive consolidation in the harvesting and processing sectors to ensure that LAPP permit holders do not acquire an excessive share of the total limited access privileges in the program by:

1. Establishing a maximum share, expressed as a percentage of the total limited access privileges, that a limited access privilege holder is permitted to hold, acquire, or use; and
2. Establishing any other limitations or measures necessary to prevent an inequitable concentration of limited access privileges.

The Council should consider what is an excessive share of the limited access privileges for the PCTC program and articulate a rationale for how its ownership and use caps will prevent any person from acquiring an excessive share of limited access privileges. In assessing the caps, the participation patterns of LLP license holders, vessels, and processors should be kept in mind. Participants have historically participated in several different fisheries throughout the year. Consolidation could have benefits, allowing greater specialization, improving production techniques, quality of landings, and potentially reducing bycatch and PSC.

Under the rules creating caps on share use and holdings, no person could hold LLP licenses or processor permits that, collectively, or within their own class, have associated shares in excess of the specific threshold. Persons would also be prohibited from acquiring additional CQ arising from shares in excess of the threshold. Vessel and processing caps are interpreted similarly, such that no vessel/processor can harvest/process BSAI Pacific cod derived from shares in excess of the threshold.

Individual ownership and use caps for both CVs and processors may be calculated using either the “individual and collective rule” or the “10 percent ownership threshold rule.” The “individual and collective rule” defines how much of the sector’s catch history a person may use or hold is calculated. For example, persons that own 100 percent of an eligible LLP license or processing permit would be assigned 100 percent of the QS assigned to that LLP license towards their ownership cap. If they hold 50 percent of the license, they are credited with holding 50 percent of the QS assigned to that license. The “10 percent ownership threshold rule” states that when a person owns or controls 10 percent or more of another entity, all the quota owned by those entities is counted against their caps. For example, if an entity owns 20 percent of another firm, 100 percent of the quota owned by the two firms is counted against their caps. Once the person is assigned an amount of quota equal to the maximum shares cap, that person would not be allowed to acquire any additional amount of the sector’s allocation.

Individual, vessel, and processing caps may include an option to grandfather any individual, vessel, or processor respectively that historically exceeded the cap. Such a provision would allow all individuals, vessels, and processors to maintain activity at the level of their initial allocations. Persons, vessels, and processor facilities over the cap at the initial allocation would not be allowed to acquire additional harvest

shares, unless they divest of their initial allocation to a point at which they fell below the use cap. At that time, they would be permitted to acquire harvest privileges, until they reached the maximum share cap. If the option to grandfather allocations above the maximum share cap is not adopted, individuals who would receive initial allocations greater than the cap would not be allocated the portion over the cap. In that case, LLP license holders or processor permit holders QS would be allocated to persons under the cap in proportion to their qualifying history. Since vessels do not receive allocations, in the absence of a grandfather clause, all vessels (including any vessel that historically harvested in excess of the cap) would be prohibited from harvesting over the cap in the future. A vessel cap grandfather provision could be implemented by applying the grandfather to the license. So, any vessel using a license that received in allocation in excess of the cap would be permitted to harvest an amount up to the allocation derived from the LLP license.

Several factors could be used to assess whether maximum share caps on share-holdings and use will serve the objective of the Council. The number of participants that would remain in the sector if all participants buy or lease shares up to the cap would illustrate the potential limit on concentration of shares. The number of historical participants in the fisheries receiving allocations provides some indication of the number of participants that these fisheries may support and some, albeit crude, insight into whether the cap is consistent with past participation levels. Also, since allocations would reflect historical participation, the number of persons that would receive allocations at or above the cap provides some insight into whether the cap is consistent with historical participation. However, it is understood that a qualification period that covers multiple years will likely allow more LLP licenses, vessels, and processors to qualify to participate than have ever participated in a single year.

The analysis below is intended to provide the Council with a discussion of the options under consideration, and available data that might form the basis for a decision of acceptable ownership and use caps. The information is based on caps selected for other catch share programs in the North Pacific and CAS data used for this proposed amendment.

Table 2-153 provides an overview of existing catch share programs and their ownership and use caps. Each of these programs varies in the number of participants, most relevant program objectives, and monitoring of accumulation.

Table 2-153 Ownership and use caps by catch share program

	Program goals most relevant maximum share provisions	Cap on individual share-holdings/use	Cooperative, “sector,” or vessel, or entity share cap	Processing share cap	Grandfather clause	Monitoring accumulation limit compliance
IFQ Halibut and Sablefish	<ul style="list-style-type: none"> - Maintain fleet profile and historical business practices. - Limit consolidation to prevent excessive share accumulation and limit economic displacement. - Provide real-time data to support monitoring and compliance, resource assessment and industry self-management. 	<ul style="list-style-type: none"> - No one can hold more than 0.5% to 1.5% of halibut or sablefish shares in combinations of areas. - Ownership, not control based, evaluated using “individual and collective” calculation. - Block caps limit the number of indivisible groups of units (by species, area). Max is 3 halibut, 2 sablefish blocks if no unblocked is held. 	<ul style="list-style-type: none"> - Entity caps on QS holdings. - Percent of TAC caps for annual vessels landings. 	N/A (no processing shares in this fishery).	Yes	<ul style="list-style-type: none"> - NMFS approves all transfers, subject to holdership limits. - QS-holding entities must annually disclose ownership/membership to support cap computations. <p>Vessel caps monitored in a real time/at time of landing</p>
AFA Pollock	To limit the degree of consolidation that could occur.	17.5%	Excessive harvesting share limit more than 17.5% of the pollock directed fishery allocations.	30% cap on processing shares.	N/A	<ul style="list-style-type: none"> - Vessel owners required to submit information on quota holdings annually. - Cooperatives distribute allocations among member vessels and oversee individual vessel harvests with contractually defined and privately administered penalties for violations of the cooperative agreement.
BSAI Crab		1 to 10% cap varies by fishery	<ul style="list-style-type: none"> - No cap for harvest share holdings by cooperatives. - 2 to 20% vessel use cap if operating outside of a cooperative (varies by fishery). 	30% cap on processing shares by fishery at the firm level	Yes	Quota share holders/ owners required to submit information on quota holdings annually.

	Program goals most relevant maximum share provisions	Cap on individual share-holdings/use	Cooperative, "sector," or vessel, or entity share cap	Processing share cap	Grandfather clause	Monitoring accumulation limit compliance
Amendment 80	Moderate potential adverse effects of consolidation of fishing operations on participants (loss of crew employment), while recognizing economic efficiencies to Amendment 80 QS holders.	A person may not individually or collectively hold or use more than 30% of the aggregate Amendment 80 QS units initially assigned to the Amendment 80 sector and resulting CQ.	-No cap for cooperatives -An Amendment 80 vessel may not be used to catch an amount of species greater than 20% of the aggregate Amendment 80 sector's species ITACs.	N/A	Yes	QS holders required to submit information on quota holdings annually.
CGOA Rockfish	To limit the degree of consolidation that could occur in the Central GOA rockfish fisheries.	For primary species a person cannot hold or use 4% of the QS assigned to the CV sector or 40% of the QS assigned to the C/P sector.	For primary species: 30% of QS assigned to CV sector for CV cooperatives, 8% CV sector CQ, 60% C/P sector CQ.	For primary species, Pacific cod, and sablefish separately 30% CV sector CQ for processors.	Yes	QS holders required to submit information on quota holdings annually.

In the CGOA Rockfish Program, which has similar elements to the proposed PCTC Program, caps apply to CVs, catcher/processors, cooperatives, and processors. Use caps apply to CQ issued to cooperatives. Ownership and control caps apply to quota issued to LLP licenses and the owners of the LLP licenses. Processor caps limit the amount of CQ a processor may accept. In addition, the CGOA Rockfish Program included a grandfather provision that allowed persons whose initial allocation of QS and resulting CQ that was in excess of the use caps to retain that amount. A CGOA Rockfish harvester may not hold more than 4 percent of the aggregate rockfish primary species assigned to the CV sector. A CV may not harvest more than 8 percent of the quota of rockfish primary species during a calendar year. A CGOA Rockfish Program processor may not receive or process more than 30 percent of the quota allocated to the CV sector. Catcher vessel rockfish cooperatives are limited to not using more than 30 percent of the quota allocated to the CV sector. This cap is slightly larger than the greatest potential allocation to a single cooperative, so historically, no group of vessels that could enter into a cooperative could have harvested in excess of the cap, and no processor has historically processed in excess of the cap amount. The CGOA Rockfish Program cooperative use cap limits the degree of consolidation of fishing harvests by any one cooperative through the leasing of annual harvest privilege among cooperatives. The extent to which the cap prevents consolidation under the limited processor entry alternative prevents consolidation to an extent that no fewer than four cooperatives would exist and fish allocations under the program, or no fewer than four processors would participate in the fishery. Six processors had adequate processing to qualify for the CGOA Rockfish Program.

In other catch share programs, NMFS requires cooperatives to submit information through an annual cooperative application, which is required prior to receiving their annual allocation of cooperative quota. NMFS receives the annual cooperative applications in addition to cooperative transfer requests and

annual catch reports. NMFS uses the information in these forms to enforce and track use cap provisions. The use caps determined by the Council in most of the catch share programs in the North Pacific are programmed into the permit application database. If cooperative members attempt to go over the cap, there is an error message flagging that the cooperative member is over their allowed use cap prior to NMFS issuing their quota. This flag would allow the cooperative to adjust their holding or use to remain under the holding or use cap.

Due to limited company ownership data, it is not possible to determine all ownership affiliations for this action beyond looking for companies with the same name and address. Instead, the Council and NMFS can monitor ownership affiliation annually through the information required in the annual cooperative application. The Council would need to provide rationale on why they are requesting the level of detail from LLP license ownership. Elaborate holding and use caps in the regulations may not accurately reflect NMFS's ability to enforce or track owner affiliations. NMFS is reliant on the information that supplements the cooperative applications and has limited resources for verifying these relationships.

2.9.8.1. Element 8.1 – Harvester-issued Cooperative Shares

Under Element 8.1, a person could not hold or use more than a maximum percentage of the QS/CQ issued. The Council is considering a maximum range from 5 percent to 10 percent of the total QS/CQ allocated. The suboption to 8.1 indicates that if at the time of initial allocation, the person held more than the percentage set by the Council they would be grandfathered. In other words, it is assumed that selecting the suboption under Element 8.1 would limit persons from acquiring any more quota if they are over the cap at the time of initial allocation, but they would be allowed to hold and use all the QS they are initially issued. In this option, the person receiving the initial allocation would be grandfathered in over the cap, but the cap would prevent the LLP license owner from purchasing or leasing quota after the initial allocation if they are above the ownership cap. Any grandfather provision only applies to the initial recipient and cannot be transferred to a different owner. If the suboption is not selected a person would only be issued QS up to the ownership/use cap. The remaining catch history above the cap would be removed from the QS pool. That history would not be allocated since there is no provision to sever a portion of the QS/catch history from an LLP license.

To determine the specified percentage for the ownership/use cap, the Council considered past harvesting patterns associated with each LLP license. The number of participants in the fishery over the years provides some indication of the number of participants that the fishery supports, and it provides insight into whether the caps are consistent with past participation levels.

To generate past harvest information, targeted BSAI Pacific cod catch by LLP licenses was aggregated for qualifying catch history years under Option 2.2.1, Option 2.2.2, Option 2.2.3 (described in Section 2.9.2 under Element 2) in Table 2-154. Since information is not available showing the percentage of ownership of any LLP license by person, LLP license holder addresses were used in the table as the best available proxy for affiliation to understand existing ownership, with the caveat that not all LLP licenses are filed using the same address. In other words, some LLP licenses would be centrally managed by one company and other LLP licenses would be managed separately, which means that LLP license owners may be undercounted or overcounted. Even though Options 2.2.1 through 2.2.3 vary slightly, the average between the three options is a reasonable proxy for estimating the number of LLP license holders that would be allocated quota initially under this action. Options 2.2.1 through 2.2.3 are similar enough to provide information for the Council to develop holdings and use caps.

To understand Table 2-154, consider the caps for Option 2.2.1. The top five average LLP license holders caught 8.8 percent of the total BSAI Pacific cod catch. If the holding and use cap was set at 5 percent, 37 LLP license holders would be subject to the selected cap (not grandfathered) and 6 would be over the cap and grandfathered at their initial allocation or required to forfeit some of their catch history. If the holding and use cap was set at 10% or greater, all 43 LLP license holders would be subject to the established cap, and no grandfather provision would be necessary. Setting a cap this high provides a greater ability of

transferring CQ within a cooperative compared to a lower cap, but it also provides a greater opportunity for cooperatives to shift fishing effort amongst the cooperative’s vessels to increase specialization of Pacific cod relative to other groundfish fisheries. If the holding and use cap was set at 1%, only 19 LLP license holders would be subject to the initial caps and 24 LLP holders would be grandfathered at their initial allocation. Setting a cap at such a low level would inhibit the transfer of CQ between cooperatives, since many of the individuals within the cooperative would not be allowed to participate in those transfers. That limitation would reduce benefits of the cooperative structure related to the movement of quota to efficiently harvest the annual allocations. This highlights the balance that must be struck between setting a cap too high and allowing excessive consolidation and setting the cap too low and limiting the benefits of the cooperative structure more than necessary to achieve the Council’s goals and objectives for the program.

Table 2-154 LLP license holders not grandfathered and grandfathered under Element 2.2, Options 2.2.1 through 2.2.3

Percent of BSAI Pacific cod catch	Option 2.2.1		Option 2.2.2		Option 2.2.3	
	Sum of LLP license holders not grandfathered	Sum of LLP license holders grandfathered	Sum of LLP license holders not grandfathered	Sum of LLP license holders grandfathered	Sum of LLP license holders not grandfathered	Sum of LLP license holders grandfathered
0-1%	19	24	21	25	25	25
1-2%	28	15	32	14	34	16
2-3%	32	11	35	11	39	11
3-4%	36	7	40	6	44	6
4-5%	37	6	40	6	44	6
5-6%	39	4	41	5	45	5
6-7%	39	4	42	4	46	4
7-8%	40	3	43	3	46	4
8-9%	40	3	44	2	48	2
9-10%	41	2	44	2	48	2
10-11%	43	0	45	1	49	1
11-12%	43	0	46	0	50	0

Source: AKFIN, Feb 2020; Source file is BSAI_PCOD_LAPP_Option2(2-20-20)

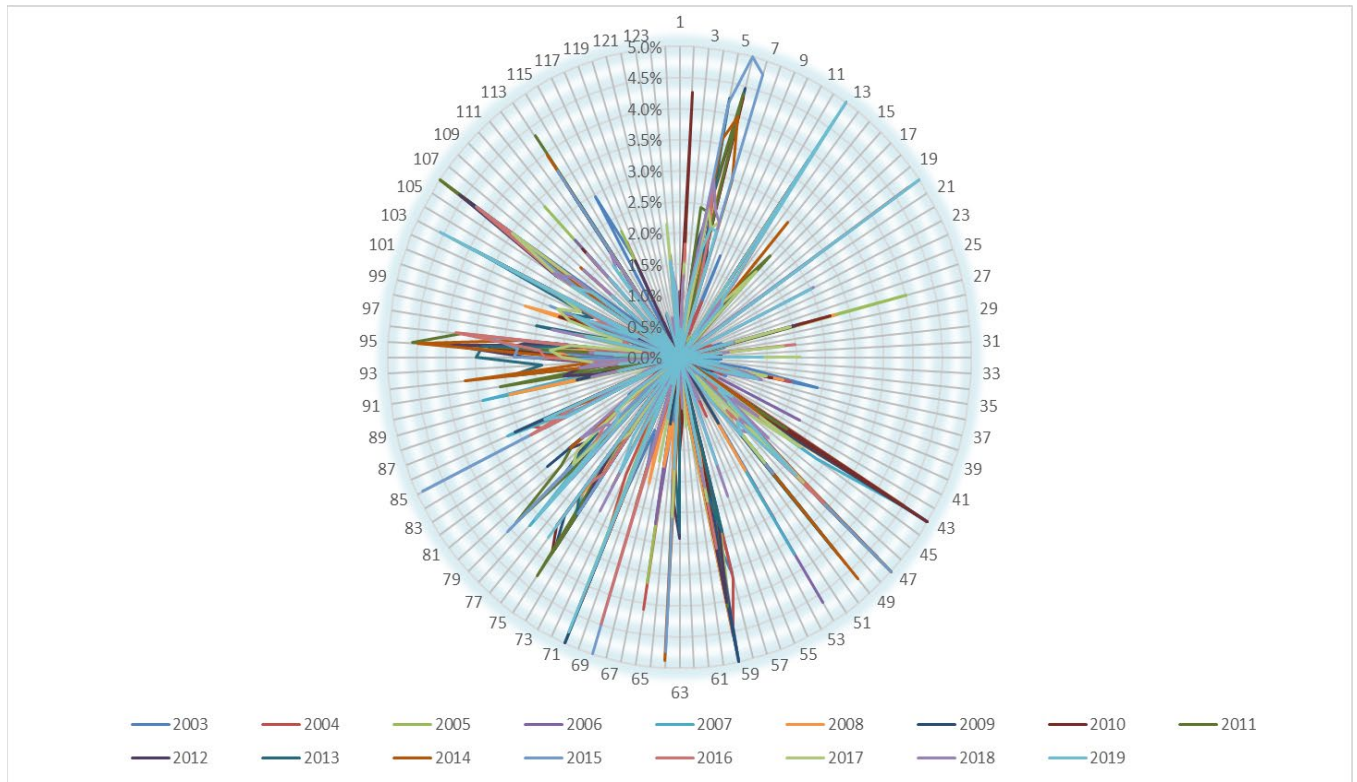
2.9.8.2. Element 8.2 – Vessel Harvesting Use Caps

Element 8.2 defines the proposed vessel use cap with options that range from 3 percent to 5 percent of the total CQ (both CQ derived from LLP licenses and processor permits). A vessel use cap restricts the quota that can be consolidated and harvested on one vessel during the year. Unless the use cap is very restrictive, it is expected to allow some consolidation to occur within the fleet. Consolidation of the Pacific cod allocation is most likely to occur in the AFA fleet where vessel operators already lease Pacific cod within the pollock cooperatives, and these vessels are typically larger than Pacific cod focused vessels. This practice is expected to continue or expand when LLP license holders are issued Pacific cod QS in addition to their pollock allocations that are assigned to their vessels.

Most of the cooperative programs in the North Pacific include a vessel harvesting cap. Programs with vessel harvesting caps include the AFA, Amendment 80, and CGOA Rockfish Program. The Crab Rationalization Program did not have a vessel harvesting cap for vessels in a cooperative. At the time the Crab Rationalization Program was being developed it was understood that the fleet was highly over-capitalized and consolidation was an expected outcome as the fleet adjusted harvest capacity to better match the decreased GHJs and increased effort that is often associated with fisheries when rationalization is considered. The analysis below provides an evaluation of the distribution of harvest across the BSAI Pacific cod trawl CV sector to help understand what percentage of the fishery was taken by vessels in the past.

Figure 2-15 shows the percentage of the BSAI trawl CV Pacific cod target fishery that was harvested by vessel on an annual basis for the years 2003 through 2019. Harvests by vessels that were greater than 5 percent of the total were truncated at 5 percent to protect confidential information. Each line extending from the center of the figure represents the catch of a vessel. The length of the line shows the percentage of the annual total harvested by the vessel. In summary, the figure shows that few vessels ever harvested more than 5 percent of the annual total. A limit of 5 percent would have constrained certain vessels in some years and in some years no vessels reached that level of harvest.

Figure 2-15 Percentage of BSAI trawl CV Pacific cod target fishery harvested by trawl CVs, 2003 through 2019



Considering the historical use of vessels to generate the projected initial allocations under Element 2.2.1, Element 2.2.2, and Element 2.2.3, from five to seven vessels harvested 3 percent or more of the qualifying catch history. No vessels were reported to have harvested more than 4.5 percent of the qualifying catch history under any primary option considered. Setting a vessel use cap at 3 percent would ensure that a minimum of 34 CVs must be used to harvest the entire allocation and setting the cap at 5 percent would ensure 20 vessels would fish, without a grandfather provision. Grandfathering CVs over that limit would slightly reduce the number of CVs required to harvest the entire allocation.

The grandfather provision in the Council’s motion indicates that “vessels over the cap at the time of quota share issuance are grandfathered.” This language appears to tie the grandfather provision to the amount of QS allocated to the LLP license assigned to the vessel at initial allocation. If the LLP license is issued a percentage of QS that would result in the vessel being over the defined percentage of total CQ, the vessel assigned to the LLP license would be grandfathered at that level. If the Council did not want to include the grandfather provision for vessels that meet these criteria, it could consider selecting a vessel cap that addresses concerns about consolidating the Pacific cod fishery on fewer vessels while ensuring that a minimum number of vessels will participate in the future.

Depending on the Council’s intent for the vessel grandfather provision, the Council could apply the grandfather provision to the vessel or the LLP license at the time of initial allocation. If applied to the vessel, the Council will need to define if a transfer of the vessel also transfers the grandfather provision. In other programs grandfather provisions were not transferrable. The same issue would apply to vessel replacement. If applied to the LLP license, the grandfather provision would apply to the vessel the LLP license is assigned, allowing the owner of the LLP license to move it between vessels. The Council would still need to define if transferring the LLP license to a different owner also transfers the grandfather provision.

Figure 2-16 shows the average percentage of the targeted BSAI Pacific cod trawl CV sector allocation harvested by the top three producing vessels on an annual basis, over the years 2003 through 2019. The average annual percentages were sorted from low to high and plotted as a scatter diagram, resulting in plotting 17 years of data that are not in chronological order. The top three CVs during the years considered averaged from under 3.5 percent of the annual total to about 7.5 percent. The broad range in the percentage of catch by the top three producing vessels varies for a variety of reasons including the sector’s annual allocation, ex-vessel prices for Pacific cod, the number of vessels participating, the season length, and regulatory changes that occurred over the period considered.

Figure 2-16 Average percentage of BSAI trawl CV Pacific cod target fishery harvested by the top three producing trawl CVs, 2003 through 2019

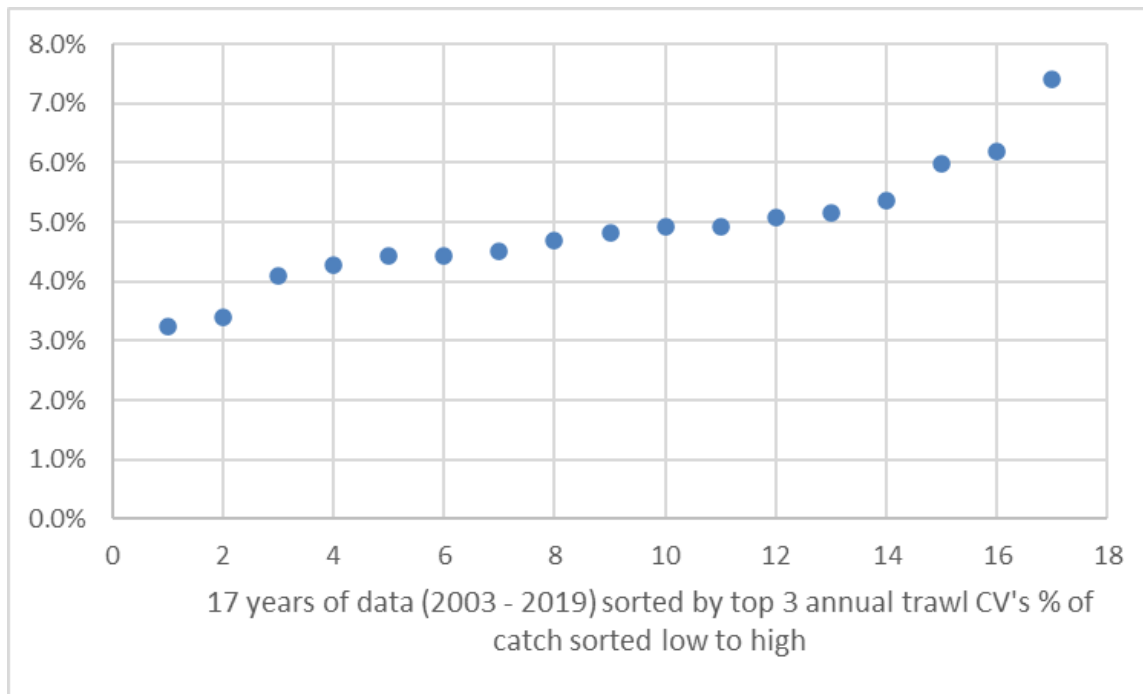


Figure 2-17 is presented to provide a comparison of the BSAI Pacific cod ITAC, number of active CVs targeting BSAI Pacific cod, average percentage of the three highest producing CVs during the year, and the nominal ex-vessel price for Pacific cod. Information provided in the figure indicates that there is no consistent, direct correlation between the ITAC or the number of vessels that participate in a year and the percent of the total sector’s harvest taken by the top three producing vessels. The ex-vessel price per pound (nominal) does track more closely with the number of vessels that participate. Indicating that in years when the price is higher more vessels are attracted to the fishery. This analysis does not consider costs of production during the years, but it is worth noting that 2008 was a year when fuel costs were very high and increased prices were often offered to help offset the relatively high variable costs that year.

Figure 2-17 BSAI Pacific cod ITAC, trawl CVs targeting BSAI Pacific cod, and average percent of top three trawl CVs, 2003 through 2019

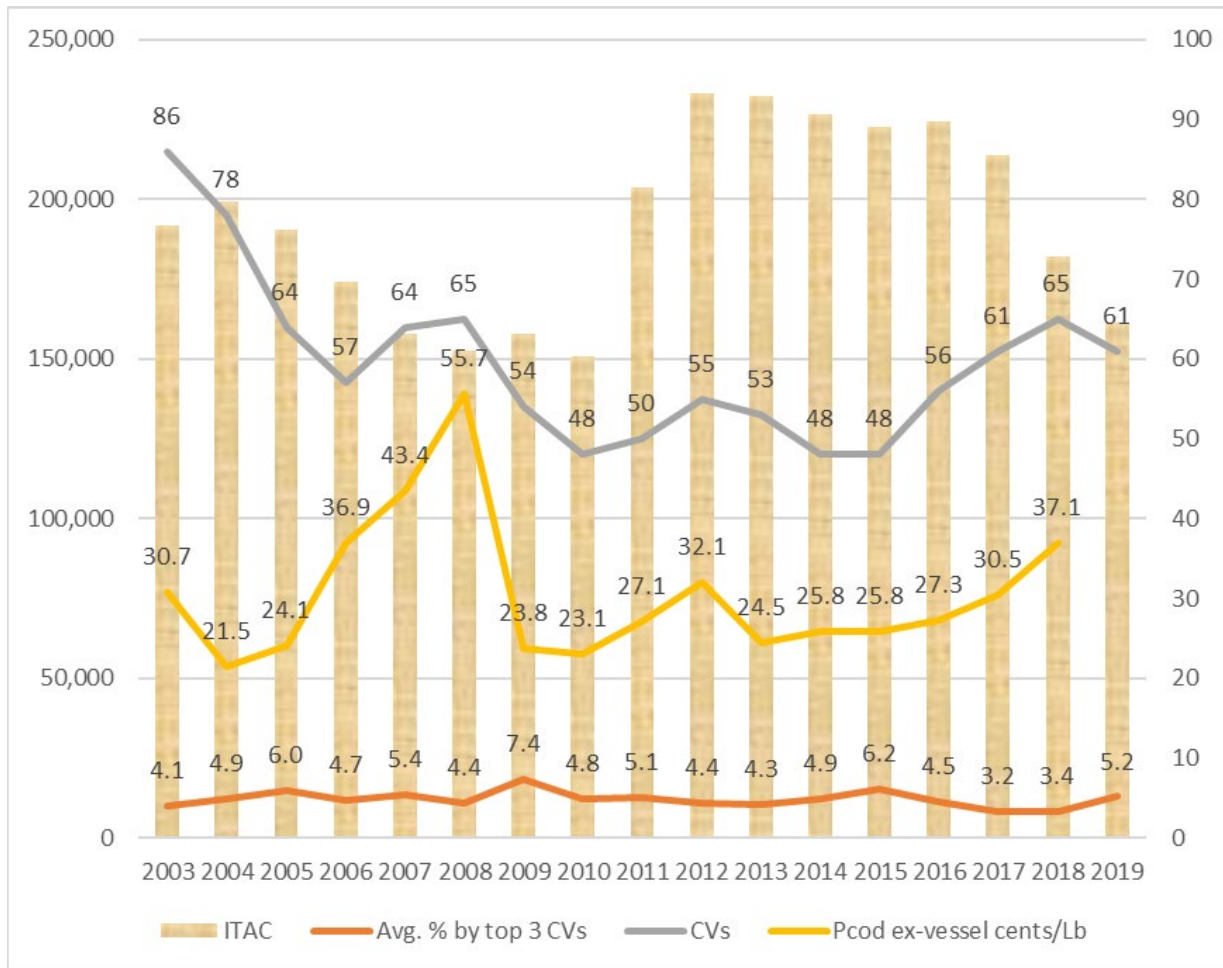


Table 2-155 shows the calculated correlation of the variables presented in Figure 2-17 over the years 2003 through 2018. Data for 2019 was excluded because ex-vessel value was not available. The values show a weak to moderate negative correlation between the average percentage of the top three CVs and the other variables considered

Table 2-155 Correlation of variables presented in Figure 2-17

	ITAC	Avg. % by top 3 CVs	CVs	Pcod ex-vessel cents/Lb
ITAC	1.00			
Avg. % by top 3 CVs	-0.24	1.00		
CVs	-0.21	-0.29	1.00	
Pcod ex-vessel cents/Lb	-0.45	-0.31	0.23	1.00

Because of the variability in the percentage of catch by the top producing vessels on an annual basis and our lack of information to forecast future vessel harvests, selecting a vessel cap will depend on the size of the fleet the Council hopes to maintain under the proposed PCTC Program.

The cooperative structure should allow cooperative members to determine whether to fish or lease their CQ to generate value, so it is expected that ex-vessel price will be less of a factor (positive correlation) when determining to fish with a vessel or lease CQ in a cooperative. Higher ex-vessel prices are also

expected to be reflected in the lease rates, which means that cooperative members may not need to fish their CQ to benefit from higher ex-vessel prices.

Finally, implementing a vessel use cap will have the greatest impact on the vessel operators that are most dependent on the Pacific cod fishery. Vessel operators that have a more diverse harvest portfolio are more likely to fish Pacific cod as a supplement to their other fisheries. For example, AFA vessels that prefer to focus on the pollock fishery (lease their Pacific cod quota) or CVs that primarily fish in the GOA may not be close to the vessel cap and may have the opportunity to lease CQ to use on their vessel. Whereas a vessel that was highly focused on the Pacific cod fishery may be less able to lease additional CQ, especially in years of low BSAI Pacific cod ITACs, to extend its fishing season.

2.9.8.3. Element 8.3 - Holding and Use Caps of Harvest Issued to Processors

Element 8.3 would define processor-issued cooperative share caps that limit the percent of that class of shares a person could hold or use. This cap would be applied at the firm level (not the plant level). The initial allocation of harvest shares to processors is defined under Element 5.3. The caps considered in this section would be applied to any harvest quota initially allocated under that provision.

The Council is considering cap options that range from 15 percent to 20 percent of the harvest shares issued to processors, with an option to grandfather processors whose initial allocation exceeds the cap at their initial allocation.¹⁴⁰ Once a maximum share cap is reached the limited access privilege holder would be unable to hold or use any more of the harvest quota. Limited access privilege holders under the cap would be allowed to purchase additional processor permits and their associated processor QS up to the processor QS ownership cap.

Processing harvest share ownership caps take into account that the number of processors is significantly less than the number of harvesters. It is expected that using averages of the largest processors over several years to determine a cap it would smooth out high and low years for processors and reduce the ownership cap. Also, because the number of processors is small, data confidentiality will limit the amount of information that can be presented. Ownership data at the processor level is difficult and often impossible to determine with existing data and as a result it is difficult to analyze the impacts of various caps. In addition, processors may choose to put LLP license they may own or control under different persons names, reducing the ability to discern ownership. Use caps under Element 8.4 would help reduce the unintended consolidation at the firm level by also placing processing caps on individual processing plants. This concept is similar to the QS ownership caps and vessel use caps considered in the CV sector.

As shown in Element 5.3 the top four processing firms account for about 75% of the targeted BSAI trawl CV Pacific cod processing history during the qualifying years considered. Those percentages are shown as an average of the four firms in Table 2-156. These ranges fall within the percentages under consideration by the Council. Because the values are averages, some of the four firms processed either a higher or lower percentage of the total than the average. Selecting the average percentage for the holding and use cap would mean that one or two processors would be over the cap and would need to be grandfathered in above the cap or the QS would not be issued. Confidentiality restrictions prohibit the analysts from providing greater detail.

¹⁴⁰ Processors do not have catch history. As a result, this option is not based historically use of a maximum amount of the harvest. Given that it not based on historical use that may be used to justify a maximum limit, the Council may wish to set the maximum limit high enough that no one would need to be grandfathered, rather than justifying a grandfather provision.

Table 2-156 Average percentage of processing history of top four processing firms

Processing Firms	2014-2019	2009-2019	2004-2019
All Seasons	18.0%	18.7%	18.9%
A & B Seasons	17.9%	18.7%	18.9%

Source: BSAI_PCOD_LAPP_Processors(4-9-20): Processing history groupings

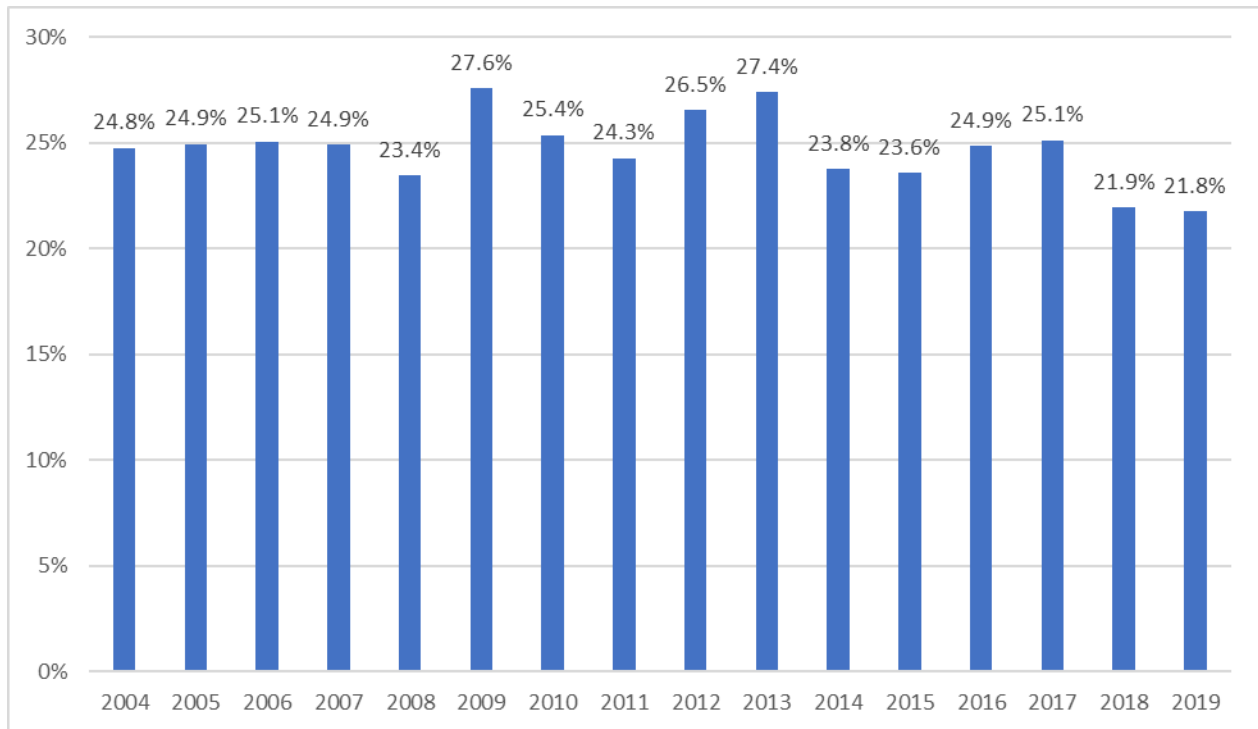
Caps on ownership and use of harvesting shares issued to processors could be used to prevent consolidation of market power in a few firms. Share concentration could influence the market power of processors with respect to harvesters. Caps could also facilitate a market for new entrants.

2.9.8.4. Element 8.4 - Processing Use Caps

Element 8.4 would create processing use caps at the company level of 20 percent to 30 percent of the total CQ issued. The PA selected 20 percent. Use caps would be protection against excessive consolidation of processing by a company and would be calculated based on use of all CQ issued under the PCTC Program and not just harvest shares initially issued to processors as described in Element 8.3. Because it applies to the amount of Pacific cod allocated as part of the PCTC Program that can be processed by a company, it may allow a processing firm that operates more than one plant to consolidate its activity in fewer plants and it could prevent the company from expanding its usage of PCTC Program beyond a predetermined acceptable level. This alternative would ensure that a processing company would be limited to processing specific percentage of the PCTC program allocation. If the cap was set at the facility level, as was considered by the Council, there would have been no processing limit if a firm operated enough plants.

Figure 2-18 shows the annual average deliveries of BSAI targeted trawl CV Pacific cod to the top three processing companies. Changes in the fishery and regulations mean that the top three plants are not always the same each year. Information in the figure shows that over the period 2003 through 2019, the average of the top three companies taking deliveries was between 21.8 percent and 27.6 percent of the total. The variability of about 6 percent of the total over the period shows that changes in competition, regulations, and the amount of fish available on an annual basis strongly influences how concentrated the processing component of the fishery is among the top companies. Also recall that because the percentages listed represent the average of the three companies that took the most Pacific cod, one of the firms could have a much higher percentage of the total than the average and without the grandfather provision that company, would be required to reduce its reliance on the trawl CV Pacific cod fishery. Without the grandfather provision, the largest processor at the time of initial allocation would be most constrained by processing use caps.

Figure 2-18 Annual average of top three companies processing of targeted BSAI Pacific cod trawl CV deliveries, 2003 through 2019



Flexibility during the year would give processors the ability to move around the Pacific cod quota and to allow vessels to enter and exit relationships with processors. Because the program does not include a cooperative use cap, that concept that was included in other LAPPs would not limit the degree of consolidation of fishing harvests by any one cooperative through the leasing of annual harvest privilege among cooperatives. However, it is anticipated that companies would prefer to be associated with one cooperative. Regardless, the firm limit will also constrain the amount of Pacific cod a cooperative may use.

The firms that are most likely to be impacted by this action are those that are closest to the fishing grounds and are most attractive delivery locations for harvesters. This could include certain shorebased plants located in Akutan, Adak, and Unalaska/Dutch Harbor, as well as vessels with capacity to process above the cap. No differentiation has been made regarding use caps for different classes of processors, meaning that shoreplants, floating processors, motherships, and C/Ps acting as a mothership would all operate under the same cap - except AI shoreplants that were exempted from the Element 8.4 use cap under Element 6.

The grandfather provision would be calculated based on the sum of the company’s processing of qualifying trawl CV deliveries during the period selected under Element 2 divided by all qualifying trawl CV deliveries to all companies. The figure above shows the variation in the annual processing of the company’s that took the most deliveries over the periods considered.

2.9.9. Element 9 - Cooperative Provisions

Element 9 address cooperative provisions. In June 2021, the Council clarified that a cooperative shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of CVs (both trawl and pot gear vessels if Element 14 is selected) eligible to harvest a portion of that cooperative’s CQ must be identified in the annual cooperative application.

The Council's PA is shown in **bold** below.

Annual cooperative applications must be filed on or before November 1 of the preceding year.

Cooperatives shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of CVs (both trawl and pot gear vessels, if Element 14 is selected) eligible to harvest a portion of that cooperative's CQ must be identified in the annual cooperative application.

Cooperatives are intended only to conduct and coordinate harvest activities of members and are not Fishermen's Collective Marketing Act (FCMA) cooperatives.

Membership agreements will specify that processor affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws.

Element 9 describes cooperative provisions, including the annual cooperative applications. The Council has included a cooperative reporting requirement under Element 12, which is in addition to the information requested under Element 9 in this section.

Each cooperative would be required to file an annual cooperative application to receive an annual allocation of CQ. The application must be filed on or before November 1 of the preceding year. A November 1 application deadline allows RAM to receive and process these applications in addition to the cooperative applications from other LAPPs prior to the start of the new fishing year.

Cooperatives are formed by qualified LLP license holders with Pacific cod QS assigned to their LLP license. Each LLP license may be assigned to one cooperative. A vessel designated on a qualified LLP license and listed in the annual cooperative application is eligible to harvest that CQ. Vessels that are not designated on a LLP license and not listed in the annual cooperative application are not authorized to harvest CQ. A vessel can be listed in multiple cooperatives, including one that delivers to a non-AI shoreplant and one that does deliver to an AI shoreplant. Vessels eligible to harvest CQ would have their CQ catch deducted from the cooperative's allocation unless they were fishing with pot gear¹⁴¹, the area they were fishing was open to directed fishing with pot gear for their sector, the vessel was assigned to an LLP license that had a Pacific cod pot gear endorsement for the area they are fishing, and the processor lists "Open Access" or designated CDQ number as the federal fishery management code. Otherwise, the landing of directed cod should be reported using the "PCTC" management code and be deducted from the CQ assigned to their cooperative. Also, to account for catch, a PCTC fishing trip cannot be split among PCTC, open access, or CDQ management programs. An LLP license can only join one PCTC Program cooperative. Cooperatives are intended only to conduct and coordinate harvest activities of members and are not FCMA cooperatives. The Council was provided a discussion paper during 2006 that described the authority.¹⁴² That paper stated that:

“harvesters would be permitted to join a cooperative that would coordinate the harvest of the allocations of its members. If not properly defined, the function of these cooperatives has the potential to raise antitrust concerns. The general activity of these cooperatives is the harvest of fish... The creation of a harvest cooperative necessarily raises the question of whether the cooperative would qualify for the antitrust exemption of the Fishermen's Collective Marketing Act. Under the terms of all of the alternatives, processor affiliated vessels (i.e., vessels owned or controlled by a processor) are qualified for harvest cooperative membership. Allowing or requiring harvest cooperative membership by these entities likely disqualifies that cooperative

¹⁴¹ Any catch by these vessels using hook-and-line or jig gear would not be deducted from the CQ allocation, since they are not allowed to be used to harvest PCTC CQ under this proposed action.

¹⁴² <https://www.npfmc.org/wp-content/PDFdocuments/meetings/GOAantitrust406.pdf>

from the antitrust exemption of the FCMA, limiting the activities that the cooperative can engage in. As a result, a harvest cooperative clearly cannot engage in negotiations of the price or terms of delivery of catch to a processor... provide that processor affiliates cannot participate in price negotiations... In a prior action (the rockfish pilot program), the Council similarly clarified the nature of cooperatives by including the following two provisions: The cooperatives formed under this program are harvest associations that are intended only to conduct and coordinate harvest activities of their members and are not FCMA cooperatives. Processor affiliated vessels will be permitted to join harvest cooperatives to the extent permitted by antitrust laws. Cooperative membership agreements will specify that processor affiliated harvesters cannot participate in price setting negotiations except as permitted by general antitrust law.”

Based on previous guidance as presented above, membership agreements will specify that processor affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws. Cooperative agreements are valid for one calendar year.

Each cooperative will receive annual CQ allocations of Pacific cod and apportionments of halibut and crab PSC if it is assigned to cooperatives based on members’ qualifying catch histories (and processing histories, if applicable) to be harvested in accordance with the harvest cooperative agreement. The allocation of Pacific cod quota is described in detail under Element 2 (Section 2.9.2). Allocations of halibut and crab PSC to cooperatives are described in detail under Element 3 (Section 2.9.3).

Cooperative applications are used by NMFS to manage the fishery and monitor for ownership and use cap overages. For example, each calendar year NMFS must determine the tonnage of Pacific cod that will be assigned to participants in a Pacific cod cooperative. To make that calculation, LLP license holders must assign their LLP license(s) to a Pacific cod cooperative to participate in the PCTC Program. After the assignments are made, RAM Division can then allocate Pacific cod to cooperatives, and apportion PSC to cooperatives if applicable. Pacific cod quota may only be fished through cooperative membership.

Cooperatives are intended only to conduct and coordinate fishing of their members’ allocations. The cooperative’s members would be jointly and severally liable for the harvest of the cooperative’s allocation. A cooperative may include fishing practice codes of conduct in its membership agreement.

2.9.10. Element 10 - Share duration

The Council’s PA is shown in **bold** below.

All QS and allowances under this program are revocable privileges that 1) may be revoked, limited or modified at any time; 2) shall not confer any right of compensation to the holder, if they are revoked limited, or modified, and; 3) shall not create or be construed to create any right, title or interest in or to any fish before the fish is harvested by the holder.

The duration of all QS and associated PSC apportionments is 10 years. These permits will be renewed before their expiration, unless revoked, limited, or modified.

Under Section 303A of the Magnuson-Stevens Act, a LAPP permit is a permit issued for a period of not more than 10 years that will be renewed before the end of that period, unless it has been revoked, limited, or modified. NMFS would renew the permits under the proposed action without the Council initiating a formal analysis to reauthorize the PCTC Program.

In general, the Council when developing LAPP programs has not included sunset dates. The one exception, the CGOA Rockfish Program implemented in 2012 had a sunset date of 10 years. That program had to be reauthorized by the Council before it expired or the program would have lapsed and management of the CGOA rockfish fishery would have returned to limited entry under the LLP. The program had been reviewed two years prior to the reauthorization process, as required under the

Magnuson-Stevens Act, and based on the sufficient information in the review, the program was determined to be providing the intended benefits to stakeholders. Because the review process for other LAPPs under the Council's authority are also detailed and provide similar information on how the LAPP is functioning, the Council has determined that the required LAPP review will provide the information necessary to determine if the proposed PCTC Program is operating as intended, needs to be modified, or should be eliminated under the Council's normal regulatory recommendation authority.

During Council deliberations to reauthorize CGOA Rockfish Program in January 2020, the Council did not recommend a sunset date. The Council noted in reauthorizing the CGOA Rockfish Program that inclusion of a sunset date creates considerable time and expense associated with reauthorizing a LAPP when it is scheduled to sunset. These costs are in addition to the required program reviews established in Section 303A of the MSA. In addition, including a sunset date could have various consequences for the program, including affecting the value of the licenses that qualify for the program since the longer-term exercise of the fishing privilege associated with the license will be uncertain. The NRC study (NRC, 1999) points out that LAPPs that are stable and in which persons are able to make long-term investments will achieve greater benefits. While the Magnuson-Stevens Act provides that LAPPs create a revocable privilege that is not permanent, the creation of long-term interests is argued by some to create a stewardship and conservation interest by giving participants a more direct stake in the condition of the stock.

2.9.11. Element 11 – Monitoring

The Council's PA is shown in **bold** below.

All vessels harvesting CQ will be in 100% observer coverage category. This element is not intended to modify the observer coverage exception provided for CVs delivering unsorted codends to a mothership or the current at-sea observer data transmission requirements for non-AFA trawl CVs for the first 3 years after implementation. Monitoring and enforcement provisions will be implemented to track quota, harvest, PSC, and use caps. Shoreside processors will be required to operate under a NMFS-approved Catch Monitoring and Control Plan. The Council authorizes NMFS to report weekly vessel-level PSC information as authorized under Magnuson-Stevens Act (MSA) Sec 402(b)(2)(A).

This section describes NMFS's expectations for monitoring elements under the proposed action. For a detailed explanation of NMFS monitoring recommendations, refer to Section 2.9.7; Effects on Management, Monitoring, and Enforcement.

Monitoring objectives under a catch share program

Establishing a catch share program creates new demands for enhanced catch accounting, monitoring, and enforcement. Based on the lessons learned from other catch share fisheries, an allocation-based quota fishery must be developed with sufficient safeguards to meet the following objectives:

NMFS must be able to ensure compliance with monitoring regulations governing the fishery: In a rights-based fishery, quota shareholders have a strong incentive to maximize the value of their quota. An effective rights-based quota management program must recognize that economic incentives exist and there could be an increase in activities such as illegal high grading or under-reporting catch. Monitoring, management, and enforcement methods must provide sufficient measures to ensure against them.

There must be a reliable, authoritative record of quota harvested: Management of catch limits to a cooperative are enforced through regulatory provisions that prohibit the cooperative from exceeding its allocations, therefore a source independent and more comprehensive catch monitoring and accounting

approach for allocated species is justified. Quota holders could have a financial incentive to under-report certain components of catch. Without a reliable source for independent information, a self-reporting system could be vulnerable to fraud and may, in fact, create incentives for these practices. The catch of target species can be determined using both observer and landings data as allocated groundfish species must be retained, landed, and sold for the vessel owner to receive earnings from the catch. In general, PSC is required to be discarded and PSC often limits the catch of economically valuable target species. The greater the potential to limit the target species catch, the greater the incentive created to not have PSC identified and estimated. Therefore, independent information collected by observers provides the best available information on PSC.

Harvest and PSC data must be timely and accessible: Management programs that allocate catch and PSC to entities (such as cooperatives) give recipients more specific control over their fisheries. Cooperatives that receive allocations generally are prohibited from exceeding their allocations and if they exceed an allocation, NOAA may initiate an enforcement action against the cooperative. This requires active catch monitoring on the part of cooperatives and increases their need for timely access to information. As such, all concerned parties (NMFS, OLE, and quota holders) must have timely access to data that clearly details the amount of harvested quota, including PSC. To the extent these records are edited, all parties must receive, or have access to, the edited record.

Management programs with transferable PSC allocations to cooperatives require additional monitoring and PSC accounting: PSC monitoring requirements depend on whether NMFS manages PSC limits (caps) for a group of vessels or whether these PSC limits are allocated among specific entities, like cooperatives, within a fishery. Fishery or sector-level PSC limits are managed by NMFS through directed fishing closures in the Federal Register. These closures apply to all vessels participating in the relevant directed fisheries. Any vessel fishing after the closure is in violation of regulations. Whereas PSC allocations that are made to a specific entity, like a cooperative, are enforced through regulatory provisions that prohibit the entity from exceeding its allocation. These entities monitor their PSC allocation and are prohibited from exceeding that allocation. NMFS does not issue fishery closures once these allocations are reached.

In fishery or sector-level PSC limits that are managed by NMFS, estimates of PSC are based on data collected by observers that are placed on a random selection of trips across the fishery. Bycatch rates from observed vessels are used to estimate the bycatch on unobserved vessels. However, from a legal perspective when PSC is allocated to a cooperative, calculated bycatch rates (based on other vessel fishing activities) cannot be used as a basis for enforcing a prohibition against exceeding a PSC allocation. Furthermore, cooperative-based programs could create an opportunity for vessels within a cooperative to collude and could allow them to manipulate their bycatch rates to the degree that NMFS would be prevented from collecting and estimating accurate PSC information. For these reasons, transferable PSC allocations require observer coverage to estimate PSC accurately on all trips.

PCTC Monitoring Approaches

To meet the suite of monitoring objectives and management needs under the PCTC program, the monitoring requirements would include:

- Full observer coverage (carry an observer on all trips) on participating CVs;
- Full retention of all allocated groundfish species;
- After sampling is completed by an observer, discard all PSC;
- Participating CVs provide a computer with ATLAS and data transmission capabilities for observers to enter; transmit data, and communicate with NMFS;
- Required completion and submission of logbook;
- All allocated groundfish species delivered to a shoreside processor that has a state of Alaska certified scale has capabilities to print an unalterable record of the weights;

- All processors receiving PCTC deliveries must sort and weigh all delivered catch by species.

These elements are described in more detail in the following sections along with explanation of Electronic Monitoring (EM) and its readiness as a monitoring approach for the PCTC program. Note that Section 2.10.7 of the document describes the current monitoring requirements for BSAI Pacific cod trawl CV and shoreside processors under status quo and evaluates the impacts of the monitoring considerations under the proposed action.

Observer coverage

The Council motion specified a goal that all vessels under the PCTC program would be in the full coverage category. NMFS concurs with this recommendation, as it would be necessary to monitor at-sea discards and obtain data to manage transferable PSC limits.

Under a cooperative program, procurement of observer services for vessels participating in this program would shift from the partial coverage category service delivery model (Federal Contract and fee system) to the full coverage (pay-as-you-go) service delivery model. Vessels would procure observer services by contracting directly with a permitted observer provider as required at 50 CFR §679.51(d)(1) and would pay the full cost of observer coverage.

Landings by trawl CVs under this program would not be subject to the partial coverage observer fee specified at 50 CFR §679.55(f) and vessel owners and operators would not be required to log fishing trips in the ODDS Program as required for vessels in the partial coverage category of the Observer Program.

Implementation of this cooperative program would not modify the observer coverage exception specified at 50 CFR §679.50(a)(2), that exempts trawl CVs from observer coverage requirements when delivering unsorted codends to a mothership. NMFS does not require CVs that deliver unsorted catch to motherships to carry observers because catch is not removed from the trawl's codend prior to it being transferred to the mothership. Motherships are required to carry two NMFS-certified observers during each fishing day and all observer sampling occurs on the mothership.

Gear Conversion

Depending upon how the Council approaches Element 14; Gear Conversion, monitoring requirements would need to be developed for vessels using pot gear to harvest allocated species. For example, the Council may choose to implement the gear conversion so that PSC (such as crab PSC) that is caught by vessels fishing with pot gear counts toward the cooperative's transferable PSC allocation. As described in the previous section, transferable PSC allocations require observer information from all trips. Therefore, the vessels fishing with pot gear under the PCTC program would be in the full coverage observer category. An alternative approach for the vessel fishing pot gear is that their PSC would count to the fishery or sector-level PSC limits managed by NMFS. Under that scenario, pot vessel fishing under the program might remain in the partial coverage observer program and estimates of PSC could be based on data collected by observers that are placed on a random selection of trips across the fishery.¹⁴³ It also is not yet clear what the computer, ATLAS, and data transmission requirements would be for vessels fishing with pot gear. Once the gear conversion element is more fully developed, the monitoring requirements will be identified.

ATLAS software and observer data transmission

All vessels participating in the PCTC program would be required to provide a computer that meets minimum specifications for use by an observer and data transmission capability. NMFS installs custom software called ATLAS on the vessel's computer and this software application is used by observers to enter their data. Since 2014 all observer data has been entered into the ATLAS software. This ensures

¹⁴³ The Council's motion states that "all vessels in the program will be in the full coverage program." This language could be interpreted to apply to vessels using pot gear under any gear conversion provision.

maximum data quality, facilitates timely electronic data entry and transmission of data to NMFS, and allows observers to communicate with NMFS.

Observer information is reviewed by NMFS to ensure that data were collected following proper protocols and it is normal for data to be modified or corrected during the “debriefing” and quality control process. Debriefing occurs at the end of an observer deployment and is the final data assurance check prior to finalizing observer data. The ATLAS software contains business rules that perform many of these quality control and data validation checks automatically, which dramatically increases the quality of the preliminary data. If observers have access to the ATLAS software to enter data and transmission capabilities to send this information, then the number of corrections that must be made during the debriefing process is reduced and the quality of data is increased.

Transmitting data electronically while that vessel is at-sea allows NMFS to generate catch and bycatch estimates in near-real time and reduces the time before the observer data are available for management by a week or more. Observer data are made available to vessel owners and operators within two hours after an observer transmits data to NMFS. If observers submit their data at the end of the trip, this reduces the timeliness of data that is available to NMFS managers and cooperative managers. Transmitting data at the end of a trip could also add logistical problems that could further delay data submission if an observer is unable to complete data transmission during a delivery and then transmits data during a subsequent delivery at a later time. Under the PCTC program, real-time accounting of halibut PSC will be important, especially for the cooperatives that are managing their PSC and tracking vessel-level PSC accounting. Timely information on bycatch would allow the fleet to rapidly respond (both individually and collectively) to high PSC rates so that the catch of prohibited species can be minimized, and the industry can more effectively stay within its overall PSC limits. If PSC limits are constraining and the fleet needs to respond, then daily data will be essential so the vessels can modify fishing immediately.

At-sea transmission of observer data improves data quality. An important data quality issue for the PCTC program is the likelihood that data used for inseason management, either by NMFS or the cooperatives, will change from the time decisions are made, to when the data are finalized after the debriefing process. During the debriefing process, Observer Program staff evaluate an observer’s sampling performance and data collected for completeness and to ensure data are entered accurately. Data quality may be impacted in a variety of ways including the amount of data collected (i.e., the size of samples, or the number of samples) and the ability of an observer to correctly apply data collection protocols to a variety of fishing conditions. If the Observer Program determines that sampling procedures were not followed, or if the data are determined to be biased, observer data may be deleted. One way in minimizing the potential for data to be modified during the debriefing and data quality checking process is to require additional training and experience. Experience affects the amount of data collected (the size of samples, or the number of samples) and the ability for that observer to quickly adapt to atypical situations. NMFS does not anticipate observers will be required to have a level 2 or lead level 2 deployment endorsement under this program. Therefore, it is likely that newly trained observers could be deployed on PCTC vessels. In previous analysis, NMFS demonstrated that experienced observers who completed at least two contracts are less likely to have data deleted during the debriefing process. If observers have transmission capabilities and are able to communicate with an inseason advisor while at sea, they can ask questions and clarify data sampling protocols. This communication and rapid feedback loop reduces the time required for inexperienced observers to get “up to speed” with respect to sampling, decreases the number of corrections that must be made during the debriefing process, and reduces the probability of data collection problems that could cause data to be deleted.

Additionally, observers onboard vessels with the ATLAS software and transmission capabilities have the ability to communicate directly with Observer Program staff in near real time to address questions regarding sampling as well as to notify staff of potential compliance concerns. In these cases, NOAA OLE has been able to identify compliance trends and violations early to better engage industry with outreach and minimize the need for enforcement actions. This allows vessels to come into compliance

sooner and avoid more serious violations of the regulations and improves observer safety at sea. Better data quality checks of observer data and increased compliance by vessels both serve to improve PSC accounting. Currently, observers deployed on trawl CVs are not required to have a level 2 or lead level 2 deployment endorsement which means that a newly trained observer could be deployed on PCTC vessels. Inseason communication is especially important for inexperienced observers.

For all these reasons, the PCTC program would include requirements to provide a computer with the ATLAS software and would provide observers with data transmission capabilities. NMFS recommends that all vessels greater than 60 ft LOA would be required to enable observers to transmit their data while at sea whereas smaller vessels would facilitate data transmission at the end of the trip.

Recordkeeping and Reporting

The PCTC program would add recordkeeping and reporting requirements for vessels to maintain a trawl gear Daily Fishing Logbook (DFL) or NMFS-approved electronic logbook (ELB). Required information for each haul (including haul location, catch-by-haul, and discards) would be recorded within the specified reporting time limit and support observer data collection. This would not change regulations for vessels >60ft LOA, since they are already required to maintain logbooks. However, it would be a new requirement for any vessels less than 60ft LOA.

Shoreside Processors

Under the PCTC Program, catch accounting for allocated groundfish would take place at the shoreside processing facilities, except for PSC that must be discarded at sea. The catch of allocated species that are landed at the shoreside processing facilities would be required to be sorted by species and weighed on a State of Alaska certified scale that has capabilities to print an unalterable record of the weights. It would be important for NMFS to ensure that adequate measures are in place to facilitate catch accounting. These provisions could be added to regulations or, similar to other rationalized fisheries where catch accounting takes place on shore, NMFS could require that processors operate under an approved CMCP. The CMCP would be developed by the processor and approved by NMFS. It would detail a series of performance standards ensuring that all delivered catch is accurately sorted and weighed by species.

Electronic Monitoring

NMFS is committed to the use and development of innovative electronic technologies in fishery dependent data collection to collect timely and cost-efficient data needed to manage fisheries within US federal waters. In Alaska, NMFS and the Council have been on a path of integrating electronic technology into fisheries monitoring programs for many years.

Developing and implementing technology requires careful thought. Consideration of cost must extend beyond the acquisition of the technology and provide for infrastructure necessary to support the technology into the future, and to adapt and evolve as technology advances. Decisions about where and what to invest in represent strategic choices. Successful development and implementation of electronic monitoring/electronic reporting (EM/ER) depends on engagement of both agency and industry stakeholders and technology needs to be assessed in multiple phases including: research and development; operational testing in a wider component of the fishery; development of performance standards and vessel operator responsibilities; and development and implementation of regulations.

In June 2013, NMFS presented an EM/ER strategic plan (Loefflad et al., 2014, Appendix A) to the Council. The document provided a vision for integrating electronic technologies, goals and objectives, and the specific actions that it will take to achieve the vision. The Council adopted the strategic plan as a guidance document for incorporating EM into the Observer Program.

In 2018, NMFS completed a significant milestone in the Alaska Region Electronic Technologies Implementation Plan (NMFS, 2015) by implementing regulations under Amendment 114 to the FMP for groundfish of the BSAI management area to allow EM as an alternative monitoring option to carrying an

observer for small, fixed gear vessels in the partial coverage category of the North Pacific Observer Program. At the February 2018 Council meeting, the Council passed a motion that shifted the focus of the EM Workgroup from a fixed gear to a trawl gear EM committee to develop EM for use in the trawl fisheries and establish EM and observer tasking priorities. This motion stated that the council recommends the following order of priority for the EM projects:

1. Deck sorting of halibut PSC with EM for compliance monitoring (Implemented in January 2020)
2. Evaluation of alternative sampling methods for salmon on CGOA Rockfish trawl CVs
3. Full retention on AFA Pollock CVs with EM compliance
4. Full retention on WGOA pollock trawl CVs with EM compliance
5. Implementation of EM on fixed gear CVs

As of March 2021, the status of priority projects was as follows: Priority 1 was implemented in January 2020. Priority 2 is still in development; however, some of the efforts have shifted to using AI technology to identify salmon in pollock deliveries. Priorities 3 and 4 were combined which resulted in an ongoing Excepted Fishing Permit (EFP) to evaluate the efficacy of EM systems and shoreside observers for pollock CVs using pelagic trawl gear in the eastern BS and GOA. The typical species composition of total catch in pelagic trawl fisheries is ~99% target species with typically less than 1% non-target species. These conditions are ideal for testing compliance monitoring for a specific requirement approach to EM such as maximum retention (Section 2.1.1. of the Alaska Region Electronic Technologies Implementation Plan, NMFS, 2015). The vessels participating in the EFP are required to retain all harvest with a few exemptions that mostly support typical vessel operations.

Maximized retention allows for any necessary collection of biological sampling (e.g., otoliths, length weights, etc.) during offload by an observer at a shoreside facility. This data collection supports stock assessments and precise accounting of PSC. Any at-sea discard under the exemptions listed in the EFP are recorded in the logbook that is reported via eLandings. This allows for catch estimation through industry reporting and EM data provides validation to ensure vessels are compliant with maximized retention and that any allowable species discards are accurately.

Moving into the second year of testing EM on pelagic trawl vessels, there have been many successes, however, there are also challenges that need to be resolved. The EFP allows for opportunities to learn and adapt to challenges with the input from partners that test and implement a complex monitoring program. These EM learning opportunities will continue as the project progresses and expands. The successes are due to the diligent effort of our partners working toward a common goal established by the Council and taking the time necessary to identify challenges, learn, adapt and design an EM option that works for all the various partners and provides the data necessary to implement a future pelagic trawl EM option.

Expanding the use of EM into non-pelagic trawl fisheries presents a new set of complex challenges that would need to be addressed for an EM option to be successful in Pacific cod trawl fisheries and maintain the data necessary for stock assessment and management. Non-pelagic trawl fisheries typically have more bycatch than pollock directed fisheries. Vessel operators typically sort and discard unwanted bycatch species. Sorting of catch at sea presents a challenge for EM systems. EM systems used in lieu of observers do not allow for the collection of biological samples during the fishing trip. Collection of these needed data occurs during the offload. Allowing sorting and discards would likely introduce bias, impact the accuracy of species composition, and limit the availability of biological samples collected for stock assessment. As a result, the current EM option used for trawl fisheries relies on maximized retention to allow for these data to be collected.

While other Regions have explored EM options to estimate discards at sea on trawl vessels, these programs are relatively new, deal with smaller amounts of catch, and have many regulatory restrictions to collect the necessary data. One method of estimating discards is to include a single chute to discard

unwanted species individually. This method would likely not work in high volume North Pacific fisheries. Therefore, at this time, any approach to EM that allows (extensive at-sea) sorting is not recommended.

Another challenge of implementing EM involves the estimation of halibut mortality. Under a maximum retention and a compliance monitoring approach, 100% of halibut would be retained for observers to collect data necessary for estimation of halibut PSC. During the development of the Trawl EM EFP program for pelagic trawl pollock CVs (Trawl EM Cooperative Research Plan, May 2019), maximum retention of trawl-caught halibut was a highlighted concern. However, halibut PSC rarely occurs in pelagic pollock fisheries. The small amounts of incidentally caught halibut were more of a concern for how to apply PSC restrictions (50 CFR §679.21(a)(2)) and the Prohibited Species Donation (PSD) program (50 CFR §679.26) under the proposed EFP. Pacific cod fisheries have higher halibut PSC rates; therefore, maximum retention would be more of a concern by increasing overall halibut mortality. No discard mortality rate would be applied to estimated PSC and all halibut caught incidentally would be considered dead.

The development of a Trawl EM program for a non-pelagic trawl (NPT) fishery is several steps further down the road of where the Council, EM Trawl committee, NMFS and industry partners are currently at in the development of Trawl EM options. It is a shared goal to further develop EM options for trawl fisheries, but it requires careful consideration of issues that may impact the data we use for management. It is typical for the development of a complex EM option to take several years to develop, test and regulate. This is likely not within the same timeframe as the Council envisions for implementation of a Pacific cod LAPP program. NMFS is concerned that attempting to implement an EM program without this process would not be successful. *Therefore, NMFS does not recommend EM in lieu of at-sea observers at this time for the PCTC program.*

NMFS is optimistic that most of these challenges can be addressed with further development of trawl EM in the North Pacific in partnership with the fishing industry. NMFS recommends the council first indicate to the EM Trawl committee that expanding EM into Pacific cod trawl fisheries is a priority, then allow testing and comprehensive assessment of the effectiveness of EM to meet the requirements for this fishery. This incremental development and implementation process have shown to be successful in implementing EM in other North Pacific fisheries.

2.9.12. Element 12 - Reporting and Program Review

The Council's PA is shown in **bold** below.

Each cooperative shall annually produce a report for the Council describing its membership, cooperative management, and performance in the preceding year including use of CQ derived from processor issued QS and harvest and delivery of the AI CQ reserve, if applicable.

Per the MSA, a formal detailed review of the program shall be undertaken 5 years after implementation, with additional reviews, at a minimum, each seven years thereafter.

Cooperative Reports

In the last two decades, the Council has developed and/or considered developing several cooperative based LAPP programs. As part of those cooperative programs, the Council has required cooperatives submit an annual written report or requested cooperatives provide a voluntary report detailing specific information on the structure, function, and operation of the cooperatives. These reports are intended to be a resource for the Council to track the effectiveness of the cooperative and their ability to meet the Council's goals. Additionally, they are a tool for the cooperatives to provide feedback on the programs. In the recent past, cooperative reports have been presented by the various cooperative managers during the

April Council meetings. Currently, annual cooperative reports are provided for AFA, Amendment 80 Program, CGOA Rockfish Program, and BSAI Crab Rationalization Program. Table 2-157 provides a summary of cooperative reporting requirements and voluntary requests of information.

Any requests, deletions, and/or clarifications of information provided in the cooperative reports (voluntary or otherwise), must comply with the Paperwork Reduction Act (PRA). The PRA was implemented in 1980 to reduce the total amount of paperwork burden the Federal Government imposes on private businesses and citizens and to establish a process through which Federal agencies must obtain approval from the Office of Management and Budget (OMB) before collecting information from the public. Under the PRA, NMFS is required to obtain approval for new information collection requirements implemented through Federal regulations and for voluntary requests for information, or any subsequent revisions to these information collection requirements or requests. In addition, OMB's approval for each information collection expires every three years, even if the regulations requiring collection of the information or the Council's requests for voluntarily information do not change. Prior to the expiration date of each collection, NMFS must submit a request to OMB for approval to continue to collect the information.

The annual cooperative reports are approved by OMB under information collection number 0648-0678 (Alaska Council Cooperative Annual Reports). The most recent request for renewal of approval from OMB to continue to collect this information was submitted to OMB in November 2019. A notice was published in the Federal Register on July 22, 2019 (84 FR 35099), to solicit public comments on the annual cooperative reports information collection.¹⁴⁴ In addition, a questionnaire was emailed to fishery cooperative and intercooperative managers. Two letters of comment received in response to the Federal Register notice. These letters are posted on OMB's [website](http://www.reginfo.gov) (reginfo.gov). NMFS Alaska Region staff also received input via email from several of the cooperative managers. The comments and NMFS's responses are described in more detail in the supporting statement posted on OMB's [website](http://www.reginfo.gov). Following is a summary of the issues raised in these comments for the Council's information as it considers annual cooperative reports for the PCTC Program.

- All the cooperative managers provided input and, in some cases, suggested revisions to NMFS's estimates of the time burden and costs of preparing, submitting, and presenting the cooperative annual reports. The most significant increase in time and cost estimates was because of comments submitted by the crab Inter-Cooperative Exchange (ICE) on its crab annual cooperative report. ICE estimates it takes 324 hours and costs \$42,200 annually to prepare, submit, and present this report to the Council. ICE's estimates include the work done to maintain the computer systems and programs it established to respond to the Council's concerns about the transfer of crab QS to active participants in the fisheries, including crew members and vessel owners and high lease rates; and the work that is done each year to prepare and present the annual report to the Council describing these efforts and the results. NMFS generally accepts industry estimates of time burden and costs for information collections, and these estimates did not seem unreasonable for the tasks and activities included in the comment. Therefore, NMFS updated the PRA supporting statement accordingly.
- Time estimates for the other cooperative reports range from 5 hours to 40 hours and cost estimates range from about \$440 to \$4,000 annually.

¹⁴⁴ Notices in the Federal Register requesting comments on NMFS information collection requirements specifically request comments on "(a) whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden (including hours and cost) of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology."

- ICE expressed its concern about collecting and reporting lease rate information and explains how it responds to the Council’s request that the crab cooperatives describe measures to address high QS lease rates in their cooperative annual reports. ICE also identified some information it is requested to provide in the cooperative annual reports that is or could be submitted through the BSAI crab rationalization (CR) EDRs. This comment has been forwarded to the NMFS staff involved in the EDR program review. ICE also suggested that the information about crab QS/IFQ transfers that the Council requests in the annual cooperative report could also be collected through the addition of some data fields in the crab QS/IFQ transfer request form submitted to NMFS.
- The Amendment 80 cooperative representative noted that the information NMFS requires in the annual cooperative report for “[a]ctual retained and discarded catch of CQ and GOA sideboard limited fisheries (if applicable) by statistical area and vessel” is already collected by NMFS and available to NMFS. It takes some time to compile this information from NMFS’s website. In addition, in a letter submitted on December 7, 2018, on a different Amendment 80 information collection, the Amendment 80 cooperative representative noted that Amendment 80 annual cooperative report is “exclusively comprised of detailed data information that the agency already receives and reviews through other information collections by the agency. As such, this report is redundant, limited in its utility and creates unnecessary burden” on the Alaska Seafood Cooperative.
- The information about catch by vessel referenced in the Amendment 80 comment is collected by NMFS and available to the Amendment 80 vessel owners and cooperative managers for preparation of the annual cooperative report that is required to be submitted to NMFS. However, NMFS considers this information confidential and, as such, does not release this vessel level information to the public or the Council. NMFS regulations for the Amendment 80 annual cooperative report (50 CFR §679.5(s)(6)) require that the specified information be submitted to the NMFS Regional Administrator, but it does not require that information NMFS considers confidential be provided to the Council or released to the public.

Overall, the PRA should not discourage the Council from making requests for voluntary cooperative information to be included in future cooperative reports. Rather, this guidance advises the Council to pursue voluntary information requests in a deliberative manner, providing clear explanation of the objective of the new information. Council and NMFS staff will track these Council information requests and submit the necessary PRA paperwork to OMB, so a clear explanation for requests is helpful.

Program Review

The PCTC Program would have an indefinite duration as defined under Element 10 (subject to modification as the Council deems necessary). Program reviews are required under the Magnuson-Stevens Act and would be conducted 5 years after implementation and every 7 years thereafter, coinciding with the fishery management plan policy review. Reviews would be designed to attempt to objectively measure the success of the program by addressing issues raised in the amendment’s problem statement and the standards set forth in the Magnuson-Stevens Act, including the impact of this action on harvesting and processing sectors, and fishery dependent communities. After reviewing the impacts of the program, the Council would have the option of taking any necessary and appropriate action to modify or end the program.

Review of a PCTC Program can be important to stakeholders, including the Council, to understanding the program’s success. A review process would allow for a full evaluation of whether the program is serving intended objectives and could provide guidance to the Council for revising the program to mitigate harmful or unexpected consequences. Early review of a program can be used to determine that the

program is functioning as intended. Periodic reviews can be used to determine whether circumstances have changed in a fishery that would justify amending a management program. A well conducted and fully evaluated review often requires extensive staff time and Council time. Reviews are important to ensuring the success of management programs but should be undertaken on a schedule such that the need and utility of the information in the review are likely to outweigh the costs. Note that the program review would not include Economic Data Report (EDR) information since the Council has not requested EDR program for this cooperative program.

Table 2-157 Summary of cooperative annual reporting requirements and voluntary requests of information for AFA, Amendment 80, and CGOA Rockfish, and Crab Rationalization

Cooperative program	Required information	Voluntary information	Deadline	Recipient
AFA Cooperative Report	<p><i>Established in 50 CFR §679.61(f) as well as Section 210(a)(1)(B) of the AFA:</i></p> <ul style="list-style-type: none"> ▪ Allocation of pollock and sideboard species to cooperative ▪ Sub-allocations of pollock and sideboard species on a vessel-by-vessel basis ▪ Retained and discarded catch on an area-by-area and vessel-by-vessel basis ▪ Method used to monitor fisheries ▪ Actions taken by cooperative against members that exceed catch or bycatch ▪ The total weight of pollock landed outside the State of Alaska on a vessel-by-vessel basis ▪ Number of salmon taken, by species and season ▪ Each vessel's number of appearances on the weekly "dirty 20" lists for non-Chinook salmon 	<ul style="list-style-type: none"> ▪ AFA exempt vessel activity in the GOA ▪ Inter-temporal harvest information ▪ Measures taken to reduce bycatch in the BSAI trawl limited access yellowfin sole fishery (Council motion E1, June 12, 2017) ▪ Voluntary presentation at April Council meeting 	April 1 st	NPFMC
Central GOA Rockfish Cooperative Report	As part of Amendment 111 for the GOA FMP, all required cooperative information was removed from regulations.	<ul style="list-style-type: none"> ▪ Inter-temporal harvest information ▪ Use consistent terminology ▪ Voluntary presentation at April Council meeting 	April Council meeting	NPFMC
Amendment 80 Cooperative Report	<p><i>Established in 50 CFR 679.5(s)(6)(i):</i></p> <ul style="list-style-type: none"> ▪ Actual retained and discarded catch of CQ and GOA sideboard limit by area and by vessel ▪ Information on the directed and bycatch species transfers by species, amount, and date ▪ Method used to monitor fisheries ▪ Actions taken by co-ops against members that exceed assigned CQ ▪ The percent of groundfish retained by the cooperative relative to aggregate groundfish retained by all Amendment 80 co-ops ▪ Results from a third-party audit on cooperatives annual groundfish retention 	<ul style="list-style-type: none"> ▪ Catch information from the Northern Bristol Bay Trawl Area ▪ A retrospective indication of Amendment 80 catch capacity ▪ Inter-temporal harvest information ▪ Measures taken to reduce bycatch in the BSAI trawl limited access yellowfin sole fishery (Council motion E1, June 12, 2017) ▪ Voluntary presentation at April Council meeting 	March 1 st	NMFS
Crab Rationalization Cooperative Report¹⁴⁵		<ul style="list-style-type: none"> ▪ Increase availability of QS for transfer to active participants and crew members ▪ Decrease high QS lease rates ▪ Improve low crew compensation ▪ Voluntary presentation at April meeting 	April Council meeting	NPFMC

¹⁴⁵ The Council's motion from April 11, 2014, stated that the "Council's preferred reporting format for crab cooperatives answer the seven questions asked by the Council, as exemplified by the ICE report of 2013. Additionally, the Council encourages all coops' answers to be as quantitative as possible, as well as encourage 100% compliance with filing the reports by March 1 of each year.

2.9.13. Element 13 - Cost recovery

The Council's PA is shown in **bold** below.

A fee, not to exceed 3% of the ex-vessel value, will be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.

Section 304(d)(2) of the Magnuson-Stevens Act authorizes and requires NMFS to recover the actual costs directly related to the management, data collection, and enforcement of any LAPP. The PCTC Program is subject to cost recovery because it is defined as a LAPP under Section 303(A) of the Magnuson-Stevens Act.

Program costs directly related to the management, data collection, and enforcement of this LAPP are the incremental costs that would not have been incurred except for the PCTC Program. Cost recovery fees do not increase agency budgets or expenditures. The fee only offsets funds that would otherwise have not been realized except for management of the PCTC Program. As a result, no budgetary advantage is gained by agencies (NMFS, 2019b).

The PCTC Program would be authorized by section 303A of the MSA. The quota issued to under the PCTC Program would qualify as a permit (per MSA 303A(b)(1)) and would give the permittee exclusive access to those fish while the permit is held. The permit would be an annual allocation for all recipients, except if the Council allocates AIPQ. Should the Council design the program to include fishing quota issued to the operator of an AI Processor that would only be held until March 21, any AIPQ used would be subject to cost recovery. The processor would have an exclusive right to use its AIPQ, meaning it would be subject to cost recovery. After March 21, NMFS would revoke the permit and reallocate the quota share to a Pacific cod trawl CV cooperative, giving another entity exclusive access. The cooperative receiving the CQ would then be subject to cost recovery for any of the reallocated quota used by their members.

Any participant granted a limited access privilege would be responsible for cost recovery fees. Specifically, cost recovery fee regulations would require the person¹⁴⁶ documented on the PCTC Program CQ permit as the person that must comply with the cost recovery requirements. For the PCTC Program, that would be each cooperative's representative. Transfer of, or non-renewal of CQ or QS, does not change the cost recovery requirements for the permit holder. In addition, changes in the membership of the BSAI Pacific cod cooperative does not affect the CQ permit holder's cost recovery fee liability requirements. In the case of the PCTC Program, QS holders may join a cooperative and receive an exclusive harvest privilege, even if those participants choose not to fish in a cooperative. Participants fishing under a cooperative would be subject to cost recovery fees based on their catch as would persons that fish in the limited access fishery based on their CQ assigned to that fishery. Those participants that do not fish under a CQ permit (i.e., those LLP holders that opt-out of the PCTC Program) would not be subject to cost recovery fees.

Fee liability determination.

(i) Each PCTC Program cooperative would be subject to a PCTC Program fee liability for any BSAI Pacific cod debited from its PCTC Program allocation during a calendar year.

(ii) The fee liability assessed to a PCTC Program permit holder would be based on the proportion of the PCTC Program Pacific cod debited from that PCTC Program's Pacific cod fishery allocation relative to all PCTC Program CQ harvested during a calendar year as determined by NMFS.

¹⁴⁶ It is anticipated that cooperatives will be assigned the CQ permit and will be responsible for the cost recovery fee. The person subject to the cost recovery fee will be the cooperative's representative.

(iii) NMFS would provide a fee liability summary letter to each designated representative by December 1 of each year. The summary would explain the PCTC Program fee liability determination including the current fee percentage and details of BSAI Pacific cod pounds debited from the PCTC Program fishery allocation by permit, species, date, and price. NMFS would calculate and announce the PCTC Program fee percentages in a Federal Register notice by December 1 of the year in which the BSAI Pacific cod PCTC Program landings are made.

Description of Options for Determining Standard Price

The following section outlines two potential approaches for calculating the standard prices to support the cost recovery component of the PCTC program. For the PCTC program there are two potential options for generating a standard ex-vessel price (standard price) for Pacific cod: either use existing Pacific cod ex-vessel volume and value reports or use CFEC gross earnings data to generate standard prices using a similar methodology as the AFA cost recovery program.

Pacific Cod Ex-Vessel Volume and Value reports are a component of the Amendment 80 and CDQ groundfish cost recovery programs. These reports are required for any shoreside processors and motherships that receive deliveries of unprocessed Pacific cod harvested in the BSAI. NMFS uses the reported information to calculate separate trawl and fixed gear standard prices for Pacific cod (for example, see Table 1 in the Federal Register notice published December 1, 2020 (85 FR 77180) for the 2020 Pacific cod trawl and fixed gear standard prices). These standard prices are used in the calculation of each program's fee percentage and in determining the cost recovery fee liability of participants in the Amendment 80 and CDQ Programs. The round weight volume and ex-vessel value of Pacific cod caught with trawl and fixed gear in the BSAI, for which an ex-vessel price was paid to a harvesting vessel, and landed between January 1 and October 31 of each year, are reported on the Pacific Cod Ex-vessel Volume and Value Report. Individual reports must be completed for each mothership or shoreside facility through the online system eFISH by November 10 of the same year as the fishing activity. This process allows NMFS to announce the program's fee percentages in the Federal Register and provide fee liability summaries to each designated representative by December 1 of the same year.

The Alaska Commercial Fisheries Entry Commission (CFEC) gross earnings data are used by NMFS to calculate a standard price for Bering Sea pollock under the AFA cost recovery program. The standard price is based on landings harvested in the Bering Sea FMP subarea using trawl gear, and landed shoreside by a valid vessel. This standard price calculation does not include deliveries to motherships. Each year, value information is reported to the ADF&G in the Commercial Operator's Annual Report. This report is compiled in the Gross Earnings database of the CFEC. There is a one-year lag between the most recent gross earnings data and the fishing year to which it is applied (i.e., NMFS would use 2020 data to calculate the 2021 standard price). For each pollock landing made under the AFA program, the landings are multiplied by the appropriate standard prices to arrive at an ex-vessel value. If the Council selects Element 2.5 and only includes the A and B seasons in this program, NMFS would use the same one-year lag of ex-vessel prices due to the timing for this annual fee process since it would be appropriate for the PCTC program where LAPP fishing ends substantially earlier in the year.

Table 2-158 provides a comparison of standard price options calculated from the Pacific cod ex-vessel volume and value report for the Amendment 80 and CDQ Programs and hypothetical standard prices calculated using the CFEC gross earnings data, if that method was used for the PCTC program.

Table 2-158 Standard Price Comparisons

Standard Price Options		
Standard Price Process	Amendment 80 and CDQ groundfish	[similar to] AFA pollock
Data Source	Existing standard prices from annual Pacific Cod Ex-Vessel Volume and Value Report	Hypothetical standard prices calculated from CFEC Gross Earnings data
Source Lag	No	Yes
Source Years	Current fishing year (through Oct. 31)	Previous fishing year
2020	\$0.37	\$0.36
2019	\$0.39	\$0.37
2018	\$0.38	\$0.28
2017	\$0.28	\$0.25
2016	\$0.26	\$0.23

When comparing standard price options from these two data sources, some years are similar (i.e., within \$0.01 of each other), while in other years there is a greater difference. For example, in 2018 there would have been a \$0.10 difference in the standard prices for Amendment 80 and CDQ trawl caught Pacific cod compared to using CFEC gross earnings data. This difference is due to the 1-year lag in the CFEC Gross Earnings data. In the AFA program there are rarely significant fluctuations in the standard price for pollock (see Table 2-159), therefore a one-year lag has not been an issue. If the CFEC Gross Earnings data were to be used for the PCTC program and there was a large increase or decrease in standard price between years (as was between 2017 and 2018), a one-year lag would not provide the most recent price for the fishing year. If the same standard prices were used for the PCTC program as is used for Amendment 80 and CDQ groundfish there would not be a one-year lag in prices.

Table 2-159 Standard Prices NMFS published for AFA Pollock based on CFEC gross earnings data

Year	AFA Pollock Standard Price
2020	\$0.14
2019	\$0.14
2018	\$0.14
2017	\$0.14
2016	\$0.15

Source: CFEC gross earning data provided by NMFS staff

The ex-vessel volume and value report for Pacific cod already exists whereas if standard prices were calculated from CFEC gross earning data, this method would likely require additional staff time spent calculating a Pacific cod trawl standard price in addition to a Bering Sea pollock standard price. Another difference between the two standard price options is that the Amendment 80 and CDQ cost recovery process includes deliveries to motherships while the method using CFEC gross earnings data does not.

The volume and ex-vessel value of deliveries to motherships may be enough in some years to influence the standard price if included in the calculation.

To maintain consistency across Pacific cod trawl standard prices, to prevent a one-year lag, and to reduce staff time spent on calculating standard prices; NMFS recommends that the standard prices for the cost recovery component of the PCTC Program are calculated using existing Pacific cod ex-vessel volume and value reports.

A single PCTC Program fee percentage will be calculated for all cooperatives. NMFS will apply the calculated PCTC Program fee percentages to the ex-vessel value determined for all BSAI Pacific cod landings that are deducted from the cooperative's allocation during the current year. NMFS would calculate PCTC Program direct program costs through an established, systematic accounting system for the Federal fiscal year (FY), which is October 1 through September 30. NMFS tracks internal program costs as well as program costs from the Alaska Fisheries Science Center (AFSC), and the ADF&G.

Examples of the types of tasks that would likely be included under the PCTC Program direct program costs are:

- maintenance of electronic reporting systems, including the catch accounting system (AKRO, ADF&G),
- programming and web design for online applications (AKRO),
- determination of annual cooperative allocations of cooperative fishing quota (CQ) and prohibited species catch (PSC) (AKRO),
- issuance of CQ, responding to questions about CQ applications (AKRO),
- transfers of CQ, responding to questions about transfers (AKRO),
- observer debriefing (AFSC),
- catch monitoring control plan specialist (AKRO),
- monitor cooperative fisheries CQ and PSC, answer questions on cooperative activities, respond to data requests (AKRO),
- determination of standard ex-vessel prices using COAR data (AKRO),
- fee determination and collection process (AKRO),
- cost recovery report (AKRO), and
- analyses and rulemaking activities (AKRO).

Using the actual program costs provided by agencies that incur recoverable costs, a four-step annual process that is undertaken by NMFS:

- 1) Calculate the total incremental costs incurred to manage and enforce the fishery.
- 2) Calculate the total value of the fishery.
- 3) Divide the total costs in step one by the total fishery value in step two to determine the fee percentage.
- 4) Apply the fee percentage to each permit holder's catch and invoice each permit holder.

The fee must be paid for the previous year prior to RAM issuing CQ to a cooperative for the upcoming year. If the fee is not paid the QS holder will forgo their allocation of CQ. Also, NOAA Fisheries cannot assess penalties until at least 30 days after a payment is due.

A summary of the important dates and actions are presented in the table below.

Table 2-160: Important cost recovery fee actions and dates

Action	Timing
Pacific Cod Fishing Occurs	January 20 through end of B or C season (depends on option selected)
Recoverable Costs determined	Based on costs from (October 1 through September 30)
AKRO Calculates and Publishes Standard Exvessel Price and Fee Percentage	On or Before December 1
Fee Submission Deadline	On or Before December 31

If the result of the recoverable costs is a calculated fee greater than 3 percent of the ex-vessel value of the allocated species, the agencies would be required to make up the cost difference from their annual operating budgets. The 3 percent limit was implemented to ensure that the costs passed on to industry were not overly burdensome to industry but required QS holders to incur some of the increased costs to provide the fleet a benefit.

Market and stock uncertainties, as well as variation in management costs, mean that the fees may not precisely cover management costs. TAC announcements for the fisheries are not made until after the fee percentage is set. In addition, ex-vessel prices will fluctuate with market conditions, so the basis that the fee percentage is applied to will change throughout the season. There has been at least one instance in the halibut and sablefish program where the IFQ holders were issued a refund, because it was determined they had paid more than required. The IFQ holders were given the option of applying the overage to the next year's fee or requesting a refund.

Owners of vessels utilized to harvest Pacific cod that are allocated under a LAPP may benefit from reduced harvesting costs, higher ex-vessel prices, greater asset value, and increased safety, relative to management prior to the LAPP being implemented. Monitoring and enforcement of the LAPP often increases costs to agencies tasked with overseeing the harvest. Under the cost recovery program, some of the benefits generated under the LAPP that result in increased revenue will be transferred to management agencies to offset some or all of their increased costs associated with the overseeing the programs. It is assumed that the overall benefits of the LAPP outweigh the additional costs incurred, including the cost recovery fee.

NMFS typically generates a cost recovery report for each program that is subject to cost recovery. In most fisheries NMFS is required to provide the report. For example, regulations at 50 CFR 679.66(g) state that for the AFA program, "each year, NMFS will publish a report describing the AFA Cost Recovery Fee Program." The requirement is often placed in regulation at the request of stakeholders to ensure that NMFS must provide the report.

2.9.14. Element 14 - Gear Conversion

Pacific cod CQ associated with trawl CV LLP licenses may be fished annually by a CV using pot gear. A pot endorsement is not required, but the LLP license used by a CV must have the appropriate area endorsement. Harvest would be deducted from the annual trawl CQ account to which the LLP is assigned and will not affect sector allocations. Cooperative quota harvested by a pot CV is not permanently designated as pot CV quota. If Option 2.5 is selected, gear conversion only applies to the A and B seasons based on the start and end dates for the trawl fishery. Pot CVs harvesting CQ would be subject to 100% coverage and PSC use would be deducted from the PSC allocated to the cooperative. NMFS will develop monitoring and enforcement provisions necessary to track quota, harvest, PSC, and use caps.

The Council has discussed the issue of allowing BSAI Pacific cod CQ to be harvested using pot gear. CQ derived from LLP licenses or processor permits assigned to a PCTC Program cooperative could be harvested by vessels that are listed on the cooperative application with eligible area endorsements for the BS or AI, either trawl or non-trawl gear endorsements, and the correct LOA endorsement for the vessel. The Council clarified in June 2021 that cooperatives shall be formed by holders of qualified LLP licenses

with trawl CV Pacific cod QS and that vessels using trawl or pot gear are eligible to harvest a portion of a cooperative's CQ but must be identified in the annual cooperative application.

Based on the 2021 LLP license file, there are 50 CV LLP licenses that are endorsed to fish in the BS or AI for Pacific cod with pot gear. A total of 47 LLP licenses are only endorsed for the BS, two are endorsed for both the BS and AI, and one is only endorsed in the AI. None of the trawl CV LLP licenses with an AI or BS area endorsement have a pot gear endorsement in the BS or AI. However, because the Council motion does not require the LLP license to have a pot gear endorsement, any LLP license not subject to other use restrictions (e.g., being used on a C/P) could be eligible to be used on a vessel listed in the annual cooperative application, if they were given access to CQ. Table 2-161 shows the number of LLP with gear endorsements by area. Some of these C/P licenses would not be allowed to participate because they are used by AFA C/Ps or Amendment 80 to fish in those fisheries. The reader is reminded that not all AFA derive C/P licenses are used on AFA C/Ps. The information in the table does show that there are hundreds of LLP licenses that could be used by vessels in a PCTC to fish with pot gear.

Table 2-161 Gear endorsements on LLP groundfish licenses with a BS and/or AI area endorsement

LLP Gear Endorsements		Length Class			Total
Aleutian Islands	Bering Sea	<60'	60'-125'	>125'	
None	Non-trawl	1	1	4	6
None	Non-trawl; Trawl			1	1
None	Trawl		2	4	6
Non-trawl; Trawl	None			1	1
Non-trawl; Trawl	Non-trawl; Trawl			4	4
Non-trawl	None			1	1
Non-trawl	Non-trawl		15	46	61
Trawl	Trawl		1	19	20
Not AFA Derived C/P License Total		1	19	80	100
None	Non-trawl; Trawl		1		1
None	Trawl			1	1
Non-trawl; Trawl	Non-trawl; Trawl		1	3	4
Trawl	Trawl			21	21
AFA Derived C/P License Total			2	25	27
C/P Total		1	21	105	127
None	Non-trawl	84	83	30	197
None	Non-trawl; Trawl	2	4		6
None	Trawl		10		10
Non-trawl; Trawl	None		1		1
Non-trawl	None	2	7	1	10
Non-trawl	Non-trawl	21	34		55
Not AFA Derived CV License Total		109	139	31	279
None	Non-trawl		1		1
None	Non-trawl; Trawl		18		18
None	Trawl		35	4	39
Non-trawl; Trawl	Non-trawl; Trawl		7	4	11
Trawl	Trawl		14	17	31
AFA Derived CV License Total			75	25	100
CV Total		109	214	56	379
Grand Total		110	235	161	506

Source: NMFS 2021 groundfish LLP license file.

The number of vessels that will ultimately use the gear conversion provision, if any, is unknown. It is assumed that most trawl operators will continue to harvest their own CQ allocation or lease it to another

trawl vessel operator within the cooperative. Leases to vessels that will deploy pot gear may be most likely to take place when an initial CQ holder:

- also owns a CV that has fished with pot gear,
- has a close association with a vessel operator that uses pot gear,
- derives greater economic benefit from leasing to a vessel using pot gear than vessel operators using trawl gear,
- has a small allocation that will not allow them to make a trawl trip,
- halibut PSC limits are anticipated to constrain the harvest of Pacific cod by the trawl CVs.

Some of the issues described above could be impacted by other elements of this action. For example, if the Council recommends substantial reductions in the halibut or crab PSC limits available to the cooperatives or the Council does not place a minimum amount of qualifying catch a person must have to be issued QS.

The overall timeline for cooperative formation will not change because of the pot gear provision. LLP license holders with PCTC CQ will need to assign their LLP license and vessels to a cooperative by the cooperative application deadline (see Section 2.9.9).

Catch accounting issues

The use of pot gear to harvest BSAI trawl CV Pacific cod quota will not affect sector allocations. Allocations to the BSAI trawl CV Pacific cod sector will be the same regardless of whether the resulting CQ is harvested with trawl gear or pot gear. NMFS will continue to manage the CQ assigned to a PCTC Program cooperative based on the catch of the PCTC Program cooperative listed vessels when their catch is assigned to the PCTC program in the CAS.

For NMFS to correctly account for PCTC Program landings of Pacific cod it will be necessary to establish monitoring requirements that would identify whether a vessel is in a PCTC Program cooperative and what gear is being used. Since gear and management program is always reported under current recordkeeping and reporting regulations, NMFS would use this data to identify which gear was used to harvest Pacific cod and from which apportionment the catch should be deducted. Enforcement personnel would need to have documentation of whether a vessel may legally fish the cooperative allocation with pot gear. That could be provided by the NMFS RAM Program from the list of vessels provided in the cooperative application or through a requirement that the vessel carry and have available for enforcement personnel documents that show their cooperative membership and status.

BSAI Pacific cod catch by a vessel using either trawl or pot gear when fishing in the PCTC Program cooperative would be deducted from that cooperative's allocation. If a vessel is not fishing under the PCTC Program, the vessel would be required to have a pot gear endorsement on their LLP license to fish in a BSAI Pacific cod pot gear fishery that is open to directed fishing. That catch would be deducted from the appropriate pot gear sector apportionment. CVs using trawl gear would be limited to fishing Pacific cod through a cooperative for seasons the PCTC Program authorizes cooperative fishing and the trawl CV limited access fishery for any seasons not authorized for cooperative fishing (see Section 2.9.2.6 for more information on Element 2.5 – Cooperatives for A and B season only).

Since the sector allocations are not altered in this gear conversion element under consideration, the PCTC Program quota cannot be permanently converted to a pot sector allocation. That decision means that gear conversion is an annual decision of how CQ will be used within a cooperative, not a one-time decision to convert PCTC Program QS to be only fished with pot gear in the future. This decision would not limit future Council actions if it develops a BSAI Pacific cod pot LAPP. If a Pacific cod pot gear LAPP is developed, the Council could address limitations on transfers of CQ and/or QS between the PCTC Program cooperative and any pot gear cooperatives that may form after that program is developed.

Cost recovery issues

Cost recovery regulations require that the cost recovery fee is based on the ex-vessel value of the allocated fish harvested under the PCTC Program. Without gear conversion the ex-vessel value information collected would be based on the average (standardized) ex-vessel value of trawl deliveries of Pacific cod. Including pot deliveries in the program means that a standardized price would need to be established for both pot and trawl gear deliveries. This could affect the fee percentage billed to the entire program because this could change the overall value of the fishery since it is assumed that pot gear deliveries of Pacific cod will command a higher ex-vessel value and there would be additional staff and industry time to submit and compile the two prices. If few pot vessels participate in the program, NMFS may be limited by confidentiality regulations on the catch, price, and delivery information that can be reported publicly.

In summary, allowing pot gear to harvest Pacific cod CQ under this program could increase the cost of the program and the fees collected somewhat. The cost of establishing two standardized prices for Pacific cod, one for trawl gear and one for pot will not have a substantial impact on costs but is expected to take some additional agency time. The monitoring, enforcement, and management costs may increase. The costs will be greater if more vessels are allowed to harvest the CQ with pot gear and RAM must approve more CQ transfer applications. The CAS would also need to be modified to determine whether pot gear deliveries are attributed to the appropriate pot gear sector or the trawl CV sector.

PSC issues

Allowing quota holders to utilize pot gear may provide the sector greater flexibility to meet a primary objective of this action, to reduce PSC and to better utilize available PSC. Information presented in Table 2-162, Table 2-163, and Table 2-164 are provided as a summary of PSC in the BSAI Pacific cod fishery by the trawl CV, pot CV $\geq 60'$, and the HAL/pot CV $\leq 60'$ sectors. In addition, Table 2-165 provides annual and average PSC rates by PSC species for non-pelagic trawl and pot gears from 2016 through August 2020. The PSC rate is kilograms of PSC per ton of groundfish in the BSAI Pacific cod target fishery. The information in the tables show that the use of pot gear has historically resulted in much lower halibut PSC in total and as a rate in the BSAI Pacific cod target fishery relative to the trawl CV sector. The tables also show that pot gear has historically resulted in large amounts of crab PSC in total and the crab PSC rate in the BSAI Pacific cod target fishery using pot gear is higher relative to trawl CVs. Based on the information presented in the tables, using pot gear to harvest BSAI Pacific cod CQ could result in lower amounts of halibut PSC but higher amounts of crab PSC relative to trawl gear harvesting the same amount of CQ.

In ongoing research, NOAA Fisheries Bycatch Reduction Engineering Program provided a grant for Alaska Bering Sea Crabbers, Bering Sea Fisheries Research Foundation, and the Natural Resources Consultants with support from several partners to conduct lab and field experiments to develop and test the effectiveness of crab PSC reduction in a variety of pot gear modifications. As indicated in the August 2020 BREP Project Update, preliminary lab results show that the use of sock tunnels combined with slick ramps shows promise in reducing red king crab PSC. Field testing of pot gear modifications for Pacific cod pots will start in September 2020. However, at this time, none of these modifications are required in regulation to legally harvest groundfish.

Table 2-162 Summary of PSC for the trawl CV sector

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	440	596	586	426	286	181	249	238	421	303	281	237	294	221	202	354	136	50
Red King crab (Zone 1)	0	0	0	0	1,165	0	0	1,971	0	0	85	51	547	280	199	466	175	25
C. opilio (COBLZ)	86	59	12	89	349	251	14	42	0	321	2,291	71	5	0		4,144	0	0
C. bairdi (Zone 1)	14,313	33,343	12,107	14,326	25,897	4,729	14,169	8,809	3,146	3,022	4,048	5,195	8,145	7,605	1,465	2,283	1,631	729
C. bairdi (Zone 2)	29,808	23,275	42,387	13,379	8,170	1,586	4,815	3,166	4,343	2,980	4,109	4,650	2,805	1,467	472	314	538	99
Chinook	2,147	1,867	1,421	3,553	1,607	883	1,026	404	752	862	1,244	1,164	1,909	1,547	383	1,113	179	80
Non-chinook	742	556	1,409	718	65	53	17	84	4	138	546	294	136	84	0	155	5	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-163 Summary of PSC for the pot CV ≥ 60' sector

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	2	2	2	0	2	0	1	3	2	1	0	0	1	1	0	1	1	0
Red King crab (Zone 1)	177	1,208	2,022	14,531	13,626	973	749	2,546	1,025	10,729	1,792	5,118	226	6,700	211,105	34,998	10,293	3,364
C. opilio (COBLZ)	1,000	7,377	7,120	229,603	51,793	6,520	17,335	258	1					1,396	25			1
C. bairdi (Zone 1)	11,216	41,413	95,082	279,801	464,354	176,152	141,653	74,604	31,986	37,537	63,512	104,522	30,893	99,996	141,220	24,713	13,941	1,949
C. bairdi (Zone 2)	3,016	22,786	72,059	75,999	279,481	67,310	41,135	23,799	6,479	11,319	8,412	26,727	13,960	23,166	8,026	1,225	614	256
Chinook	0	0	0	8	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	0	0	0	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-164 Summary of PSC for the HAL/pot CVs ≤ 60' sector

Species	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Halibut mortality (mt)	2	3	2	2	4	2	2	2	2	4	7	3	1	1	5	2	1	0
Red King crab (Zone 1)	4	60	13	31	274	13	55	22	109	2,504	5,269	4,062	138	7,507	19,506	5,174	3,502	4,743
C. opilio (COBLZ)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	47	0
C. bairdi (Zone 1)	228	7,611	132	456	10,921	2,544	8,765	1,576	1,066	5,201	23,497	59,113	34,444	56,930	30,126	41,110	21,501	6,527
C. bairdi (Zone 2)	0	115	9,555	4,926	52,470	11,039	3,967	13,902	4,923	8,004	29,843	28,469	10,794	23,470	8,242	6,485	3,825	1,175
Chinook	0	0	0	2	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	1	2	0	0	0	0	0	1	0

Source: AKFIN June 2021; Table originates from file Sector_PSC(6-29-21)2

Table 2-165 Historical PSC rate and average PSC rate of PSC in the BSAI Pacific cod target fishery for non-pelagic trawl gear and pot gear from 2016 through 2020

PSC species	Gear type	2016	2017	2018	2019	2020	2016-2020 average PSC rate
Halibut (KG per MT)	Non-pelagic trawl	6.61	5.26	5.08	10.52	5.16	6.48
	Pot	0.08	0.04	0.02	0.08	0.08	0.06
Red king crab (Zone 1)	Non-pelagic trawl	0.07	0.23	0.08	0.16	0.31	0.16
	Pot	0.72	0.57	12.15	1.78	0.31	3.81
C. opilio (COBLZ)	Non-pelagic trawl	0.07	0.05	0.95	0.22	0.31	0.34
	Pot	0.00	0.94	0.02	0.00	0.33	0.39
C. bairdi (Zone 1)	Non-pelagic trawl	0.12	0.38	0.06	0.03	0.05	0.16
	Pot	3.23	2.49	3.14	0.62	1.20	2.20
C. bairdi (Zone 2)	Non-pelagic trawl	0.12	0.23	0.12	0.09	0.15	0.15
	Pot	1.45	2.45	1.68	0.60	0.73	1.52

Source: AKFIN Aug 2020; Data originates from PSC_Rates(7-8-21)

Rate is kilograms of mortality per ton of groundfish

Discard mortality rates of halibut by gear type are presented in the annual specifications 85 FR 13570 (March 9, 2020).

Table 2-166 shows the halibut DMR for the 2020 fishing year. The DMR for non-pelagic trawl gear is about twice as large as the pot gear rate and the pelagic trawl DMR for halibut is 100 percent. Pot gear DMR for halibut is set at 27 percent for the 2020 and 2021 fishing years.

Table 2-166 2020 and 2021 Pacific Halibut Discard Mortality Rates (DMR) for the BSAI

Gear	Sector	Halibut discard mortality rate (percent)
Pelagic trawl	All	100
Non-pelagic trawl	Mothership and catcher/processor	75
Non-pelagic trawl	Catcher vessel	58
HAL	Catcher/processor	9
HAL	Catcher vessel	9
Pot	All	27

Source: 85 FR 13570 (09 March 2020)

As part of the gear conversion option, the Council clarified that crab or halibut PSC usage by cooperatives using pot gear to harvest Pacific cod CQ would be deducted from the cooperative’s PSC limit. In other words, the CVs using pot gear would not be exempt from halibut or crab PSC cooperative/sector limits while fishing for CQ in the PCTC Program. See Section 2.9.3 for more details on halibut and crab PSC apportionments to the trawl CV sector and PSC allocations to cooperatives.

Monitoring issues

The Council in June 2021 clarified vessels opting for Pacific cod pot trips would have the same monitoring requirements as trawl CVs fishing under this program, including 100 percent observer coverage to accurately account for quota harvest.

See Section 2.9.11 for more detailed information on monitoring and enforcement for the proposed PCTC Program.

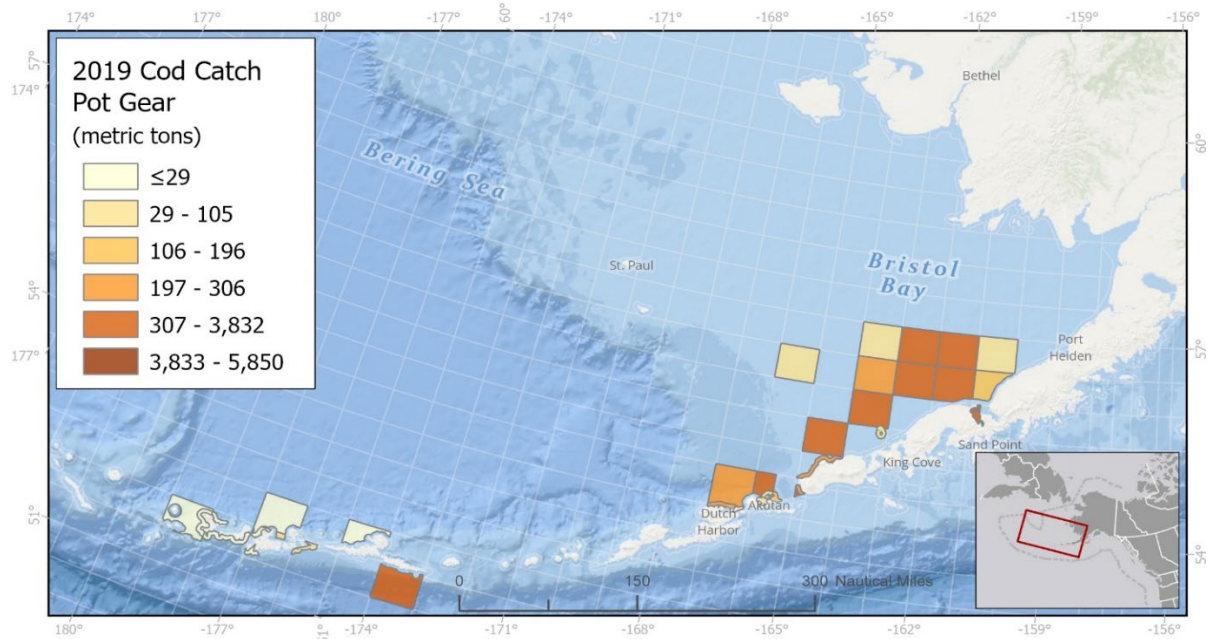
Location of fishing and gear interactions

Since 2004, approximately 60 trawl CVs named on PCTC Program qualified LLP licenses have used pot gear for use in crab fisheries (although this number of trawl CVs has declined to 15 in the last 10 years). As discussed previously, none of the trawl CV LLP licenses with an AI or BS area endorsement have a pot gear endorsement in the BS or AI, and a groundfish pot endorsement is not necessary to fish in the crab fisheries. Nevertheless, it is possible that many of the 60 trawl vessels named on PCTC Program qualified LLP licenses could utilize pot gear depending on the conditions. This level of pot fishing may go beyond the Council’s intent of Element 14 and would likely cause gear interactions.

Gear conversion could have implications on where fishing occurs in terms of State or Federal waters, including potential interactions with vessels currently utilizing pot and HAL gear. Gear interactions may be greatest (based on past years distribution of Pacific cod) in the BS area North of Unimak Island where vessels focus their fishing effort when Pacific cod congregate. Changing weather conditions may impact where Pacific cod congregate in the future and as a result where gear interactions are most likely to take place.

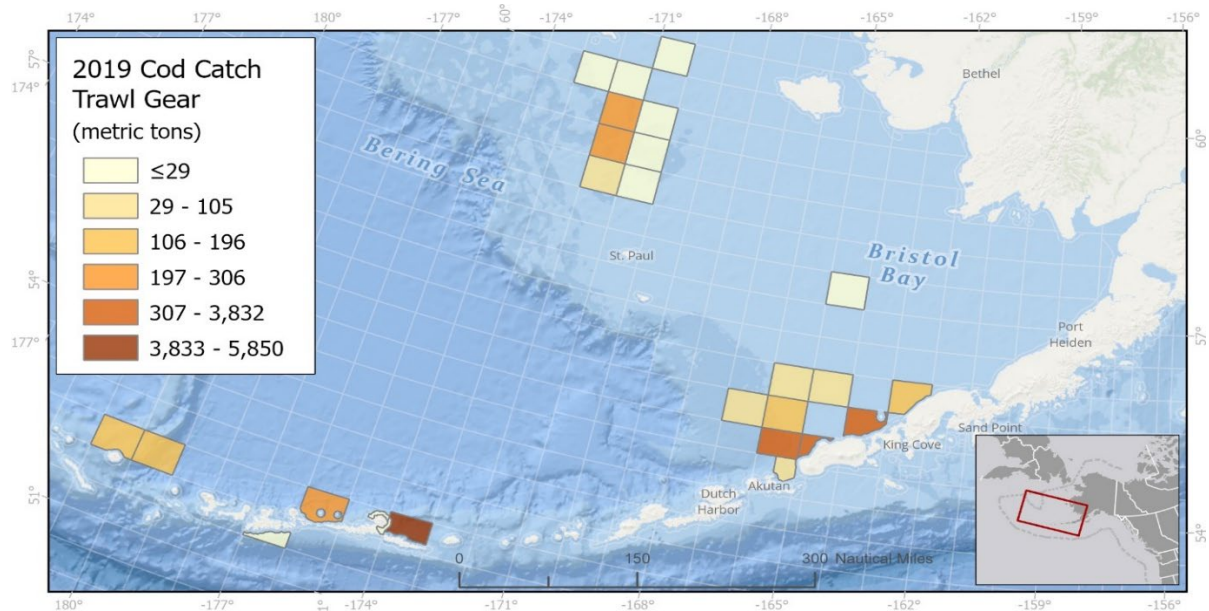
Figure 2-19 shows the areas where pot gear was used to harvest BSAI Pacific cod in 2019, while Figure 2-20 shows the same information for trawl gear. The areas where trawl and pot gear catch overall lap North of Unimak Island are where gear interactions are expected to most likely occur.

Figure 2-19 Catch by location for the 2019 Pacific cod pot fishery in the Bering Sea and Aleutian Islands



Source: AKFIN, September 2020

Figure 2-20 Catch by location for the 2019 Pacific cod trawl fishery in the Bering Sea and Aleutian Islands



Source: AKFIN, September 2020

Value of the fishery

Allowing vessels to harvest the PCTC Program CQ with pot gear is expected to generate a higher ex-vessel price. During 2018, Pacific cod harvested with pot gear generated a nominal ex-vessel price of

\$0.412 per pound versus \$0.342 per pound for trawl caught Pacific cod. That is about a 20 percent premium for pot gear caught Pacific cod compare to trawl caught Pacific cod. While the ex-vessel price of Pacific cod is higher when harvested with pot gear, primarily because of fish quality, information to determine the relative profitability of the two fisheries is not available. Costs of production on a per pound basis are often stated to be lower in the trawl fishery compared to non-trawl fisheries, but comparable quantitative production costs are not available.

Catch composition

The species composition of landings in the directed Pacific cod fishery differs between vessels using pot gear and vessels using trawl gear. Pot gear tends to be more selective with the groundfish catch being almost all Pacific cod. The discard mortality rates of some species taken as incidental catch in the pot fishery is also lower than in the trawl fishery. Table 2-167 provides catch composition for pot and trawl gear during the 2015 through 2019 fishing year for the BSAI Pacific cod target fishery. For both gears, Pacific cod made up over 90 percent of the target Pacific cod fishery. Pot gear also had 1.96 percent of other groundfish which consisted mostly of octopus and sculpin and 0.75 percent of flatfish which consisted of mostly yellowfin sole. In addition to Pacific cod, trawl gear also had 2.5 percent of flatfish which consisted mostly of rock sole, skates, and yellowfin sole, 2.2 percent of pollock, and 1.4 percent of other groundfish.

Table 2-167 Catch composition in the BSAI Pacific cod target fishery (mt) from 2015 through 2019 for pot gear and trawl gear

Species	Pot gear		Trawl gear	
	Total catch from 2015-2019	Percent of total from 2015-2019	Total catch from 2015-2019	Percent of total from 2015-2019
Atka mackerel	40	0.03%	254	0.14%
Flatfish	916	0.75%	4,609	2.51%
Other groundfish	2,380	1.96%	2,482	1.35%
Pacific cod	117,969	97.17%	172,132	93.78%
Pollock	56	0.05%	3,958	2.16%
Rockfish	19	0.02%	109	0.06%
Sablefish	23	0.02%	5	0.00%
Total	121,402	100.00%	183,549	100.00%

Source: AKFIN Sept 2020; Data originates from CV_PCOD_TGT_CatchComposition(9-2-20)

Vessels that may be used

PCTC Program CQ may only be harvested by CVs deploying trawl or pot gear. This will ensure that the fishery is not harvested by pot C/Ps when it has been designated as a CV fishery at the time of initial allocation. CVs deploying pot gear that are less than 60' LOA or greater than or equal to 60' LOA and listed in the annual cooperative application are eligible to harvest CQ, even though those two classes of pot gear vessels fish off different allocations in their directed Pacific cod fishery. PCTC Program vessels may not harvest halibut or sablefish using their IFQ permits on the same trip when fishing in the PCTC program.

The Council clarified that the fishery would operate under trawl season dates meaning that any use of PCTC Program CQ would be allowed starting January 20th of each year. If the pot vessels had been allowed to start fishing January 1 with pot gear, this could impact the dates the cooperative allocations must be filed and processed to ensure that allocations to cooperatives are completed prior to the January 1 start date of the pot fishery as opposed to the January 20 start date of the trawl fishery. Keeping the trawl dates also prevents increased effort early in January by vessels that do not have a pot gear endorsement to fish Pacific cod in the BSAI.

2.10. Expected Effects of the Alternatives

This section describes the economic and distributional effects that might be expected to occur because of implementation of a PCTC program under the proposed action alternatives (or in the absence of such a program under the no action alternative). The intent of this action is to improve the prosecution of the fishery through promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, providing for the sustained participation of fishery dependent communities, and insuring the sustainability and viability of the resource.

Assessing the effects of the alternatives, elements, and options involves some degree of speculation. In general, the effects arise from the actions of individual participants in the fisheries, under the incentives created by different alternatives and options. Predicting these individual actions and their effects is constrained by incomplete information concerning the fisheries, including the absence of complete economic information and well-tested models of behavior under different institutional structures. In addition, exogenous factors, such as stock fluctuations, market dynamics, and macro conditions in the global economy, will influence the response of the participants under each of the alternatives, elements, and options.

This section provides the analysis of Alternative 1 (status quo), and the three action alternatives. Two alternatives (2a and 2b) were developed early in the process for purposes of analysis and have modified slightly to reflect changes in elements and options and direction from the Council (see Section 8.1). The third alternative is the Council developed PA, which was developed during its October 2021 meeting. The combination of these action alternatives in addition to Alternative 1 represent a reasonable range of alternatives to assess the impacts of the proposed action. Table 2-1 provides a summary of the action alternatives.

Each of the action alternatives in the analysis address the problem statement by providing an allocation of BSAI Pacific cod to the trawl CV sector and allow for the sector to form cooperatives, which are expected to facilitate a more reasonably paced fishery that would lengthen the fishing seasons, resulting in an increased ability to maximize the value of the fishery and reduced the impacts of a compressed fishery on all fishery participants. The action alternatives would also likely enable increased use of a range of fishing practices to minimize bycatch and further ensure the sustained viability of the fishery.

2.10.1. Effects on Harvester Participation and Fishing Practices

2.10.1.1. Alternative 1: Status quo (No Action)

Harvest participation and fishing practices in the BSAI Pacific cod fishery for the trawl CV sector under Alternative 1 are likely to be similar to current participation and fishing practices. The trawl CV sector includes all trawl CVs assigned an LLP license with an endorsement to fish with trawl gear in the BS and/or AI. The trawl CV sector includes 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. 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. 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 LOA but occasionally vessels less than 60 ft LOA participate in the sector. The non-AFA trawl CVs typically rely on BSAI Pacific cod, the GOA groundfish fishery, halibut IFQ using longline gear, and State of Alaska commercial salmon seine fisheries. For more general information concerning the trawl CV sector, see Section 2.8.7.1.

Table 2-168 shows annual targeted Pacific cod catch by LLP licenses associated with AFA and non-AFA vessels from 2004 through April 10, 2020. The table also provides the annual percent of BSAI Pacific cod landed, number of LLP licenses, number of vessels, and number of processing plants. From 2004 through

April 10, 2020, the non-AFA vessels harvested on average 16.2 percent of the BSAI Pacific cod from the trawl CV sector allocation, while the AFA vessels harvested on average 83.8 percent. Prior to 2008, the non-AFA CVs harvested 10 percent or less of the trawl CV allocation, but since 2008 these vessels have harvested nearly 15 percent or greater of the sector's catch. During this same period, a total of 19 LLP licenses were used on 35 non-AFA vessels with an annual range of between 6 and 13 LLP licenses. In total, 110 LLP licenses were used on 115 AFA vessels over that same period and the annual number used ranged from a low of 38 in 2010 to high of 65 in 2004. Variation in the number of vessels and LLP licenses that were active in the Pacific cod fishery during a year was driven by many factors including ex-vessel Pacific cod prices, TACs, other fishing opportunities, and various management measures considered to limit participation in the BSAI Pacific cod fishery.

As noted in Table 2-168, during 2004 through April 10, 2020, a total of 35 processors received targeted BSAI Pacific cod landings from both non-AFA CVs and AFA CVs. As noted in the Table 2-169, the total number of processors has consisted of 14 shoreside processors, 11 C/Ps acting as motherships, and 10 floaters and true motherships during the 2004 through April 2020 period.

Starting in 2020, only two C/Ps are eligible to operate as motherships receiving and processing Pacific cod from CVs directed fishing in the BSAI non-Community Development Quota Pacific cod trawl fishery under BSAI FMP Amendment 120 (84 FR 70064, December 20, 2019). One is owned by a firm that is a part of the AFA C/P cooperative and the other is owned by a firm that is part of the Amendment 80 cooperative program. One of the C/Ps typically took deliveries from CVs that were owned by the firm. The other contracted with CVs to deliver Pacific cod.

Table 2-169 shows the annual amount of BSAI Pacific cod reported in the CAS data as being caught in the Pacific cod target fishery or other target fisheries and the total amount of Pacific cod harvested that is deducted from the BSAI trawl CV sector allocation. From 2004 through 2020, incidental catch of Pacific cod ranged from about 7.5 percent to about 16.9 percent of the total Pacific cod catch, with an average of 11.8 percent. The incidental catch of Pacific cod average was 4,350 mt, with a range of 2,815 mt to 6,144 mt annually. Table 2-170 provides incidental Pacific cod by BSAI target fishery for the trawl CV sector. As noted in the table, the target pollock fishery has the highest amount of Pacific cod ICA followed by the yellowfin sole target fishery.

The trawl CV sector participates in the AI Pacific cod fishery on a regular basis. The trawl CV sector allocation may be harvested in either the BS or the AI under status quo, which allows flexibility for the sector. 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. Table 2-171 provides harvests of targeted BSAI Pacific cod in both BS and AI from 2004 through April 10, 2020. 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 2004 through April 10, 2020, that harvested targeted AI Pacific cod fishery has also declined. The largest number of trawl CVs harvesting AI Pacific cod was 33 in 2007, while the lowest number of trawl CVs was zero in 2020. The highest amount of Pacific cod harvested in the AI was 15,057 mt in 2009, while the lowest amount of AI Pacific cod was 0 mt in 2020. Although fishing was open in both the AI and the BS, in 2020, no harvest occurred in the AI since trawl CV harvesters focused all other their catch in the BS Pacific cod fishery.

Table 2-171 also provides the number of processors by type that targeted BS and AI Pacific cod. In total, from 2004 through April 2020 there were 10 shoreside processors, four C/Ps acting as motherships, and five floaters and true motherships that targeted AI Pacific cod. During that same period, 10 shoreside processors, 11 C/Ps acting as motherships, and 9 floaters and true motherships targeted BS Pacific cod.

Table 2-168 Targeted trawl CV sector BSAI Pacific cod landings 2004 through April 10, 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total ¹
	Non-AFA																	
Landed catch (mt)	3,783	2,086	1,991	2,288	4,079	4,488	5,029	7,695	7,151	6,832	6,136	7,916	6,810	6,642	8,057	4,559	3,613	89,946
Landed catch (%)	10.2%	6.7%	6.7%	8.1%	14.8%	17.5%	20.2%	22.2%	17.9%	17.5%	15.8%	25.1%	16.7%	17.7%	23.9%	17.3%	16.8%	16.2%
LLP licenses	7	7	7	10	10	7	8	12	11	11	6	8	9	12	14	13	9	19
Vessels	16	11	9	15	13	14	11	12	11	11	6	8	9	12	17	14	9	35
	AFA																	
Landed catch (mt)	33,424	28,834	27,585	26,109	23,449	21,221	19,855	26,905	32,768	32,147	32,606	23,667	34,036	30,801	25,651	21,770	17,876	464,967
Landed catch (%)	89.8%	93.3%	93.3%	91.9%	85.2%	82.5%	79.8%	77.8%	82.1%	82.5%	84.2%	74.9%	83.3%	82.3%	76.1%	82.7%	83.2%	83.8%
LLP licenses	65	57	53	52	55	42	38	39	50	45	48	46	53	53	53	56	47	95
Vessels	62	53	48	49	52	40	37	38	44	42	42	40	47	49	48	47	42	80
	Total																	
Landed catch (mt)	37,207	30,920	29,576	28,397	27,528	25,709	24,885	34,599	39,919	38,979	38,743	31,583	40,846	37,443	33,709	26,329	21,489	554,913
LLP licenses	72	64	59	61	64	49	46	51	60	56	54	54	62	65	67	69	56	110
Vessels	78	64	57	64	65	54	48	50	55	53	48	48	56	61	65	61	51	115
Processors	14	12	11	12	14	10	10	13	11	13	10	11	17	17	19	18	**	35

Source: TCCP_Overview (6-4-20)(1), BSAI_TRW_LLP_PCODLANDINGS2(4-10-20) Workbook, and for processor count BSAI_PCOD_LAPP_Processors(4-9-20)

** Denotes data by processor type was not yet available.

¹Given 2020 processor type data is not yet available, aggregated counts by processor type does not equal total processor count.

Table 2-169 Targeted and incidental catch of Pacific cod in BSAI by trawl CV sector 2004 through April 10, 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total ¹
	Target																	
Landed catch (mt)	37,207	30,920	32,440	29,150	28,090	25,904	25,283	34,622	40,797	38,979	39,093	31,741	41,716	37,443	33,709	26,329	21,489	554,913
Landed catch (%)	91.2%	86.8%	89.5%	91.2%	89.6%	87.6%	88.9%	87.1%	86.3%	89.4%	92.5%	84.3%	91.2%	85.9%	89.4%	83.6%	83.1%	88.2%
LLP licenses	72	64	59	61	64	49	46	51	60	56	54	54	62	65	67	69	56	110
Vessels	78	64	57	64	65	54	48	50	55	53	48	48	56	61	65	61	51	115
Processors	14	12	11	12	14	10	10	13	11	13	10	11	17	17	19	18	**	35
Shoreside	7	7	7	8	8	6	5	7	6	8	6	6	6	5	7	7	**	14
C/P acting as mothership	3	1	1	2	3	2	2	3	3	2	2	2	7	8	9	8	**	11
Floaters and true motherships	4	4	3	2	3	2	3	3	2	3	2	2	4	3	3	3	**	10
	Incidental																	
Landed catch (mt)	3,610	4,705	3,791	2,815	3,255	3,663	3,158	5,124	6,453	4,630	3,180	5,913	4,005	6,144	3,980	5,149	4,373	73,948
Landed catch (%)	8.8%	13.2%	10.5%	8.8%	10.4%	12.4%	11.1%	12.9%	13.7%	10.6%	7.5%	15.7%	8.8%	14.1%	10.6%	16.4%	16.9%	11.8%
LLP licenses	95	96	91	96	95	94	95	93	96	94	97	98	100	98	99	97	93	116
Vessels	92	91	87	91	91	90	91	89	92	88	90	90	92	92	90	88	85	108
Processors	14	12	13	12	14	11	13	11	11	11	11	16	18	16	19	21	**	24
Shoreside	6	6	7	7	7	6	5	6	6	6	5	6	6	5	6	6	**	7
C/P acting as mothership	0	1	0	1	1	1	2	1	1	1	2	5	8	8	8	9	**	11
Floaters and true motherships	5	3	3	2	2	2	4	2	2	2	2	2	2	2	3	2	**	7
	Total																	
Landed catch (mt)	40,817	35,625	36,231	31,965	31,346	29,568	28,440	39,746	47,250	43,609	42,273	37,654	45,721	43,587	37,689	31,479	25,861	628,861
LLP licenses	111	111	108	112	111	109	105	108	111	108	105	107	109	108	111	108	100	129
Vessels	115	109	104	112	108	110	103	104	105	101	98	99	100	102	105	100	92	136
Processors	20	18	16	16	20	15	14	17	16	16	15	20	22	21	23	24	**	35
Shoreside	7	7	7	8	8	7	6	7	7	8	7	6	7	5	7	7	**	14
C/P acting as mothership	3	1	1	2	3	2	2	3	3	2	2	6	8	9	10	9	**	11
Floaters and true motherships	7	7	5	4	5	4	4	5	4	4	4	4	5	5	4	4	**	10

Source: TCCP_Overview (6-4-20)(1), BSAI_TRW_LLP_PCODLANDINGS2(4-10-20) Workbook, and for processor count BSAI_PCOD_LAPP_Processors(4-9-20)

** Denotes data by processor type was not yet available.

¹Given 2020 processor type data is not yet available, aggregated counts by processor type does not equal total processor count.

Table 2-170 Historical incidental catch of BSAI Pacific cod for trawl CVs by target fishery from 2004 through 2020

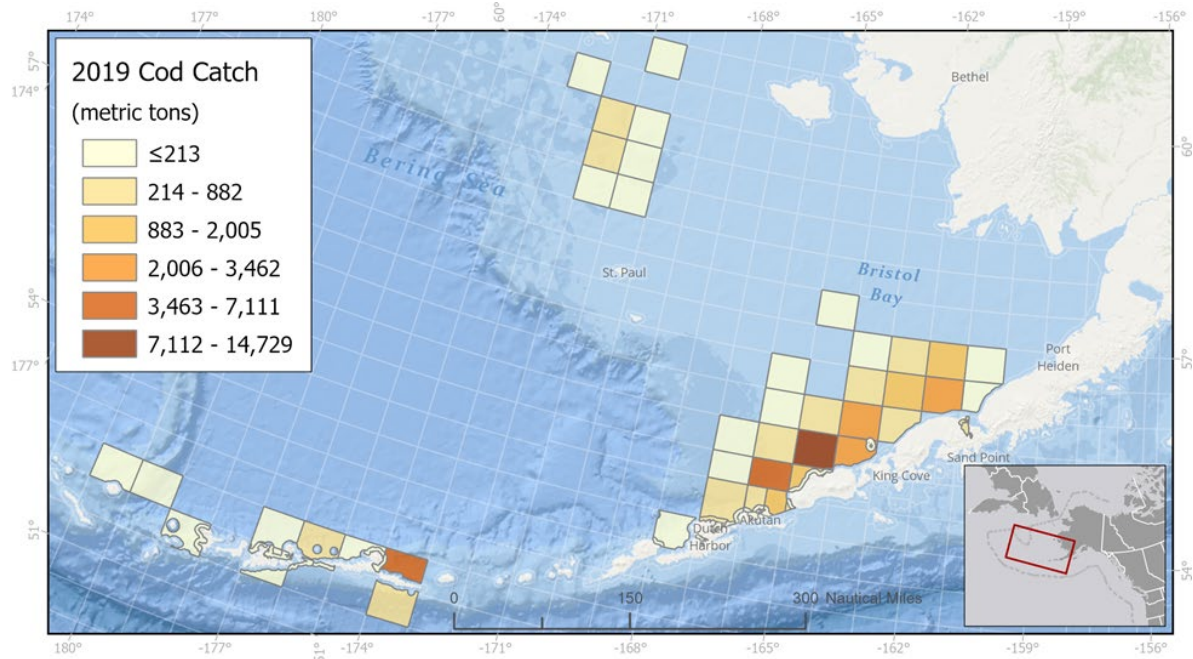
Year	Atka Mackerel		Flathead Sole		Pollock		Rock Sole		Rockfish		Yellowfin Sole		All other species		Total	
	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels	Catch (mt)	Vessels
2004					3,595	92			*	1	*	1			3,610	92
2005					4,689	90	*	1			*	1			4,705	91
2006					3,791	87									3,791	87
2007	*	1			2,733	89	*	1	*	2			*	1	2,815	91
2008	*	1			3,122	89			*	2	*	1			3,255	91
2009	*	1			3,361	88	*	1	*	2	*	1			3,663	90
2010	*	1			3,045	89			*	2					3,158	91
2011	223	5			4,042	86	*	1	*	2	*	2			5,124	89
2012	145	3	*	1	4,939	90	52	3	*	2	1,305	3	*	1	6,453	92
2013	36	3			3,129	87	*	1	*	1	1,419	5	*	2	4,630	88
2014	32	3	*	1	2,248	87	59	3	36	3	793	3			3,180	90
2015	146	5			4,780	86	74	3	11	3	902	6			5,913	90
2016	199	4			2,531	88	506	8	52	3	716	9			4,005	93
2017	300	4	*	1	3,895	86	182	6	48	3	1,702	8	*	2	6,144	92
2018	512	4	82	4	2,332	83	75	5	*	2	864	9	16	4	3,980	90
2019	155	4	*	1	3,256	83	115	8	292	3	1,306	8			5,185	88
2020	353	3	*	2	5,049	87	273	6	117	3	1,427	8	*	2	7,243	91
Total	2,358	8	182	6	60,537	104	1,431	15	807	6	11,503	17			76,854	109

Source: Incidental_cod(4-7-21)

* denotes confidential data

Figure 2-21 shows catch of BSAI Pacific cod by statistical area during the 2019 fishing season. As can be seen in the figure, catch of trawl CV Pacific cod was concentrated most heavily just north of Unimak Island. Table 2-171 provides annual trawl CV harvest of targeted Pacific cod in the BS and AI from 2004 through April 2020. Overall, the AI accounted for 24 percent of the combined harvest of targeted Pacific cod with 32 LLP licenses and 57 vessels, while the BS accounted for the remaining 76 percent with 105 LLP licenses and 107 vessels. In total, there were 19 processors that received deliveries of targeted AI Pacific cod from trawl CVs of which 10 were shoreside and nine non-shoreside. In the BS, there were a total of 30 processors that received targeted BS Pacific cod from trawl CVs of which 10 were shoreside and 20 were non-shoreside.

Figure 2-21 Catch of BSAI Pacific cod by statistical area for the 2019 fishing season



Sections 2.8.1 shows that the management of BSAI Pacific cod fishery is complicated by the structure of the fishery and separate BSAI Pacific cod allocations for nine sectors. The allocations to these nine sectors are calculated using the combined BS and AI ITACs with all sectors subject ITAC limits established for the BS and AI. This management structure and combined ITAC for sector allocations could result in the BS ITAC being harvested and sectors with any remaining Pacific cod available being required to harvest those fish in the AI. During years when the AI set-aside was in place, it forced the trawl CV sector to harvest up to 5,000 mt of their sector allocation in the AI. This created inefficiencies for components of the sector that would prefer to harvest or process fish in the BS. It benefited the AI shoreplant that was processing Pacific cod harvested from the AI and the small group of CVs that had a market to deliver Pacific cod to that plant. It also meant that the trawl CV sector would harvest less of the BS ITAC, leaving that fishery open longer and available to be fished by the other eight Pacific cod sectors. Because the AI set-aside is no longer in place, the trawl CV sector may now harvest any amount of their sector apportionment from the BS, as long as the BS ITAC has not been fully taken. When combined with BS Pacific cod catch from other sectors, increasing the trawl CV catch from the BS could result in the BS ITAC closing before all sectors have harvested their allocations, which would force those sectors to fish in the AI or not fish at all. Depending on the processors operating in the AI, small CVs may need to find a market with a floating processor because of safety reasons or technical efficiency losses associated with delivering to other GOA or BS shoreplants.

Allocations of Pacific cod to the non-CDQ fishery sectors are apportioned by seasons. The trawl CV sector allocation is apportioned among three seasons.

- A season is January 20 – April 1 and is allocated 74 percent of the sector allocation
- B season is April 1 – June 10 and is allocated 11 percent of the sector allocation
- C season is June 10 – November 1 and is allocated 15 percent of the sector allocation

Table 2-172 shows that about 89 percent of the BSAI Pacific cod catch for the trawl CV sector was taken in the A season from 2004 through April 10, 2020. On an annual basis, the catch ranged from 100 percent in 2020 to about 82 percent in 2018, which indicates that majority of the catch is always in the A season. Catch in the B season averages 9.6 percent of the BSAI Pacific cod catch from 2004 through April 10, 2000, while catch in the C season averaged 1.9 percent during the same period.

Also shown in the Table 2-172 are the number of LLP licenses and trawl CVs participated in the target BSAI Pacific cod on annual basis. During the 2004 through April 10, 2020, 108 LLP licenses and 112 trawl CVs targeted BSAI Pacific cod in the A season, 91 LLP licenses and 93 trawl CVs in the B season targeted BSAI Pacific cod, and 35 LLP license and 32 trawl CVs targeted BSAI Pacific cod in the C season.

Table 2-172 also includes the number of processors that received targeted BSAI Pacific cod on annual basis from 2004 through April 10, 2020. Specifically, the A season had 32 participating processors, the B season had 24 participating processors, and the C season had 15 participating processors. All seasons combined, the total number of processors receiving targeted BSAI Pacific cod was 35.

The length of the BSAI Pacific cod fishery for the trawl CV sector has compressed in recent years, with 2021 being an exception. Table 2-173 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 2020 BS fishery closed to directed fishing on February 16th. Although fishing was open in both the AI and the BS, in 2020, no harvest occurred in the AI. After two days of fishing, the fleet organized a voluntary stand down due to high halibut PSC rates. No fishing occurred again until February 9. Although the fishery was open for 28 days, fishing only occurred for 10 days due to the voluntary stand down for halibut PSC. After the completion of A season, it was determined there was not enough TAC available to prosecute a B season fishery and the fishery did not open. Typically, the B season is only open from one week to a few days in recent years.

The 2021 BSAI trawl CV Pacific cod A season opened by regulation on January 20 at noon. To avoid halibut PSC early in the season, the fleet organized a voluntary stand down until February 12. Before February 12, several processing plants that take deliveries of Pacific cod had to shut down for a period due to COVID-19 outbreaks. This raised concerns among the fleet that some processing plants might still be closed or unexpectedly have to close once the trawl CV fleet started directed fishing for Pacific cod after the February 12 stand down. Should this happen, vessels who had planned to fish may be left without a processor to take their deliveries. This could either prevent some trawl CVs from fishing completely or overextend processors who remained open. Because of this uncertainty, the industry organized a voluntary catch share agreement. A voluntary catch share agreement assured participants that they would be able to participate even if their processor was closed for a short period of time due to a COVID-19 outbreak or if the vessel experienced an outbreak requiring them to unexpectedly have to stay at the dock. Industry also reported that the voluntary catch share allowed for BSAI trawl CV Pacific cod

deliveries to occur throughout the season instead of within the short timeframe the fishery was projected to be open in the A season without a catch share.

Trawl CVs started fishing under the voluntary catch share on February 12. The A season TAC was 18,281 mt and 51 vessels participated in directed fishing for Pacific cod. Trawl CVs fished in both the AI and BS, but the data is confidential by area. Although the fleet was operating under a voluntary catch share, NMFS retained the ability to close the fishery inseason if the directed fishing allowance was reached. However, NMFS did not need to issue an inseason closure, and some trawl CVs were still fishing under the catch share agreement up to the regulatory closure of April 1. A total of 16,733 mt was taken in the A season. It should be noted that the voluntary catch share directed fishing allowance was fully harvested and the 1,548 mt that was remaining was part of a set aside set by NMFS to allow for incidental catch of Pacific cod in other CV trawl fisheries. Some of the remaining incidental catch amount set aside was due to less effort in the Bering Sea AFA pollock fishery before April 1 and due to processing plant closures and less effort in the BSAI TLAS yellowfin sole fishery. For the B season fishery, a voluntary catch share agreement was also utilized.

Table 2-171 Trawl CV sector harvests of targeted BSAI Pacific cod in the BS and AI 2004 through April 10, 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total ¹
AI																		
Landed catch (mt)	*	7,973	9,771	13,607	14,496	15,057	12,665	7,535	6,964	5,120	4,554	*	5,811	2,539	5,254	6,474	0	133,994
Landed catch (%)	*	25.8%	30.1%	46.7%	51.6%	58.1%	50.1%	21.8%	17.1%	13.1%	11.6%	*	13.9%	6.8%	15.6%	24.6%	0.0%	24.1%
LLP licenses	15	13	16	22	22	18	20	14	15	7	6	4	10	5	11	11	0	32
Vessels	21	16	25	33	31	26	24	14	17	7	6	4	11	5	15	12	0	57
Processors	6	5	5	9	9	6	6	4	6	3	3	2	3	3	5	4	**	19
Shoreside	2	2	2	5	3	2	2	0	2	1	1	0	0	0	3	2	**	10
C/P acting as mothership	2	1	1	2	3	2	2	3	3	1	1	2	3	3	1	1	**	4
Floaters and true motherships	2	2	2	2	3	2	2	1	1	1	1	0	0	0	1	1	**	5
BS																		
Landed catch (mt)	23,768	22,947	22,670	15,544	13,595	10,847	12,617	27,088	33,833	33,859	34,539	29,005	35,906	34,904	28,454	19,855	21,489	420,919
Landed catch (%)	63.9%	74.2%	69.9%	53.3%	48.4%	41.9%	49.9%	78.2%	82.9%	86.9%	88.4%	91.4%	86.1%	93.2%	84.4%	75.4%	100.0%	75.9%
LLP licenses	63	60	54	51	49	34	30	48	55	52	52	54	57	63	63	64	56	107
Vessels	62	56	50	49	47	32	29	47	51	50	46	48	52	59	58	56	51	105
Processors	10	10	10	9	11	7	6	11	9	11	9	11	17	17	18	17	**	30
Shoreside	6	6	6	7	7	5	4	7	5	7	5	6	6	5	6	6	**	10
C/P acting as mothership	1	1	1	0	1	0	0	1	2	1	2	2	7	8	9	8	**	11
Floaters and true motherships	3	3	3	2	3	2	2	3	2	3	2	2	4	3	3	3	**	9
Total																		
Landed catch (mt)	*	30,920	32,440	29,150	28,090	25,904	25,283	34,622	40,797	38,979	39,093	*	41,716	37,443	33,709	26,329	21,489	554,913
LLP licenses	72	64	59	61	64	49	46	51	60	56	54	54	62	65	67	69	56	110
Vessels	78	64	57	64	65	54	48	50	55	53	48	48	56	61	65	61	51	115
Processors	14	12	11	12	14	10	10	13	11	13	10	11	17	17	19	18	**	35
Shoreside	7	7	7	8	8	6	5	7	6	8	6	6	6	5	7	7	**	14
C/P acting as mothership	3	1	1	2	3	2	2	3	3	2	2	2	7	8	9	8	**	11
Floaters and true motherships	4	4	3	2	3	2	3	3	2	3	2	2	4	3	3	3	**	10

Source: TCCP_Overview (6-4-20)(1), BSAI_TRW_LLP_PCODLANDINGS2(4-10-20) Workbook, and for processor count BSAI_PCOD_LAPP_Processors(4-9-20)

*Denotes confidential data

** Denotes data by processor type was not yet available.

¹Given 2020 processor type data is not yet available, aggregated counts by processor type does not equal total processor count.

Table 2-172 Targeted catch of Pacific cod in BSAI by trawl CV sector by season 2004 through April 10, 2020

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total ¹
A Season																		
Landed catch (mt)	32,050	27,564	27,965	24,685	24,696	22,621	25,161	31,865	33,865	33,515	35,097	28,532	36,953	34,805	27,637	22,528	21,489	491,028
Landed catch (%)	86.1%	89.1%	86.2%	84.7%	87.9%	87.3%	99.5%	92.0%	83.0%	86.0%	89.8%	89.9%	88.6%	93.0%	82.0%	85.6%	100.0%	88.5%
LLP licenses	62	62	56	55	58	43	46	48	57	52	50	53	58	61	63	67	56	108
Vessels	67	62	54	52	59	49	48	47	52	49	46	47	53	57	61	58	51	112
Processors	12	12	11	11	12	10	10	12	11	12	10	10	16	17	18	16	**	32
B Season																		
Landed catch (mt)	2,516	*	*	4,364	3,358	*	*	1,962	6,318	*	*	1,415	3,044	2,547	*	3,370	0	53,190
Landed catch (%)	6.76%	*	*	14.97%	11.95%	*	*	5.67%	15.49%	*	*	4.46%	7.30%	6.80%	*	12.80%	0.00%	9.59%
LLP licenses	43	36	42	40	46	30	2	32	35	23	18	19	32	27	32	42	0	91
Vessels	42	35	41	49	50	31	2	31	33	21	15	18	27	26	33	38	0	93
Processors	8	8	8	10	10	6	1	10	8	7	6	4	11	12	12	13	0	24
C Season																		
Landed catch (mt)	2,641	*	*	101	37	*	*	796	614	*	*	1,794	1,719	91	*	431	**	10,692
Landed catch (%)	7.10%	*	*	0.35%	0.13%	*	*	2.30%	1.51%	*	*	5.65%	4.12%	0.24%	*	1.64%	**	1.93%
LLP licenses	17	3	2	5	6	1	1	4	7	3	3	5	4	8	2	6	**	35
Vessels	16	3	2	4	6	1	1	4	7	3	3	4	4	8	2	5	**	32
Processors	8	2	1	3	3	1	1	3	3	1	2	4	5	5	2	3	**	15
Annual Total																		
Landed catch (mt)	37,207	30,920	32,440	29,150	28,090	25,904	25,283	34,622	40,797	38,979	39,093	31,741	41,716	37,443	33,709	26,329	21,489	554,913
LLP licenses	72	64	59	61	64	49	46	51	60	56	54	54	62	65	67	69	56	110
Vessels	78	64	57	64	65	54	48	50	55	53	48	48	56	61	65	61	51	115
Processors	14	12	11	12	14	10	10	13	11	13	10	11	17	17	19	18	**	35

Source: TCCP_Overview(6-4-20)(1) & BSAI_TRW_LL_PCODLANDINGS2 target_incidental(4-10-20) Workbook

*Denotes confidential data

** Denotes data not yet available

Table 2-173 Closure and opening dates (days) for the BSAI Pacific cod trawl CV sector, 2004 through 2021 B season

Year	A-Season: 20 Jan - Apr 1	B-Season: 1 Apr - 10 Jun			C-Season: 10 Jun - Nov 1
2004	Cl 23-Mar (62)	Cl 4-Apr (3)	Op 10-Apr	Cl 13-Apr (3)	Cl-Nov 1, REG (144)
2005	Cl 13-Mar (52) Op 29-Mar (3)	Cl 10-Jun, REG (71)			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)			Cl-Nov 1, REG (144)
2009	Cl 21-Mar (60)	Cl 5-Apr (4)			Cl-Nov 1, REG (144)
2010	Cl 12-Mar (51)	Cl 1-Apr (0)			Cl-Nov 1, REG (144)
2011	Cl 26-Mar (65)	Cl 4-Apr (3)	Op 9-Apr	Cl 12-Apr (3) Op 15-Apr	Cl-Nov 1, REG (144)
2012	Cl 29-Feb (39) Op 29-Mar (3)	Cl 15-Apr (14)			Cl-Nov 1, REG (144)
2013	Cl 11-Mar (50)	Cl 10-Jun, REG (71)			Cl-Nov 1, REG (144)
2014	Cl 16-Mar (55)	Cl 10-Jun, REG (71)			Cl-Nov 1, REG (144)
2015	Cl 27-Feb (38)	Cl 10-Jun, REG (71)			Cl-Nov 1, REG (144)
2016	Cl 9-Mar (48)	Cl 4-Apr (3)	Op 11-Apr	Cl 4-May (23)	Cl-Nov 1, REG (144)
2017	Cl 23-Feb (34)	Cl Apr 3 (2)			Cl-Nov 1, REG (144)
2018	Cl 11-Feb (22-BS), Cl 4-Mar (43-BSAI)	Cl Apr 3 (2)			Cl-Nov 1, REG (144)
2019	Cl 1-Feb (12 BS)	Cl Apr 2 (1)			Cl-Nov 1, REG (144)
2020	Cl 16-Feb (28)	Cl 1-Apr (0)			Cl-Nov 1, REG (144)
2021	Cl 1-Apr (71)	Cl 12-Apr (11)			

Source file: Season length table

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

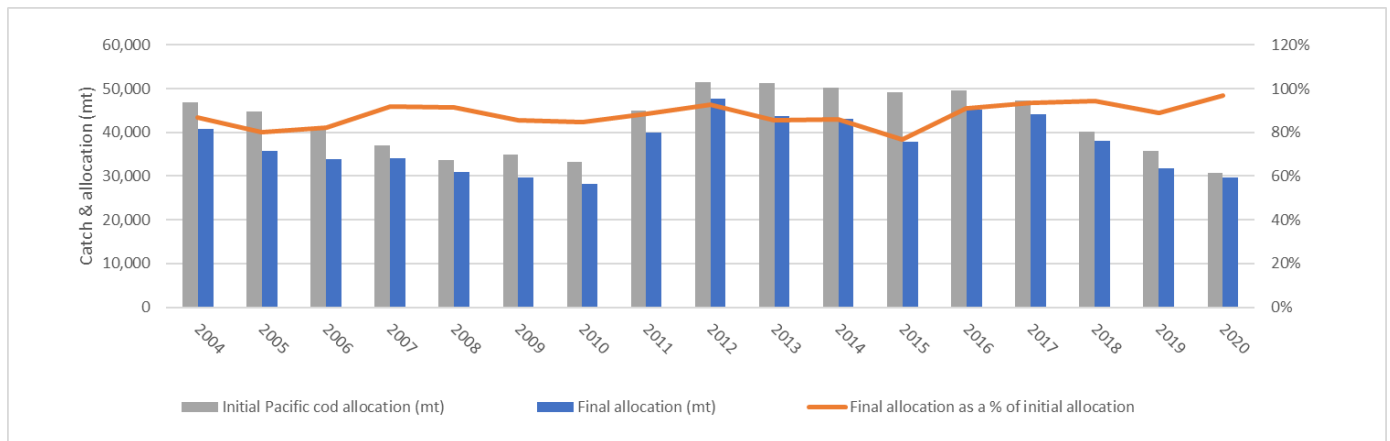
Despite the level of harvest capacity by the trawl CV sector in the BSAI Pacific cod fishery, this sector routinely does not harvest its entire annual allocation. A primary reason for not harvesting all their allocation is the limited aggregation of Pacific cod later in the year. Fishermen have indicated that it is hard to find aggregations of Pacific cod in sufficient amounts to warrant trawling after mid-April. This lack of aggregation of BSAI Pacific cod later in the year is reflected in Table 2-174 which provides initial allocation and final allocation along with the reallocation amounts of BSAI Pacific cod for the trawl CV sector. Also included in the table is the final allocation as a percent of the initial allocation of BSAI Pacific cod for the trawl CV sector on annual basis from 2004 through 2020. This same information is also provided in Figure 2-22. Throughout every year in the timeseries, some portion of unharvest Pacific cod has been reallocated from the trawl CV sector. From 2004 through 2020 between 1,014 mt (2020) and 11,370 mt (2015) have been reallocated away from the sector. Over those 17 years the reallocations from the trawl CV sector averaged 5,180 mt. However, in the four most recent years the reallocation has averaged 2,597 mt. Relatively strong Pacific cod prices and markets as well as a declining TAC may play a role in less Pacific cod being reallocated to other sectors. As noted in Table 2-8, the largest portion of the reallocations from the trawl CV sector accrued to the HAL C/P sector followed by the Amendment 80 sector and the HAL/pot CV less than 60 ft sector. With respect to the trawl CV sector's total reallocated of BSAI Pacific cod from 2004 through 2020, 20 percent was reallocated to the HAL/pot CV less than 60 ft, which contributed to 27 percent of that sector's total reallocation of BSAI Pacific cod from 2004 through 2020.

Table 2-174 BSAI Pacific cod trawl CV initial allocation (mt), final action (mt), and final allocation as a percent of initial allocation

Year	Initial allocation (mt)	Final allocation (mt)	Reallocations (mt)	Final allocation as a % of initial allocation
2004	46,844	40,717	-6,127	87%
2005	44,779	35,847	-8,932	80%
2006	41,251	33,824	-7,427	82%
2007	37,110	34,110	-3,000	92%
2008	33,692	30,842	-2,850	92%
2009	34,841	29,740	-5,101	85%
2010	33,309	28,175	-5,134	85%
2011	44,987	39,897	-5,090	89%
2012	51,509	47,749	-3,760	93%
2013	51,312	43,812	-7,500	85%
2014	50,107	43,107	-7,000	86%
2015	49,224	37,854	-11,370	77%
2016	49,638	45,138	-4,500	91%
2017	47,246	44,163	-3,083	93%
2018	40,227	38,027	-2,200	95%
2019	35,660	31,690	-3,970	89%
2020	30,707	29,693	-1,014	97%

Source: NMFS, Sustainable Fisheries

Figure 2-22 Annual BSAI Pacific cod trawl CV initial allocation (mt), final action (mt), and final allocation as a percent of initial allocation



Under status quo alternative, it is likely reallocations from the trawl CV sector to other sectors would likely continue but could see reduced reallocation amounts due to lower BSAI Pacific cod TACs and the continued strength in Pacific cod market. Sectors that could benefit from continued reallocation of Pacific cod include HAL C/P, Amendment 80, HAL/pot CV less than 60', AFA C/P, and the pot C/P sectors (see Section 2.8.3 for more details concerning reallocations of Pacific cod from the trawl CV sector to other sectors).

2.10.1.2. Alternative 2a - Multiple Cooperative with Blend Option, Processor QS Allocation, and Gear Conversion

Alternative 2a would authorize voluntary cooperatives in association with a legally permitted processor. The alternative would have no minimum number of LLP licenses or LLP license holders required to join a cooperative for cooperative formation. Holders of an eligible LLP license must join a cooperative for that cooperative to be issued CQ derived from the LLP licenses assigned to the cooperative. Harvesters

have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. Cooperatives are free to associate with any legally licensed groundfish processor without forfeiture or penalty. A licensed processor includes shoreside processors, floating processors operating in protected bays and inlets, motherships operating at sea, and eligible C/Ps.

Alternative 2a would not require a minimum number of LLP license holders, eligible catch history, or LLP licenses to form a cooperative but would require an association with a licensed processor. In other words, at its most basic level, a cooperative could form with just one LLP license holder with one eligible LLP license in association with a licensed processor. Despite the large number of qualified LLP licenses, it is likely that under Alternative 2a there would be far fewer cooperatives than possible given the potential ease of an intra-cooperative transfers among members of the cooperative. Although there is no limitation on the number of cooperatives a processor may associate with, the complexities associated with managing multiple cooperatives would likely result in a processor association with only one cooperative and therefore would likely limit the number of potential cooperatives formed.

Harvest allocations of QS to qualified LLP licenses within Alternative 2a are based on a 50/50 ratio of targeted BSAI Pacific cod qualifying history during the A and B seasons from 2014 through 2019 with no drop years and the AFA non-exempt 1997 BSAI Pacific cod sideboard history. There would be no minimum threshold percentage of qualifying history for eligibility to receive QS. The total number of qualified LLP licenses under this option would be 119. By area endorsement, 53 LLP licenses have an AI endorsement and 117 have a BS endorsement. Of the 119 LLP licenses, 33 LLP licenses qualified because of the addition of 1997 BSAI Pacific cod sideboard history, while the remaining 86 LLP licenses qualified based on qualifying catch history during the qualifying years 2014 through 2019 using only A and B season qualifying catch history with no drop years (Table 2-86). Of those 86 LLP licenses that qualified only using the 2014-2019 years and not 1997 sideboard history, 57 LLP licenses are authorizing AFA non-exempt CVs, 14 LLP licenses are authorizing AFA sideboard exempt CVs, and 15 LLP licenses are authorizing non-AFA trawl CVs. Also qualifying are five trawl CV LLP licenses with an AI transferable endorsement which are not included in the 119 qualified LLP licenses noted above.

Looking at the 33 LLP licenses that qualified due to their authorizing vessels 1997 BSAI Pacific cod sideboard history, 10 of the LLP licenses are currently authorizing 10 AFA vessels that are no longer active anywhere with all the vessels stopping fishing by 2016. The other 23 LLP licenses are authorizing 23 AFA vessels that are almost exclusively pollock vessels in the BS, but four of the vessels have recently started participating in the GOA.

From the perspective QS distribution to qualified LLP licenses, 54 percent of the QS would be assigned to LLP licenses that authorize AFA non-exempt vessels that were restricted by 1997 BSAI Pacific cod sideboards. Of that 54 percent, 44 percent would be assigned to LLP licenses based on their 2014-2019 history, while the remaining 10 percent would be to LLP licenses assigned to AFA non-exempt vessels with 1997 BSAI Pacific cod sideboard history only. Of the remaining 46 percent of the QS assigned to LLP licenses, 26 percent would be to LLP licenses authorizing non-AFA trawl CVs and 20 percent would be assigned to LLP licenses authorizing AFA exempt trawl CVs.

Since the structure of the PCTC Program under Alternative 2a only allocates targeted BSAI Pacific cod rather than allocate both target and incidental catch to the cooperatives, NMFS would be required to manage incidental catch of BSAI Pacific cod in other BSAI groundfish fisheries by cooperative vessels and vessels authorized by non-PCTC Program qualified LLP licenses. The addition of an ICA increases the management burden for NMFS, while also reducing some of the potential efficiency gained by cooperative management of incidental catch. See Section 2.10.3 for further information on effects of Alternative 2a on the incidental catch of BSAI Pacific cod.

Like Alternative 2b and Alternative 3, the nine sectors apportioned BSAI Pacific cod could be impacted under Alternative 2a if BS ITAC closes prior to end of the year and requiring sectors fish their available Pacific cod apportionments in the AI. However, the alternative includes a 25 percent set-aside of the A

season PCTC Pacific cod CQ that may only be harvested from the AI and delivered to an AI shoreplant if the community of Adak and/or Atka files a notice of intent to process. The requirement that the cooperatives harvest and deliver 25 percent of their A season CQ within the AI under Alternative 2a, benefits other sectors that would prefer to fish more of their Pacific cod apportionment in the BS relative to Alternative 2b which would allocate 10 percent of the BSAI trawl CV sector allocations to an entity representing an AI community or Alternative 3 which would require a 12 percent A season set-aside to the AI shoreplants. However, the 25 percent A season set-aside under this alternative is expected to reduce benefits to the trawl CVs and processors that operate in the BS in greater proportion than Alternative 2b and Alternative 3. Processors would likely lose some of the Pacific cod CQ they would have otherwise processed within a cooperative, especially if that BS catch is then taken by members of the HAL C/P, Pot C/P, or trawl C/P sectors. Trawl CV cooperative members would need to coordinate within and between cooperatives to ensure that the AI set-aside is addressed. Not allocating the C season apportionment to the cooperative program under Alternative 2a may also reduce the impacts of trawl CVs harvesting more of their allocation in the BS, especially since the trawl CV sector has not typically harvested all of their allocation under the Status Quo. Any unused C season Pacific cod could be used by sectors that have traditionally fished in the BS or AI later in the year (HAL C/Ps and pot vessels).

Under Alternative 2a, holders of qualified trawl CV LLP licenses with QS can only access that QS through cooperative membership. Depending on the structure of the cooperative contracts, cooperatives members will have the flexibility of delivering to multiple processors. Despite this flexibility, it is likely that established relationships with processors will have an important influence on harvester delivery choices. Relative to Alternative 2b which has no allocation of harvest shares to processors or Alternative 3 which could include a lower allocation of harvest shares to processors, an allocation of 30 percent harvester shares to processors under this alternative would also provide for a stronger negotiating position for processors since these shares could be used as an incentive for harvester deliveries to that processor. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also increase as processors improve product quality and produce higher quality products that cannot be produced under the current fishery status.

Under Alternative 2a, C/Ps acting as a mothership would be prohibited from processing more BSAI Pacific cod deliveries than they processed during the qualifying period. C/Ps would have individual processing limits. The percentages cannot be provided due to confidentiality rules, but it would likely constrain the amount of Pacific cod delivered by CVs. Because the sector would be limited, they would need to determine which CVs could deliver to them while staying under the processing limit. This could constrain markets for some CVs that have historically delivered to these vessels.

Assuming the processing limit is a constraint, C/P firms are expected to prioritize deliveries by vessels using LLP licenses held by the C/P firm. C/P firms would have greater control over the CQ generated from those LLPs and would try to capture economic rents that can be derived from harvesting and processing those Pacific cod. If the C/P reaches the limit and must transfer Pacific cod derived from LLP licenses they hold to another cooperative, they would need to lease that CQ. The lease may capture most or all of the rents derived from the harvest of the CQ, but the C/P firm will forgo any benefits from processing the Pacific cod, including but not limited to meeting contract obligations to buyers, crew compensation, and profits (or reduced losses) for the firm. The firm may also forgo synergistic benefits from using a portion of their directed Pacific cod allocation in conjunction with other CV fisheries they participate (e.g., yellowfin sole).

By prioritizing their own CVs and LLP licenses, the C/Ps may not be able to provide markets for CVs that are not designed to deliver shoreside (i.e., hold capacity and RSW tanks). These CV operators may be forced to lease their quota to other members of the cooperative they join or attempt to find an offshore market that is not constrained by processing limits. Unless there are changes in the structure of the fishery, the most likely result is that the CV operator would lease their CQ. This may allow the vessel operator to derive most of the benefits from the CQ, depending on the lease rates they could negotiate, but

could negatively impact the CV crew member's total annual compensation. Depending on how restrictive the processing limits are, this group of vessel operators could be impacted the most, because of their relatively weak bargaining position with both the offshore and onshore processing sectors.

A variety of factors, including bycatch avoidance, ease in transferring harvest privileges, and the potential use of pot gear may lead to changes in the geographic distribution and timing of harvest. However, the harvests will continue to be highly influenced by the timing and location of spawning aggregations. Nevertheless, cooperative harvest privileges under Alternative 2a are expected to result in less motivation to "race for fish," allowing harvesters to time fishing operations in a manner that more closely optimizes timing of harvest of BSAI Pacific cod, which in turn would likely lengthen the fishery for A season and B season and would likely result in efficiency improvement that would arise from technical efficiency gains from slowing, or otherwise optimizing fishing within a cooperative structure.

Participants would be free to consolidate fishing up to the use cap and/or vessel cap limits, which for this alternative is 7 percent for ownership and use based on the individual and collective rule and 3 percent use caps for each vessel. These caps provide opportunity for fleet consolidation. At a 7 percent ownership and use cap, 4 LLP license holders, aggregated by 2020 LLP license holder's address, would be grandfathered at their initial allocation, and therefore could not acquire additional allocation, whereas 39 LLP licenses holders¹⁴⁷ could acquire additional allocation up to the 7 percent cap.

At a vessel cap of 3 percent, the BSAI Pacific cod fishery could be harvested by a minimum of 34 vessels, which provides some opportunity for cooperatives to shift vessel fishing effort to specialize in the Pacific cod fishery but less than Alternative 2b and Alternative 3. Historically, the number of trawl CVs that harvested greater than 3 percent of the annual BSAI Pacific cod target catch during the 2014 through 2019 period was 21. Overall, consolidating catch of Pacific cod on fewer vessels would likely reduce costs since only the most efficient vessels would likely remain in the fishery. Cooperative management would also likely result in some trawl CV vessels shifting some fishing effort to the Pacific cod fishery relatively to other groundfish fisheries, especially amongst AFA trawl CVs where two of the primary BSAI trawl CV fisheries would be conducted under a cooperative structure.

Alternative 2a includes a 35 percent reduction in the amount of halibut PSC apportioned to the trawl CV sector for use in the A and B season BSAI Pacific cod CQ fishery. After accounting for halibut PSC apportionment to the trawl CV sector and the AFA C/P sector, a 15 percent C season apportionment for the trawl CV limited access fishery, and the 35 percent reduction in the halibut PSC that would be allocated to the A and B season QS fishery, the amount of halibut PSC for the A and B season QS fishery would be 208 mt and the C season apportionment would be 57 mt. These seasonal halibut PSC limits are based on a 391 mt halibut PSC allowance apportioned to the TLAS BSAI Pacific cod fishery which can change depending on the amount of halibut PSC that would be apportioned to the BSAI Pacific cod during harvest specifications. As noted in Section 2.9.3, the combined 265 mt halibut PSC limit would have been exceeded nine of the 17 years (2004 through 2020). Further, in utilizing the historical average halibut PSC rate for the BSAI Pacific cod trawl CV target fishery, an allocation of 265 mt of halibut PSC to the trawl CV sector would have been on average been insufficient to harvest the sector's BSAI Pacific cod target catch 13 of the past 17 years (2004 through 2020). Factoring in incentives used by the cooperatives to reduce halibut PSC rates would increase their ability to harvest a greater share of Pacific cod CQ. In addition, the use of pot gear to harvest CQ could reduce the halibut PSC given the gear's low halibut PSC rate. Despite these factors that could reduce halibut PSC, there is the potential that a 35 percent halibut PSC limit reduction to the trawl CV sector for use in the A and B season fishery could be limiting enough that cooperatives could leave CQ unharvested under higher BSAI Pacific cod TACs.

As noted above, Alternative 2a provides the ability for BSAI Pacific cod CQ to be harvested using pot gear, which could provide greater flexibility for cooperatives in harvesting their BSAI Pacific cod CQ. Vessels using pot gear are eligible to harvest a portion of a cooperative's CQ but must be identified in the

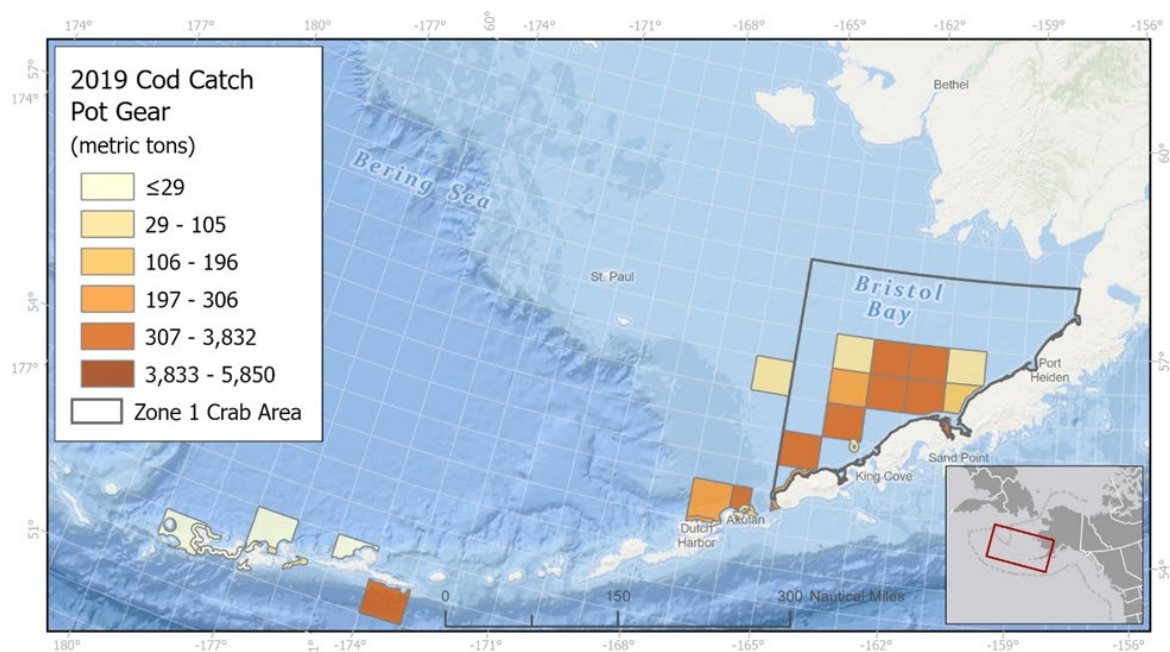
¹⁴⁷ LLP licenses with no owner address listed were not included in these counts.

annual cooperative application. Ultimately, the number of cooperatives that will use pot gear to harvest cooperative CQ, if any, is unknown. It is assumed that most cooperatives will continue to harvest their own CQ allocation or lease it to another trawl vessel operator within the cooperative. Use of vessels that will deploy pot gear may be used if an initial CQ holder:

- also owns a CV that has fished with pot gear,
- has a close association with a vessel operator that uses pot gear,
- derives greater economic benefit from leasing to a vessel using pot gear than vessel operators using trawl gear,
- has a small allocation that will not allow them to make a trawl trip,
- halibut PSC limits are anticipated to constrain the harvest of Pacific cod by the trawl CVs.

As noted in Section of 3.3.2, the EA, the use of pot gear to harvest BSAI Pacific cod CQ could result in lower halibut PSC but could also result in higher crab PSC. As noted in Figure 2-24, some of the highest Pacific cod catch using pot gear in 2019 was in Zone 1 crab saving area. When combined with a 35 percent reduction in halibut and crab PSC limits and accommodating a C season Pacific cod trawl CV limited access fishery apportionment of halibut and crab PSC under this alternative, there is a greater potential relative to Alternatives 2b and 3 that a cooperative could increase their risk of being constrained by red king crab (Zone 1) PSC limits if pot gear was used to harvest CQ. As noted in Section 3.3.2 of the EA, the trawl CV sector would exceed its red king crab (Zone 1) PSC limit if approximately 5 percent of the CQ was fished with pot gear, which would result in the closure of area (Zone 1) to fishing. Given the risk of exceeding red king crab (Zone 1) PSC limit at the sector level when using pot gear, it is likely the risks of exceeding the PSC limit at the cooperative level would be greater.

Figure 2-23 Catch by location for the 2019 Pacific cod using pot gear in the BSAI with Zone 1 crab savings area



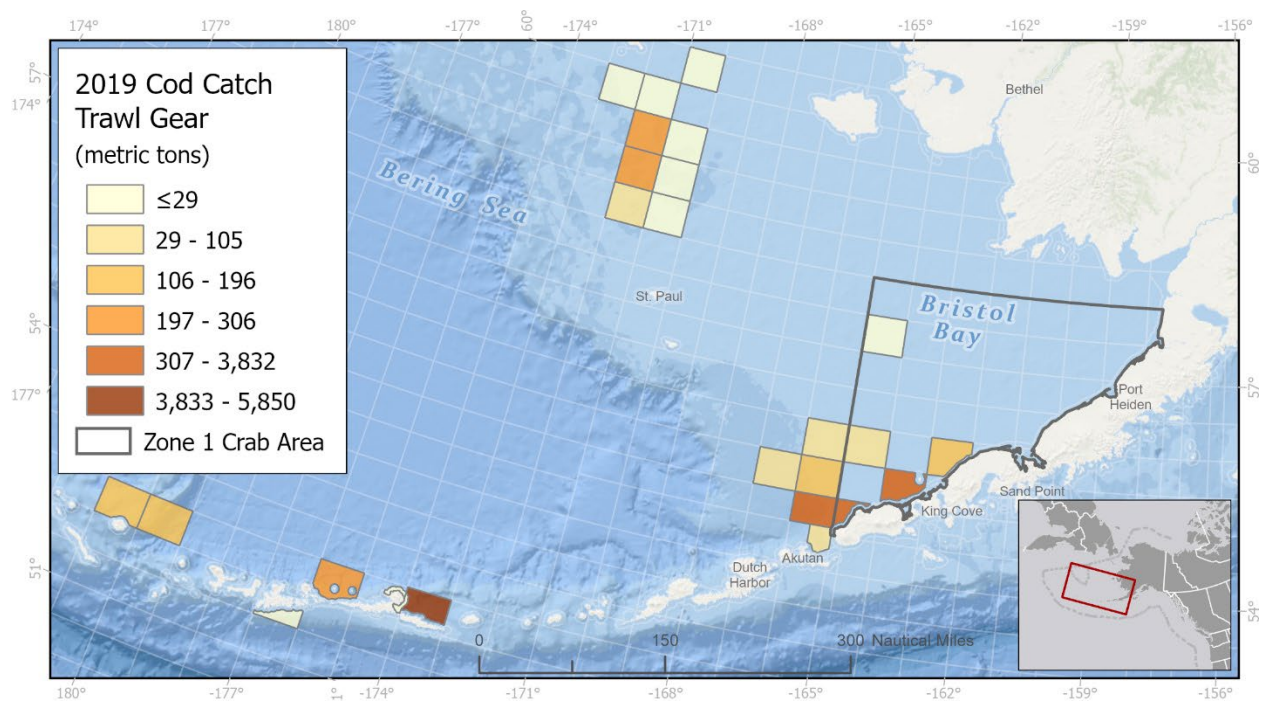
Source: AKFIN, September 2020

One factor that could reduce some of the risk to cooperatives when PSC limits have the potential to be significantly constraining, like red king crab (Zone 1), is that the harvest specification process allows for adjustments in PSC apportionment at the fishery level. Under the PCTC Program, management of halibut and crab PSC limits would continue to be managed at the TLAS level via the current regulations (50 CFR §679.21(b)(1) and crab (50 CFR §679.21(e)(3)(iv)) and at the fishery level during harvest specifications

process. This approach would allow for greater flexibility for the TLAS to adjust PSC limits at the fishery level¹⁴⁸ via the harvest specification process to reduce potential disruptions in the Pacific cod fishery during the upcoming fishing year.

Since PSC is allocated at the cooperative level, management of the crab and halibut PSC would be addressed within cooperatives and via an inter-cooperative agreement. Although there are a few approaches at the inter-cooperative level to manage cooperatives PSC limits like monetary penalties for exceeding a limit, transfers of PSC between cooperatives, and/or PSC insurance pool, the results of a cooperative exceeding a PSC limit could constrain the ability of the cooperative to harvest its Pacific cod CQ. As an example, Figure 2-24 shows that some of the highest catch of Pacific cod using trawl gear was in Zone 1 crab savings area. The loss of fishing in Zone 1 by a cooperative could result in the cooperative having lower catch rates of Pacific cod which would increase the cost of fishing for cooperative vessels thereby reducing economic returns. In addition, having to move out of Zone 1 to harvest CQ could result in cooperative vessels moving from Pacific cod grounds with lower halibut PSC usage rate to grounds that could have a higher halibut PSC usage rate, which could increase the risk of the cooperative reaching its halibut PSC limit prior to fishing all its CQ. One option the Council might consider in helping to reduce the constraint of the Red King crab (Zone 1) PSC limit is manage this PSC limit at the sector level rather than at the cooperative level. This approach would provide greater flexibility for cooperatives to manage this PSC limit by not closing the crab savings area at the cooperative level. Instead, the crab savings area would be closed once the sector reached the PSC limit.

Figure 2-24 Catch by location for the 2019 Pacific cod fishery using trawl gear in the BSAI with Zone 1 crab savings area



Source: AKFIN, September 2020

In general, harvesting the BSAI trawl CV sector allocation under a cooperative structure is expected to reduce the amount of Pacific cod initially allocated to the trawl CV sector that would be unharvested and reallocated to other sectors later in the year. Exclusive access to Pacific cod CQ provides the ability for cooperatives to better manage their allocation and limit seasonal reallocations that typically occur in the

¹⁴⁸ Increase the TLAS Pacific cod PSC apportionment relative to other TLAS species during the annual harvest specifications process.

fishery. However, since Alternative 2a and Alternative 3 would only allocate A season and B season QS to eligible LLP licenses leaving the 15 percent C season trawl CV sector allocation as a limited access fishery, there is likely more potential for reallocation under this alternative than under Alternative 2b but would be comparable to Alternative 3. As noted in the Table 2-172, on average from 2004 through 2019, the vast majority of trawl CV sector allocation was harvested in the A season at 88.5 percent followed by the B season at 9.6 percent and the C season at 1.9 percent. The relatively large proportion of Pacific cod harvested in the A season and B season is primarily due to the large spawning aggregations that typically occur from late February or early March through early to mid-April. Identified major spawning areas include north of Unimak Island, in the vicinity of the Pribilof Islands, at the shelf break near Zhemchug Canyon, and adjacent to islands in the central and western Aleutian Islands along the continental shelf (NPFMC, 2019). Following the winter spawning aggregation, Pacific cod will migrate to summer feeding grounds resulting in a lower level of aggregation resulting in a reduction in the sector's catch per unit effort (CPUE). With a lower CPUE, many of the trawl CVs forgo fishing in the C season due to the higher marginal cost of fishing for Pacific cod relative to fishing in the A and B seasons. Overall, cooperative management would be expected to reduce the amount of reallocations from the trawl CV sector to other sectors but leaving the C season as limited access under Alternative 2a and Alternative 3 would likely result in some portion of the remaining TAC and ICA being reallocated to other sectors after the B season.

The likelihood of continued reallocation of Pacific cod TAC to other sectors in the fall under this alternative could be crucial for those sectors that typically receive a portion of the trawl CV Pacific cod reallocation. As noted in Table 2-8, the largest portion of the trawl CV reallocation accrues to the HAP C/P sector followed by the Amendment 80 sector and the HAL/pot CV less than 60 ft sector. For the reallocation to the HAL/pot CV less than 60 ft sector, the nearly 20 percent of total Pacific cod that was reallocated from the trawl CV sector to the HAL/pot CV less than 60' sector contributes to 27 percent of that sectors total reallocated Pacific cod the sector.

The reallocation from the trawl CV sector to other sectors generally occurs in the mid-August to early September. It is expected that the reallocation under the cooperative program would not occur until after August 1 to accommodate post-delivery transfers, which could fall in the time frame reallocations have occurred in the past. Typically, the fall reallocation from the trawl CV sector is usually enough to allow the HAL/pot CV less than 60 ft sector to remain open during the fall. Based on testimony from some HAL/pot CV less than 60 ft sector participants during previous Council meetings, the fall reallocation of Pacific cod is an important revenue source for those sector participants active in the fall Pacific cod fishery.

The implementation of the PCTC Program will result in additional costs to the fleet including the 3 percent of ex-vessel value cost recovery fee, potentially increased monitoring and enforcement costs, additional costs associated with cooperative reports, and costs associated with creating and operating the cooperative. These costs are expected to be less than benefits gained through improved technical efficiency.

2.10.1.3. Alternative 2b: Multiple Cooperative with no Gear Conversion and No Processor QS Allocation

Alternative 2b would authorize multiple voluntary cooperatives in association with a legally permitted processor. The alternative would require a minimum of three unique LLP licenses, but no minimum number of LLP license holders for cooperative formation. Holders of an eligible LLP license must join a cooperative to access the QS assigned to the LLP license. Harvesters have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. Cooperatives are free to associate with any legally licensed groundfish processor without forfeiture or penalty. A licensed processor includes shoreside processors, floating processors operating in protected bays and inlets, motherships operating at sea, and qualified C/Ps.

Harvest allocations within Alternative 2b are based on targeted BSAI Pacific cod history during all three BSAI trawl CV Pacific cod seasons from 2004 through 2019 and includes the option to drop two-years in the allocation calculations. As noted in Table 2-88, 108 LLP licenses would be allocated all A, B and C season BSAI trawl CV Pacific cod sector allocation, after the ICA is deducted, for use in a cooperative. Also qualifying are eight trawl CV LLP licenses with less than 60' MLOA with an AI transferable endorsement which are not included in the 118 qualified LLP licenses. Looking at the qualified LLP licenses by area endorsement, 46 of the 188 qualified LLP licenses have an AI endorsement, and 105 LLP licenses have a BS endorsement. Trawl vessels that are authorized by an LLP license that use trawl gear in the BSAI, but the LLP license does not qualify to receive QS could still harvest Pacific cod as incidental catch in other fisheries, but they would not be allowed to harvest Pacific cod in the directed BSAI trawl CV fishery under a cooperative.

Alternative 2b includes an option that would require a person to hold LLP license(s) that would in aggregate be assigned at least one percent of the qualifying catch history to be eligible to receive QS at the time of initial allocation. LLP license(s) held by that person with less than one percent of qualifying catch history in aggregate would not qualify for QS. This option would not apply to the eight non-AFA trawl CV LLP licenses with less than 60' MLOA that have a transferable AI endorsement. As noted in Table 2-85, of the total 108 LLP license that qualify for QS without a minimum threshold percentage option, 41 LLP licenses would not qualify for QS at a one percent minimum threshold percentage for LLP license holders. These 41 LLP licenses would have received about 13 percent of the total QS since this alternative does not issue QS to processors based on their processing history. The trawl CVs authorized by these 41 LLP licenses received 53 percent of their revenue from AFA pollock fishery over the past 10 years, nine percent from non-AFA BSAI Pacific cod fisheries, and the remaining portion from other groundfish fisheries. Fourteen trawl CVs were over 90 percent dependent on the AFA pollock fishery, while one trawl CV received 99 percent of its revenue from the BSAI Pacific cod fishery. The effect of removing these 41 LLP licenses from the pool of qualified LLP licenses results in a slight increase in the percent of qualified landings for all the remaining 67 LLP licenses. This BSAI Pacific cod QS for the remaining 67 LLP licenses under this alternative would increase proportionally to the QS not issued to the 41 LLP licenses.

As with Alternative 2a, the structure of the PCTC Program under Alternative 2b only allocates targeted BSAI Pacific cod rather than allocate both target and incidental catch to the cooperatives. This structure was selected to facilitate cooperative formation by only including vessels that will be directed fishing for Pacific cod. To accommodate this management structure, NMFS would be required to manage incidental catch of BSAI Pacific cod in other BSAI groundfish fisheries by cooperative vessels and the seven trawl CVs authorized to fish by non-qualified LLP licenses. This increases NMFS management burden while also reducing some of the potential efficiency gained by cooperative management of incidental catch. See Section 2.10.3 for further information on effects of Alternative 2b on the incidental catch of BSAI Pacific cod.

Under Alternative 2b, holders of qualified trawl CV LLP licenses with QS can only access that QS through cooperative membership. Cooperative members will have the flexibility of delivering to multiple processors, within the bounds of the civil contracts established within the cooperative. For example, the AFA program allows harvesters to deliver up to 10 percent of the pollock to a different processor than they are associated with in their cooperative. Despite this flexibility, it is likely that established relationships with processors will have an important influence on market power between harvesters and processors. Given that Alternative 2b would not allocate harvester shares to processors, this alternative relative to Alternative 2a and Alternative 3, provides less market power influence for processors. The shift in market power may allow harvesters to negotiate higher gross ex-vessel prices relative to either the No Action alternative, Alternative 2a, and Alternative 3. For a more detailed discussion concerning the processors' influence on market power, see Section 2.10.2.

Under a multiple cooperative formation alternative, the bargaining power changes during the cooperative formation process. In general, the smaller the number of LLP license holders or LLP licenses or the percent of QS necessary to form a cooperative, the easier it is to form a cooperative. The alternative does not preclude other holders of eligible LLP licenses from joining a cooperative once formed if they agree to the terms of the cooperative's bylaws. Since this alternative and Alternative 3 requires a minimum of three LLP licenses with PCTC QS to form a cooperative, the alternative relative to Alternative 2a would likely provide slightly less opportunity of sector participants (particularly those with less common views of circumstances) to join a cooperative. The holders of the most divergent views can review the terms and conditions of each cooperative agreement to determine which best meets their needs. Holders of eligible LLP licenses that do not like the conditions for membership in cooperatives that have formed could form their own cooperative or attempt to find other eligible LLP license holders willing to form a separate cooperative. Any cooperatives that form would need to reach an agreement with a processor. Because processors may not wish to be associated with multiple cooperatives if it results in an increased complexities like reporting burden and increase quota transfer costs, they may help limit the number of cooperatives that form. Alternatively, an eligible LLP license holder with sufficient quota to offer a cooperative could use competing cooperatives to negotiate more favorable terms and conditions. In addition to holders of LLP licenses and the associated quota in determining bargaining power, other factors could also affect bargaining power over time. For example, changes in TAC such that the AI exceeds the BS could also shift bargaining power between LLP license holders with BS only endorsements and those with AI endorsements.

The terms¹⁴⁹ of the cooperative agreement under this alternative, and consequently, the cooperative and processor association are subject to negotiation between the cooperative members and the processor. Given the flexibility of the harvesters to move among cooperatives and cooperatives to change associations (such as delivery requirements or terms), the terms of the cooperative will be fully voluntary, and harvesters could receive compensation for concessions. Business relationships are likely to be important factors that affect cooperative and processor association choices.

Alternative 2b would limit the number of CVs that would be allowed to deliver to the two qualified C/Ps that are allowed to act as a mothership in the BSAI Pacific cod fishery. Once qualified, CV deliveries to a C/P would not be constrained by a processing limit, but they would be limited to the amount of CQ that was assigned to the LLP license they own¹⁵⁰. Element 5.3 indicates that as many as 10 LLP licenses, held by three firms could qualify CVs to deliver to C/Ps under Alternative 2b¹⁵¹. These LLP licenses accounted for 15.3 percent of the qualifying catch from 2004 through 2019. Meaning that if all 10 CVs qualified under this option, they could deliver all of the catch associated with their LLP licenses to the two qualified C/Ps acting as a mothership even though not all of the catch associated with the LLP licenses was delivered to C/Ps during the qualifying period. During the 2004 through 2019 period, 68.7 percent of the qualified BSAI Pacific cod catch associated with the qualified LLP licenses was delivered to C/Ps acting as a mothership. Options that include earlier years of data tend to decrease the percentage of the catch associated with these LLPs that was delivered to C/Ps.

Selecting Alternative 2b would allow C/P firms to have greater control over the CQ and/or CVs they own. However, the alternative would not address concerns of CV operators whose vessels are not designed to

¹⁴⁹ Within the limits that the cooperatives are intended to only conduct and coordinate harvest activities of the members (Element 9).

¹⁵⁰ It is assumed that the CQ limit is based on the LLP licenses that were 75 percent owned by the eligible C/P firms on December 31, 2019. Licenses that are sold would reduce the limit, but CQ generated by LLP licenses purchased after that date would not increase the limit.

¹⁵¹ One C/P firm was technically still qualified on that data, because the FR notice was published but it was prior to the implementation date. If the Council determines that the vessel operated by the third firm should not qualify under this provision, the data would be considered confidential and could not be published.

efficiently deliver shoreside and are not 75 percent owned by a qualified C/P firm¹⁵². The owners of these CVs/LLP licenses would likely need to lease their CQ or find another offshore market. Neither of these options may be attractive or viable.

Leasing the CQ would allow the vessel owner/operator to capture some or all of the benefits from holding the CQ. The crew compensation would be reduced, since they are not harvesting the CQ, and the reductions in crew compensation may make it more difficult to retain crew members. Depending on the other fisheries the vessel is participating in, it may make it more attractive to lease CQ from those fisheries as well. For example, if a vessel primarily operated in the BSAI pollock and BSAI Pacific cod fisheries, not being able to deliver Pacific cod may make the vessel's participation in harvesting pollock less viable because of fewer fishing days and less income for crew. If the pollock fishery was determined to be insufficient to operate the vessel, the owners could decide to also lease their pollock and not operate the vessel.

Finding another offshore market would be problematic because the AFA motherships have not been consistently active in the BSAI Pacific cod trawl CV fishery. If the AFA motherships choose to not participate in the fishery, even with the additional time afforded by the LAPP, and C/Ps are limited by BSAI Amendment 120, no other offshore processing markets currently available for trawl CV deliveries. This paper also discusses the possibility of using tender vessels in this fishery under the proposed LAPP. This could be a viable option if vessel need to fish in the AI, because of ITAC limits in the area, and no processors are active in the region.

Alternative 2b includes a 10 percent reduction in the amount of halibut PSC apportioned to the trawl CV sector for use in the BSAI Pacific cod CQ fishery. Looking at the impacts of a halibut PSC reduction under this alternative, Table 2-112 shows that at a 10 percent reduction in halibut PSC would result in allocation of 342 mt of halibut PSC for use in the BSAI Pacific cod fishery, assuming 391 mt of halibut PSC allowance. Historically, the trawl CV sector while targeting BSAI Pacific cod would have been constrained six years out 17 years from 2004 through 2020. Applying a halibut PSC per mt of targeted BSAI Pacific cod approach that was used in Section 2.9.3, a 342 mt halibut PSC allocation would have been insufficient to harvest the sector's BSAI Pacific cod target catch six of the past 17 years (2004 through 2020). Of course, this measure does not account for incentives the cooperatives would likely utilize to reduce halibut PSC rates. Overall, the potential for constraining the cooperatives' ability to harvest its CQ is reduced under this alternative relative to Alternative 2a and Alternative 3 but could in some instances constrain cooperatives in their ability to harvest their entire CQ.

A variety of factors under Alternative 2b, including bycatch avoidance and ease in transferring harvest privileges could lead to changes in the geographic distribution and timing of harvest but likely less than Alternative 2a and Alternative 3, since those alternatives include the ability to use pot gear to harvest CQ. Harvest will continue to be highly influenced by the timing and location of spawning aggregations during A and B seasons. In general, cooperative harvest privileges under Alternative 2b could result in less motivation to "race for fish," allowing harvesters to time fishing operations in a manner that more closely optimizes timing of harvest of BSAI Pacific cod. This in turn would likely lengthen the fishery for A season and B season, as well as harvest more of the C season fish when compared to Alternative 1, Alternative 2a, and Alternative 3. As noted in the discussion concerning season length in Section 2.10.1.1, the length of the BSAI Pacific cod fishery for the trawl CV section has compressed from a 40 to 60-day A season fishery to less than a two-week fishery in recent years, except when conditions helped foster voluntary cooperative formation. Under a compressed Pacific cod fishery, harvesters and processors attempt to maintain market share. As a result, quality often suffers because of the rapid rate of harvest and processing, which leads to the production of relatively lower value and lower quality products. In addition, harvesters that are less focused in reducing PSC and safety could be compromised to some

¹⁵² The Council has a placeholder in their motion to consider options to address the concerns of these vessel operators, but they have not been developed for this version of the analysis.

degree. Eliminating the race for fish would likely lengthen the duration of the fishery which should slow the flow of Pacific cod through processing plants, increasing product quality, which increases returns from the fishery. In addition, harvesters would likely take steps to reduce PSC and improve safety.

Alternative 2b would also likely result in slightly more potential for efficiency improvements that would arise from technical efficiency gains from slowing, or otherwise optimizing fishing within a cooperative structure than Alternative 2a and Alternative 3 which would allocate only A and B season CQ. Because the C season is allocated under the PCTC, trawl CVs would be more likely to attempt to harvest those fish as they would not be reallocated to other sectors and CQ could be consolidated on vessels that have fished the C season in the recent past.

As noted above, in a slower fishery, participants are expected to be better able to modify fishing activities to some degree, which would allow harvesters to focus their efforts on harvesting allocations in a manner that improves technical efficiencies—reducing inputs, harvesting a greater share of the allocation, and increasing the quality of Pacific cod deliveries leading to both higher gross revenue per vessel and per-vessel profits, all else being equal. In addition, participants will be free to consolidate fishing up to the ownership and use cap and/or vessel cap limits, which for this alternative is 10 percent for ownership and use based on individually and collective rule and 5 percent use caps for each vessel. These caps provide a greater opportunity for specialization amongst the different groundfish fisheries relative to Alternative 2a and Alternative 3.

At a 10 percent ownership and use cap, 1 LLP license holder, aggregated by 2020 LLP license holder's address, would be grandfathered at their initial allocation and therefore could not hold additional allocations, whereas 49 LLP license holders¹⁵³ could acquire additional allocation up to the 10 percent cap.

At a vessel cap of 5 percent, the BSAI Pacific cod fishery could be harvested by 20 vessels, which provides more opportunity for cooperatives to continue shifting fishing effort to increase specialization in the Pacific cod fishery relative to Alternative 2a at 3 percent and Alternative 3 at 4 percent. Historically, the number vessels that harvested greater than 5 percent of the annual BSAI Pacific cod target catch ranged from zero vessels to four vessels from 2003 through April of 2020. A limit of 5 percent would have constrained some vessels in some years and in some years no vessels reach that level of harvest. Overall, specialization of Pacific cod catch on fewer vessels would likely reduce costs since only the most efficient vessels would likely remain in the fishery. As noted in the analysis of Option 2.2.4 (blended allocation), some AFA trawl non-exempt CVs restricted by BSAI Pacific cod sideboard limits have since implementation of the AFA Program focused a greater proportion of their fishing effort harvesting pollock CQ while some AFA non-exempt vessels have focused a greater proportion of their effort harvesting BSAI Pacific cod. Cooperative management of the BSAI Pacific cod fishery would likely result in even greater emphasis for some trawl CVs to focus their fishing effort on harvesting Pacific cod, especially in the AFA sector where two of their primary BSAI trawl CV fisheries would be conducted under a cooperative structure. This increased potential specialization in the Pacific cod fishery by some AFA trawl CVs could be effective in harvesting more of the C season allocation relative to Alternative 1 and Alternative 2a and Alternative 3 since these two alternatives only allocate A and B season CQ.

Alternative 2b would likely result in a reduced amount of inseason reallocations from the trawl CV sector or potentially no inseason reallocations from the sector. In addition, the cooperative structure is expected to reduce the amount of Pacific cod that would be reallocated to other sectors later in the year. Exclusive CQ provides the ability for cooperatives to better manage their allocation and could limit seasonal reallocations and seasonal overages that currently occur in the fishery. However, with C season allocated as CQ, cooperatives can be more deterministic in their effort in the Pacific cod fishery by cooperating to harvest Pacific cod more efficiently. Because effort can be coordinated under cooperative management, they can match effort to the amount of Pacific cod available without exceeding their allocation. Currently,

¹⁵³ LLP licenses with no owner address listed where not included in these counts.

NMFS estimates the amount of catch per day based on total effort in the fishery and close the fishery to directed fishing before the sector allocation is fully harvested. Cooperative management would allow members of the cooperative to harvest more of their allocation through control of individual vessels as opposed to NMFS management.

With increased effort to fish their C season Pacific cod combined with accommodating the cooperative's post-delivery transfers by December 31, of any unused CQ would likely not be available for reallocation to other sectors. Sectors that would likely be negatively impacted due to diminished or no reallocation of Pacific cod include HAL C/P, Amendment 80, HAL/pot CV less than 60', AFA C/P, and the pot C/P sectors.

Any increase in effort during the C season in the BS relative to status quo alternative could increase the potentially for the BS to close on TAC. For example, looking at 2020 and 2021 (through July), limited effort in the AI has resulted in a higher percentage of catch being taken in the BS. In 2021 this could result in the BS being closed to directed Pacific cod fishing before the pot fisheries B season. However, since Alternative 2b would allocate 10 percent of the BSAI trawl CV sector allocation that must be harvested in the AI to an entity representing the AI community when a community of Adak or Atka file a notice of intent to process annual harvest of CQ, this 10 percent allocation could provide fishing opportunities for other sectors operating in the BS Pacific cod fishery.

Implementation of the PCTC Program will result in additional costs to the fleet including the 3 percent of ex-vessel value cost recovery fee, potentially increased monitoring and enforcement costs, additional costs associated with cooperative reports, and costs associated with creating and operating the cooperative. These costs are expected to be less than benefits gained through improved technical efficiency.

2.10.1.4. Alternative 3 (PA): Multiple Cooperative and Processor QS Allocation

Alternative 3 would authorize multiple voluntary cooperatives in association with a legally permitted processor. Like Alternative 2b, this alternative would require a minimum of three unique LLP licenses with no minimum number of LLP license holders for cooperative formation. Holders of an eligible LLP license must join a cooperative to access the QS assigned to the LLP license. Harvesters have full discretion to choose a cooperative initially and may freely move among cooperatives annually thereafter. Cooperatives are free to associate with any legally licensed groundfish processor without forfeiture or penalty. A licensed processor includes shoreside processors, floating processors operating in protected bays and inlets, motherships operating at sea, and qualified C/Ps.

Harvest allocations within Alternative 3 are based on targeted BSAI Pacific cod qualifying catch history during the Pacific cod A season and B season from 2009 through 2019 and does not include an option to drop years in the allocation calculations. As noted in Table 2-87, 92 LLP licenses would be allocated all A and B season BSAI trawl CV Pacific cod sector allocation, after the ICA is deducted, for use in a cooperative. This does not include the seven trawl CV LLP licenses with less than 60' MLOA with an AI transferable endorsement that qualify under this alternative. By area endorsement, 36 of the qualified LLP licenses have an AI endorsement and 91 LLP licenses have a BS endorsement. The 15 percent C-season allocation would remain as a trawl CV limited access fishery. Trawl vessels that are authorized by an LLP license that use trawl gear in the BSAI, but the LLP license does not qualify to receive A or B season QS, could still harvest Pacific cod as incidental catch in other fisheries during the A and B seasons, but they would not be allowed to harvest Pacific cod in the directed BSAI trawl CV fishery under a cooperative during those seasons. Option 2.2.2 was selected because most members of industry felt it balances dependency on the BSAI Pacific cod fishery between those LLP license holders with long-term dependence on the fishery relative to those LLP license holders with more recent participation. It also limits participation in the PCTC to those LLP license holders that have participated in the fishery since

2009¹⁵⁴ and excludes any new entrants that began fishing after the Council began development of this action to discourage speculative entry.

To accommodate leasing arrangements of AFA BSAI Pacific cod sideboard limits that occurred within AFA cooperatives via civil contracts, Alternative 3 includes an option to transfer QS between LLP licenses. This option provides a 90-day window of opportunity for those involved with leases of AFA Pacific cod sideboard limits via civil contracts to adjust the initial issuance of QS to qualified LLP licenses based on the catch history of the trawl CVs during the qualifying years to account for those leases of 1997 Pacific cod sideboard history. The likely impacts of this option would depend on the success of the parties seeking to adjust the initial issuance of QS to account for their lease arrangements. If the parties are successful in reaching an agreement to adjust the initial issuance of QS, likely some amount of QS would be transferred to LLP licenses authorizing the vessels at the time of implementation that leased some or all the vessels' 1997 Pacific cod sideboard history. In some cases, the transfer of QS would be to LLP licenses that do not have QS assigned to the license while other LLP licenses would have QS assigned to the license. Likely, the QS assigned to LLP licenses without initial issuance of QS would likely lease their CQ to other vessels within the cooperative since these AFA non-exempt vessels have focused their fishing effort on the pollock fishery.

This alternative, like the other action alternatives, only allocates targeted BSAI Pacific cod rather than allocate both target and incidental catch to the cooperatives, NMFS would be required to manage incidental catch of BSAI Pacific cod in other BSAI groundfish fisheries by cooperative vessels and vessels authorized by non-PCTC Program qualified LLP licenses. The addition of an ICA that is managed by NMFS increases the management burden for them, while also reducing some of the potential efficiency gained by cooperative management of incidental catch. See Section 2.10.3 for further information on effects of Alternative 2a on the incidental catch of BSAI Pacific cod.

The structure of the BSAI Pacific cod fishery under the PCTC Program could result in the BS Pacific cod fishery closing on ITAC, which would require sectors that still have Pacific cod allocations to move their vessels into the AI. For many of those sectors, closing of the BS on ITAC could result higher fishing costs and lower harvest of Pacific cod. Reducing this risk slightly under this alternative is a 12 percent set-aside of a cooperative's A season BSAI Pacific cod CQ that may only be harvested from the AI and delivered to an AI shoreplant if the community of Adak and/or Atka files a notice of intent to process. Although there is no requirement that cooperatives harvest their A season AI set-aside, if they did harvest and deliver their A season set-aside, this would shift harvest of Pacific cod that is normally occurs in the BS to the AI, which could lengthen the time the BS Pacific cod fishery open for directed fishing.

The 12 percent set-aside under this alternative is expected to reduce some of the benefits of CQ to the trawl CVs and processors. Processors would likely lose some of the Pacific cod CQ they would have otherwise processed within a cooperative, especially if that BS catch is then taken by members of the HAL C/P, Pot C/P, or trawl C/P sectors. These reduction in benefits would likely be similar to the reduction from Alternative 2b which allocates 10 percent of the Pacific cod CQ to AI shoreplants, but less than Alternative 2a which includes 25 percent set-aside. Trawl CV cooperative members would need to coordinate within and between cooperatives to ensure that the AI set-aside is addressed.

Under Alternative 3, holders of qualified trawl CV LLP licenses with QS can only access that QS through cooperative membership. Depending on the structure of the cooperative contracts, cooperatives members will have the flexibility of delivering to multiple processors. Despite this flexibility, it is likely that established relationships with processors will have an important influence on harvester delivery choices. Relative to Alternative 2b which has no allocation of harvest shares to processors, an allocation of harvester shares to processors under this alternative, which ranges from 5 to 30 percent, would provide for a stronger negotiating position for processors since these shares could be used as an incentive for

¹⁵⁴ LLP licenses that could be assigned QS under Element 7.1.1 are included in this statement due to the business arrangements they developed that allowed other vessel operators to harvest their Pacific cod.

harvester deliveries to that processor. Technical efficiency in processing should improve as processors are better able to schedule crews to process landings. Allocative efficiency should also increase as processors improve product quality and produce higher quality products that cannot be produced under the current fishery status.

Some CV operators could also be impacted by the C/P processing limit included under Alternative 3. As noted in Alternatives 2a and 2b, CVs prefer more potential markets to increase competition for their deliveries. Alternative 3 could constrain the available markets for CVs delivering to C/Ps to provide protection for shoreside processors and the communities where the shoreside processors operate. Many CVs would choose to deliver shoreside regardless of the processing limit on deliveries to C/Ps. However, without the limit more CV operators could deliver to the qualified C/Ps than had in the past. Whether CVs would want to deliver at-sea depends on a variety of factors including the ex-vessel prices offered by processors, the amount of additional CQ the C/Ps could offer vessels that deliver to them, cost differences delivering to C/Ps versus other processors, delivery terms and conditions, and past and current business relationships with processors. The increases in CV deliveries would benefit the C/P firms taking those deliveries, C/P crew on those vessels, and support service providers for those C/P vessels, but negatively impact the shorebased processing firms, the shorebased processing crew, and support sectors that support those plants, as well as impact specific shorebased communities that receive taxes and provide services to the shoreplants. Of the communities that are home to BSAI Pacific cod processors, Dutch Harbor/Unalaska is most likely to derive benefits from both sectors. Akutan is likely to derive benefits from only shorebased plants. The marginal impact (social and economic) of moving a ton of Pacific cod onshore or to the C/P sector are not quantified but are discussed in greater detail under the Impacts to Communities section of this paper.

Unlike Alternatives 2a (that defines the processing limit based on qualifying processing history) and 2b (that defines the limit based on the QS assigned to LLP licenses that were 75 percent owned by eligible C/P firms as of December 31, 2019), this alternative does not include a specific processing limit for eligible C/Ps acting as a mothership or a limit on the number of trawl CVs in the directed BSAI Pacific cod fishery that can deliver to eligible C/Ps acting as motherships.

Element 5.2 (Alternative 2a) would establish a processing limit on the amount of BSAI Pacific cod that may be delivered to eligible C/Ps. That limit would be based on qualifying processing history of the C/P and if the QS assigned to LLP license owned by the firm is greater than its qualifying processing history the limit could be increased up to 125 percent of processing history. Element 5.3 would establish the limit based on QS assigned to LLP licenses that are 75 percent owned by the C/P firms. The reader is referred to the discussion of impacts on CVs under the relevant elements and alternatives discussions. All of the alternatives considered by the Council, except the No Action Alternative, would impose a processing limit on the two C/Ps eligible to act as a mothership. The greatest impact on CVs would be limitation on markets, especially by CVs owned by eligible C/Ps as of December 31, 2019, and other CVs that may find better markets with the C/Ps.

Providing harvest effects of this alternative relatively to specific processing limits for eligible C/Ps acting as motherships is not possible. Once the Council selects a preferred processing limit for eligible C/Ps acting as a mothership, the harvester effects will be updated.

Although harvests will continue to be highly influenced by the timing and location of spawning aggregations under this alternative, like Alternatives 2a and 2b, the alternative could change the geographic distribution and timing of BSAI Pacific cod fishery. Cooperative harvest privileges under Alternative 3 could shift emphasis from a “race for fish,” to an operation that better optimizes timing of harvest of BSAI Pacific cod, which would likely lengthen the fishery for the A season and B season. As noted in the discussion concerning season length in Section 2.10.1.1, the length of the BSAI Pacific cod fishery for the trawl CV section has compressed from a 40-day to 60-day A season fishery to less than two-week fishery in recent years, when the fleet was unable to organize a voluntary cooperative. Under a

compressed Pacific cod fishery, harvesters and processors attempt to maintain market share. As a result, quality could suffer because of the rapid rate of harvest and processing, which leads to the production of relatively lower value and lower quality products. In addition, harvesters are less focused in reducing PSC and safety could be comprised to some degree. Eliminating the race for fish would likely lengthen the duration of the fishery which should slow the flow of Pacific cod through processing plants, increasing product quality, which increases returns from the fishery. In addition, harvesters would likely take steps to reduce PSC and improve safety.

Alternative 3 would likely result in efficiency improvement that would arise from technical efficiency gains from slowing, or otherwise optimizing fishing within a cooperative structure. As noted above, in a slower fishery, participants are expected to modify fishing activities to some degree, which would allow harvesters to focus their efforts on harvesting allocations in a manner that improves technical efficiencies—reducing inputs, harvesting a greater share of the allocation, and increasing the quality of Pacific cod deliveries leading to higher gross revenue per vessel and per-vessel profits. In addition, participants may consolidate fishing up to the use cap and/or vessel cap limits, which for this alternative is 5 percent for ownership and use based on the individual and collective rule and 4 percent use caps for each vessel. These caps provide opportunity for fleet consolidation.

At a 5 percent ownership and use cap, 5 LLP license holders, aggregated by 2020 LLP license holder's address, would be grandfathered at their initial allocation and therefore could not acquire additional allocation, whereas 41 LLP licenses holders¹⁵⁵ could acquire additional LLP licenses as long as the QS assigned to those LLP licenses does not exceed the 5 percent cap.

Given that the grandfather provision applies at the time of implementation of the PCTC Program, transfers of QS between LLP licenses under Suboption 7.1.1 would have to be accounted for when considering the 5 percent ownership and use cap. To accommodate QS transfers under Suboption 7.1.1, the 5 percent ownership cap could be applied after all transfers under Suboption 7.1.1 are completed. This would allow the grandfather provision limit to be determined for each LLP license (QS) holder after the dispute resolution process is complete and all LLP license holders QS is permanently affixed to the LLP licenses they partially or fully own.

At a vessel cap of 4 percent, the BSAI Pacific cod fishery could be harvested by a minimum of 25 vessels, which provides some opportunity for fleet specialization in the Pacific cod fishery noted in Alternatives 2a and 2b. The number of trawl CVs that harvested greater than 4 percent of the BSAI Pacific cod target catch at any point during the 2009 through 2019 period was 20. Recognizing the Pacific cod fishery has operated as a limited access fishery focusing more on the race for fish and that cooperative management of the Pacific cod fishery would allow cooperatives to optimize their vessels by shifting Pacific cod fishing effort to more efficient vessels, there is the potential that a 4 percent vessel limit would be more constraining to cooperatives in optimizing their vessels fishing effort relative to Alternative 2b (5 percent) but less constraining than Alternative 2a (3 percent). The trawl CV sector BSAI Pacific cod apportionment was about 21,000 mt in 2021. Assuming that after deducting the C season apportionment and an ICA, the portion that would be allocated to the PCTC program would be about 16,000 mt. One percent of 16,000 mt is 160 mt, so a 4 percent limit would be about 640 mt. Using the 136 mt trip limit imposed on the GOA pollock fishery as a proxy for trip size in the BSAI Pacific cod fishery, a one percent change is slightly more than one trip (1.2 trips) for a vessel. The actual number of trips would, of course, vary by vessel based on their individual capacity. However, applying the 4 percent limit under the PA, without accounting for a grandfather provision, a vessel would be allowed to make four or five trips per year before hitting the vessel cap. This could limit the number of trips by vessels that want to focus more heavily on the Pacific cod fishery while allowing other vessels to focus on pollock. In terms of length of time spent participating in the Pacific cod fishery, vessels delivering to Akutan, or Unalaska may be able to complete a trip in one day. Depending on their delivery schedule, a vessel could reach

¹⁵⁵ LLP licenses with no owner address listed were not included in these counts.

their cap in about one week if the cooperative allowed them to fish their entire annual vessel limit in either the A or B season. Overall, the cooperative would need to stay within their seasonal limit.

Alternative 3 includes a 25 percent reduction in the amount of halibut PSC apportioned to the trawl CV sector for use in the A and B season BSAI Pacific cod CQ fishery. The amount of halibut PSC for the A and B season QS fishery would be 272 mt and the C season apportionment would be 19 mt. This is after accounting for: 1) halibut PSC apportionment to the trawl CV sector and the AFA C/P sector, 2) a five percent C season apportionment for the trawl CV limited access fishery, and 3) after accounting for the 25 percent reduction in the halibut PSC that would be allocated to the A and B season QS fishery. These halibut PSC limits are based on a 391 mt halibut PSC allowance apportioned to the TLAS BSAI Pacific cod fishery which could change depending on the amount of halibut PSC that would be apportioned to the BSAI Pacific cod during harvest specifications. As noted in Section 2.9.3, the combined 291 mt halibut PSC limit would have been exceeded seven of the last 17 years (2004 to 2020). Further, utilizing the historical average halibut PSC rate of 0.010 mt for one mt of targeted BSAI Pacific cod (2004-2020), an allocation of 291 mt of halibut PSC to the trawl CV sector would have been on average insufficient to harvest the sector's BSAI Pacific cod target catch eight of the past 17 years (2004-2020). Factoring in incentives cooperatives would likely utilize to reduce halibut PSC rates and the use of pot gear to harvest CQ under this alternative, there is the potential that a 25 percent halibut PSC limit reduction to the trawl CV sector for use in the A and B season fishery could be limiting enough that cooperatives could leave CQ unharvested under higher BSAI Pacific cod TACs.

Alternative 3 also includes a 35 percent reduction in the amount of crab PSC apportioned to the trawl CV sector. The primary crab PSC constraint is red king crab Zone 1. As noted in Figure 2-24, some of primary BS trawl grounds for Pacific cod are in Zone 1 crab savings area, so closure of the area during the A season or B season could result in a significant disruption in the Pacific cod fishery for the cooperative. As noted in Alternative 2a (Section 2.10.1.2), the harvest specification process used to set PSC limits at the fishery level could reduce some of the potential for red king crab (Zone 1) to constrain Pacific cod fishing in Zone 1 crab savings area. Another approach the Council might consider in helping to reduce the potential for red king crab (Zone 1) closures at the cooperative level is to manage this PSC limit at the sector level. This would provide greater flexibility for cooperatives to manage the red king crab (Zone 1) PSC limit amongst all the cooperatives which could reduce the risk of Zone 1 closure at the cooperative level instead of each cooperative being responsible for managing their own red king crab (Zone 1) PSC limit. Finally, if the Council selects Option 6.2 which allocates CQ to an entity representing the AI community instead of the current selection of Option 6.1, which is a set-aside of BSAI A season CQ to be harvested and delivered to an AI shoreplant, allocating crab PSC is not necessary since none of the crab savings areas are in the AI, and any allocation of crab PSC limits to an AI cooperative would in turn lower the amount of crab PSC allocated to cooperatives that operate in the BS. As a result, allocating crab PSC to an AI cooperative if Option 6.2 is selected as the preferred option would allocate an already constraining red king crab (Zone 1) PSC limit to a cooperative that does not need red king crab (Zone 1) since the AI operating area is outside of Zone 1, while shortchanging the other cooperatives that operate in the BS of valuable red king crab (Zone 1) PSC.

Alternative 3 only allocates A and B seasons CQ, unlike Alternative 2b which allocates all seasons, leaving the C season as a trawl CV limited access fishery. As a result, the likelihood of continued reallocation of Pacific cod TAC to other sectors that rely on these reallocations is the same as Alternative 2a but is greater than Alternative 2b. As noted in Section 2.8.3, which provides greater detail on the effects of alternatives that allocate only the A and B seasons under the PCTC, reallocation of Pacific cod ITAC to other sectors in the fall could be crucial for those sectors that typically receive a portion of the trawl CV Pacific cod reallocations. Under Alternative 3, reallocations of any remaining A and B season ICAs, Pacific cod CQ, and C-season trawl CV sector allocation that NMFS projects to go unused are subject to reallocation to other sectors under current reallocation rules after August 1 to accommodate post-delivery transfers. Typically, the fall reallocation from the trawl CV sector is usually enough to

allow the HAL/pot CV less than 60 ft sector to remain open during the fall. Based on testimony from some HAL/pot CV less than 60 ft sector participants during previous Council meetings, the fall reallocation of Pacific cod is an important revenue source for those sector participants active in the fall Pacific cod fishery.

The implementation of the PCTC Program will result in additional costs to the fleet including the 3 percent of ex-vessel value cost recovery fee, potentially increased monitoring and enforcement costs, additional costs associated with cooperative reports, and costs associated with creating and operating the cooperative. These costs are expected to be less than benefits gained through improved technical efficiency.

2.10.2. Effects on Processors

There is an expectation that the PCTC Program will impact processors as well as harvesters. The structure of the LAPP and the first wholesale markets for Pacific cod harvested under the program will, in part, determine the impacts of the program on processors relative to the No Action alternative. It is also anticipated that not all processors, within and across sectors, will be impacted the same and those impacts could be either positive or negative depending on the program's structure.

2.10.2.1. Alternative 1: Status quo (No Action)

Processing participation and practices under the No Action alternative are likely to be similar to current participation and processing practices. Shorebased processor participation will occur primarily at Akutan, Unalaska/Dutch Harbor, and by C/Ps acting as motherships and processing at-sea. Smaller amount of trawl caught Pacific cod could be processed at King Cove and Sand Point plants as those plants are situated relatively close to the fishing grounds (See 2.8.7.5). The plant that has operated in Adak is currently not active and future activity will be constrained by no AI shoreplant allocation since Amendment 113 was vacated. Processing activity is expected to be most concentrated in Akutan and Unalaska/Dutch Harbor, especially during years the AI shoreplants are not active or protected through a set-aside or allocation. Floating processors operating in the BS are expected to be active and operate in protected Unalaska bays or at Akutan (see Section 2.8.7.5). Floating processors have been operated by two firms since 2004, with one firm's floating processors participating in the past two years of available data. C/Ps acting as a mothership will be limited to the two vessels that are permitted to take BSAI Pacific cod deliveries from trawl CVs under Amendment 120 to the BSAI FMP (see Section 2.8.7.8). The three AFA motherships have not been active in the fishery since their very limited participation in 2016 and are not expected to increase participation under the No Action alternative (see Section 2.8.7.9).

Shorebased processors negotiate ex-vessel prices, provide markets and other services for harvesting vessels under conditions where neither has protected access to a predetermined amount of the BSAI trawl CV sector apportionment. Historically, this results in harvesters catching as much Pacific cod as they can before the fishery is closed to directed fishing and has resulted in short processing seasons (see Section 2.10.1.1). The A season fishery was operated under a voluntary cooperative in 2021, in part because of the unique conditions resulting from the COVID-19 pandemic. It is unlikely a voluntary cooperative structure could be maintained in the future because of the large number of LLP licenses that could be used to fish Pacific cod in the BSAI. Because shorebased processors have traditionally rushed to process landings in an attempt maintain market share while producing sufficiently high-quality products, quality may suffer due to the rapid rate of harvest and processing, which can lead to the production of relatively lower value and lower quality products. These issues are compounded when the Pacific cod TACs are low, the A season is short, and there is increased pressure to ensure the plant is able to meet contracts to deliver a specific amount of product to clients.

For shorebased processors to compete in the fast-paced fishery, they have invested in production capacity to process high volumes of Pacific cod in a short period of time. Investments were used to modernize and increase capacity in recent years at their Pacific cod plants and Pacific cod processing lines (see Section

2.9.5.2). The investments have resulted in the shorebased processors producing mostly fillets, while moving away from H&G products. Fillets are typically sold to restaurants and food service firms that supply the U.S market. H&G products are sold primarily to foreign markets for reprocessing but may also be sold into domestic markets.

Pacific cod products compete with other species in the world whitefish market. Quality of the Pacific cod products will impact the first wholesale price they receive for their production (see Section 2.8.8). The shifts in supply associated with Pacific cod harvested by the BSAI trawl CV sector are expected to have minimal impacts on the world market supply of whitefish.

All else being equal, BSAI Pacific cod processors are expected to have the ability to utilize their market power to influence ex-vessel prices more than they can use their market power to change whitefish prices established at the first wholesale level in the world market. BSAI shorebased processors market power is limited by competition for deliveries. However, they often have relatively long partnership histories with many of the vessels that deliver Pacific cod. Some processors also have an ownership interest in some of the vessels that deliver to them. Relationships with the “independent” CVs are often established across more than one fishery. For example, AFA vessels may be in a pollock cooperative with the same processor they deliver Pacific cod. Shorebased processors and their harvesting fleets that have a business relationship that spans additional fisheries may not negotiate Pacific cod ex-vessel prices in a vacuum that does not consider the broader business relationships. Because of those boarder relationships the shoreplants may have either more or less market power over their fleet as they would if the Pacific cod fishery was their only business interaction with their CV fleet, depending on individual situations.

Neither the No Action alternative nor any alternative considered in the current motion limits the number of processors that may take deliveries from BSAI trawl CVs harvesting Pacific cod in the directed fishery. The extent to which new processors can enter the fishery depends on the current processor’s fleet retention, the structure of the proposed program, and multitude of other conditions. The CVs will need to consider the interaction of their participation in the BSAI Pacific cod fisheries with their participation in other fisheries. Overall, it is possible that some harvesters that participate in diverse fisheries throughout the year could choose to remain with a processor offering lower Pacific cod prices, if lower revenues for Pacific cod were to be compensated for by increased revenues from landings in other fisheries or other operational considerations provided by the processor (e.g., fuel, storage, or pre-season loans).

Floating processors that process in protected bays within the tax jurisdiction of Unalaska have historically taken deliveries from the BSAI Trawl CV sector and some activity by this sector is expected to continue under the status quo. Two firms have been the primary operators of vessels in this sector (see Section 2.8.7.5). One firm has operated a single floating processor and a second firm has operated as many as four vessels in the fishery since 2003 but has not been active since 2018. The firm with the single vessel that operates, has continued to be active in the fishery and also operates at least one shoreplant that takes deliveries of BSAI Pacific cod from trawl CVs. The vessel operated by that firm is expected to continue to operate under the No Action alternative. The vessels operated by the other firm may or may not reenter the fishery. Information cannot be presented on the amount of fish delivered to this sector or their production because only two firms participated.

Under the No Action alternative, two C/Ps acting as a mothership will be permitted to take deliveries of BSAI Pacific cod harvested under the directed fishery of Trawl CV sector apportionment. Deliveries to motherships are made by transferring codends from the CV to the mothership. These C/Ps currently produce mostly whole and H&G products. Catcher/processors are likely to continue producing these products, processing catch shortly after it is caught. Most vessels in the sector are equipped for producing a few minimally processed product forms because of size limitations for the plant, it is unlikely that any of these vessels will change plant configurations to process higher-valued, more highly processed product

forms. All other trawl C/Ps will continue to be prohibited from processing Pacific cod harvested from the directed¹⁵⁶ BSAI Pacific cod trawl CV sector fishery.

The race for fish structure of the BSAI trawl CV Pacific cod fishery has allowed C/Ps to offer markets close to the fishing grounds. Proximity to the fishing grounds made it possible for CVs to have short turn-around times when delivering and eliminated the need for the CV crew to bleed the Pacific cod before they were delivered. Given the limited markets at shoreplants and floating processors these attributes were attractive selling points for C/Ps wanting CV deliveries. The reduced costs and delivery times typically required that CVs accepted an ex-vessel price that was lower than paid by the shoreplants. This advantage is greater under the No Action alternative than it is under any of the action alternatives.

Catcher vessels that deliver Pacific cod to the C/Ps may be owned by the same firm or owned by a different firm and contracted to deliver some or all of their Pacific cod catch to the C/P. Because of the structure of the Pacific cod fishery where C/Ps have their own allocation, it is anticipated that the vessels in the sector will supplement the C/P allocation and process as much of the trawl CV sector A season allocation as their plant has capacity to process while the CV trawl fishery is open to directed fishing and catch rates make the fishery viable. Given the current duration of the fishery this is anticipated to take place over a two to three-week period starting when the BSAI is opened to directed trawl fishing on January 20th, if the sector is unable to continue the voluntary cooperative. Harvests are expected to first take place in the BS and occur later in the winter in the AI. The C/Ps processing participation in the AI will be highly dependent on whether the AI shoreplant(s) are active during a year. Under current conditions it is less likely that a plant will be active than in the recent past¹⁵⁷. In years the AI shoreplant may be active, the C/Ps will have less opportunities to the process Pacific cod as a MS in the AI. When the AI shoreplant(s) are not operating during a year, the C/Ps have traditionally participated in the AI and could process a substantial portion of the AI TAC. However, the size of the AI TAC and the cost of operating in the AI will continue to impact decisions to fish/process in the area.

The three AFA true motherships have had very limited participation in the BSAI Pacific cod fishery since 2003. These vessels are not expected to be consistent or substantial participants in the BSAI Pacific cod fishery in the future because of their reliance on the BS pollock and West Coast whiting fisheries. The timing of the two fisheries and the AFA sideboard restrictions, among other things, limit their ability to expand operations in the BSAI Pacific cod fishery.

2.10.2.2. Alternative 2a: Multiple Cooperatives, Processor QS Allocations, AI Set-aside, and Gear Conversion

The PCTC Program may result in a wide range of impacts to shorebased processors, floating processors operating in protected waters, AFA true motherships operating at sea, and C/Ps acting as a mothership. Effects of the proposed program will vary depending on the specific elements that are included in the program. Alternative 2a and Alternative 2b were developed by staff to highlight the impacts of selecting certain elements to contrast against the Council developed PA.

Alternative 2a elements that are expected to have the greatest impacts on the various processing components of the fishery include Element 1 (no limit on the number of cooperatives that may form or the number of LLP licenses required to form a cooperatives), Element 5 (processor and community provisions), Element 6 (AI Processor Provisions), Element 7 (transferability), Element 8 (ownership and use caps), Element 10 (share duration), and Element 11 (monitoring and enforcement).

¹⁵⁶ NMFS will need to distinguish incidental and directed landings of Pacific cod for all sectors. Directed deliveries to motherships are calculated on a weekly basis and shoreside deliveries are calculated by trip. The CAS requires that catch submissions identify the management program under which the harvest was taken. This could result in deliveries of individual codends that are over the Pacific cod MRA, but the weekly Pacific cod amount would be under the MRA and would be deducted from an ICA.

¹⁵⁷ See the discussion in the harvester impacts section.

The Council considered, but rejected, a two-cooperative model for this program, in part because of the complications that it could create having multiple processors associated with a cooperative. All of the alternatives currently being considered by the Council are similar in that they allow multiple cooperatives to form. Alternative 2a would allow one or more LLP licenses to form a cooperative with a processor, and Alternative 2b that would require three LLP licenses and an associated processor to form a cooperative. The Council's PA specified that a minimum of three LLP licenses would be required to form a cooperative with a processor. However, every cooperative that is allowed to form under all the alternatives would need to be associated with a processor.

Allowing multiple cooperatives to form will provide processors opportunity to work closely with the vessels that are associated with their cooperative and will not force multiple processors to be associated with the same cooperative. This will provide both harvesters and processors with substantial flexibility and prevent placing processors in a situation where they are considered to be working too closely together to set prices, etc. However, none of the cooperatives that are allowed to form are FCMA cooperatives and are only intended to conduct and coordinate harvest activities.

Because the harvesting cooperative must form in association with a processor, the harvesters will work with a processor during the cooperative formation process. It is anticipated that harvesters will tend to join a cooperative with the processor they have established a good working relationship. The flexibility to join a cooperative on an annual basis means that harvesters have the opportunity to move to a different cooperative, annually. The ability to change cooperatives creates an incentive for harvesters and processors to develop and maintain a good working relationship after the cooperative is formed. If a processor associated with another cooperative offers a vessel a better contract or the harvester has a conflict with the processor in their cooperative, they could move to different cooperative the following year. Likewise, it is assumed that if processor does not want to accept deliveries from a harvest vessel, because the operator does not agree to the delivery terms and conditions or for any other reason, it would not be required to take those deliveries.

Business relationships the CVs have with the processor either through ownership, control, or other working relationships is expected to impact where the CVs will deliver Pacific cod under the PCTC. As shown in Table 2-142, CVs that have an AFA pollock allocation deliver about 85 percent of their BS Pacific cod to the same processor they deliver their pollock allocation. Only one vessel has fished for more than one AFA cooperative after 2016. This indicates AFA harvesters and processors have developed a relationship that has resulted in stable pollock and Pacific cod delivery patterns.

The allocation of harvest shares to processors is one of the most controversial decisions of the proposed program and the concern stems from the related issue of fairness. The processor harvest share allocation is proposed to address the perceived inequity of a more traditional harvester-only LAPPs, in which market power may shift more towards harvesters relative to the No Action alternative. The goal of the processor allocation has been described by the Council and some members of industry as balancing the market power of the two sides to help foster strong and stable business relationships that allows the proposed program to benefit both sectors. Stated another way, the structure of the program would not cause harm to one sector or the other. A concern expressed by some harvesters is the question of appropriate division of rents and how that would change with an allocation of harvest shares to processors. Harvesters may also be concerned about the associated reduction of underlying asset value of the QS that would not be allocated them. However, they would realize an increased asset value for the QS they are allocated under Alternative 2a. Both of these issues are discussed in detail under Section 2.8.5.

Alternative 2a would allocate 30 percent of the harvesting shares to processors. The division of that allocation among processors would be based on their processing of targeted BSAI Pacific cod during the qualifying period established under Element 2. This percentage represents the largest percentage allocation of harvest shares to processors that the Council is considering. The allocation based on processing would be in addition to any harvester allocations that are issued to LLP licenses that are either

owned or controlled by the processors. As discussed in Section 2.8.5, combining the amount of QS issued to processors either through a direct allocation under Element 5.4 or indirectly through their ownership or control of LLP licenses would result in the processors controlling close to 50 percent of the total QS issued. Not all processors own or control LLP licenses. Processors that do not own or control LLP licenses with QS would only control the use QS derived from the processor allocation of harvest shares. Without a processor allocation of harvest shares they could be in a weaker bargaining position than other processors that do own or control harvest shares on LLP licenses. Allocations associated with processor owned LLPs will, in most cases, be used to support CVs the processor owns. Without that allocation the processor owned vessels would not have access to CQ to fish at historical levels.

The analysts have concluded that they do not have sufficient data to estimate an “optimal” allocation of harvest shares between the harvesting and processing sectors. As discussed under Section 2.8.5, the economic literature ranges from supporting allocations to cover processor’s sunk costs to indicating there is little or no need for processor allocations of harvest shares to ensure that market power between harvesters and processors allows a fair outcome to both sectors. Since staff are unable to provide a quantitative estimate of the appropriate percentage of QS allocated to processors to provide a “fair” outcome, the analysis relies on a qualitative discussion of the issues.

The allocation of processor issued harvest shares could either strengthen current business relationships or limit the markets that are economically viable to harvesters, if the cost of moving between processors is too high in terms of forgone harvest opportunity because other processors cannot or will not offer an ex-vessel price that is sufficient to compensate the CV owner for the QS that the CV’s original processor controls. Depending on the relationship between the two entities, CVs and processors could develop a long-term strategy to divide rents that would benefit both parties. This has been achieved under the AFA program where vessels and processors have developed stable, long-term working relationships. If the parties do not work as well together and the CV feels they are disadvantaged, the owner could either change cooperatives and potentially suffer a net revenue loss or remain with the original cooperative and accept the terms it is offering.

A concern expressed by the processing sector is that a harvester only allocation (Alternative 2b) will result in the processors competing for deliveries and driving up the ex-vessel price to the point that they are not even covering costs. The competition for deliveries would result because the harvesters could spread fishing out over a longer period than has occurred in the most recent years. Longer fishing seasons would cause the millions of dollars in investments that processors have made in new Pacific cod specific processing plants to be underutilized. Some of the shorebased processing capacity that has been developed and focuses on high quality fillet production could be underutilized or unnecessary under an extended season. Because of the specialized nature of the plants and equipment many of those assets cannot be utilized to process other species.

Products produced by shore-based plants, under this alternative, are not expected to change from the status quo for plants in Akutan, Anchorage, and Dutch Harbor/Akutan. Shore-based processors in other locations could increase production of fillets. Share allocations to cooperatives should provide the ability to improve quality of landings. These quality improvements should provide processors with the ability to continue to produce high value products. Whole and H&G products were the primary products produced by shore-based plants most years from 2004 through 2009 period,¹⁵⁸ but fillet production has increased since 2009 and has overtaken H&G as the leading product form (see Table 2-175). The most recent years of data (2017 through 2019) indicate that fillet production accounted for about 90 percent of the round weight of Pacific cod delivered to these plants. The percentage of total first wholesale value was greater than 90 percent, as expected due to the higher value of fillets relative to other product forms. Demand for products as reflected in the first wholesale price for various products, and production costs will determine the products produced. Processors are expected to make rational economic decisions and will provide the

¹⁵⁸ Based on finished weight and not round weight used to produce the products.

products that are most profitable within the production constraints they operate. Therefore, even though recovery rates may be substantially lower and production costs higher for fillet production, the expected return on these higher valued products may be sufficient to warrant increasing fillet production, if quality can be maintained.

Table 2-175 Shorebased processors in Akutan, Anchorage, and Dutch Harbor/Unalaska percentage of Pacific cod product (converted to round weight) and by first wholesale value, 2004 through 2019

Product	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Product weight converted to round weight																
Fillet	46%	52%	33%	31%	32%	78%	57%	58%	58%	77%	62%	64%	85%	90%	89%	92%
H&G	33%	32%	57%	61%	62%	18%	42%	41%	42%	22%	38%	36%	15%	10%	11%	7%
Salted & Split, Split	19%	14%	9%	8%	6%	3%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Whole, Bled	2%	2%	1%	1%	0%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
First wholesale value																
Fillet	40%	56%	35%	33%	35%	85%	63%	60%	66%	85%	67%	68%	89%	93%	92%	95%
H&G	29%	26%	54%	59%	63%	13%	36%	39%	34%	15%	33%	32%	10%	7%	8%	5%
Salted & Split, Split	30%	17%	10%	8%	2%	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Whole, Bled	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Source: AKFIN summary of CAS data

Table 2-176 indicates that production of fillets at shore-based plants located in Adak, Sand Point, and King Cove was typically lower than for the above grouping since 2018. That reduction may be in part driven by the increased pace associated with shortened season length those years. In some, cases it may also be due to processing capacity being unable to keep pace with the flow of fish into some of the plants, so those plants in aggregate processed products that required less time. If processors have more time to process deliveries, the amount of Pacific cod processed into fillets and other high value products may increase relative to current levels to more closely reflect what occurred in Akutan and Dutch Harbor/Unalaska.

Table 2-176 Shorebased processors in Adak, King Cove, and Sand Point percentage of Pacific cod product (converted to round weight) and by first wholesale value, 2004 through 2019

Product	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Product weight converted to round weight																
Fillet	38%	47%	65%	36%	44%	c	c	79%	59%	64%	c	c	c	91%	51%	70%
H&G	57%	53%	35%	64%	56%	c	c	21%	41%	34%	c	c	c	9%	49%	30%
Salted & Split, Split	5%	0%	0%	0%	0%	c	c	0%	0%	0%	c	c	c	0%	0%	0%
Whole, Bled	0%	0%	0%	0%	0%	c	c	0%	0%	1%	c	c	c	0%	0%	0%
First wholesale value																
Fillet	39%	38%	67%	38%	46%	c	c	85%	52%	76%	c	c	c	89%	52%	79%
H&G	59%	62%	33%	62%	54%	c	c	15%	48%	24%	c	c	c	11%	48%	21%
Salted & Split, Split	2%	0%	0%	0%	0%	c	c	0%	0%	0%	c	c	c	0%	0%	0%
Whole, Bled	0%	0%	0%	0%	0%	c	c	0%	0%	1%	c	c	c	0%	0%	0%

Source: AKFIN summary of CAS data

This group of processors are expected to have less BSAI Pacific cod production under the PCTC compared to the previous group of processors, especially in years the AI shoreplant(s) is/are not active. During the recent years when the AI shoreplant had a set-aside under Amendment 113, it resulted in increased deliveries to the plant.

None of the alternatives considered by the Council limit the number of processors that may take deliveries from BSAI trawl CVs harvesting Pacific cod in the directed fishery. The extent to which new processors are able to enter the fishery depends on the current processor's retaining their fleets and the structure of the proposed program. The CVs will need to consider the interaction of their participation in the BSAI Pacific cod fisheries with their participation in other fisheries. Overall, it is possible that some harvesters that participate in diverse fisheries throughout the year could choose to remain with a processor offering

lower Pacific cod prices, if lower revenues for Pacific cod were to be compensated for by increased revenues from landings in other fisheries or other operational considerations provided by the processor (e.g., fuel, storage, or pre-season loans).

The structure of Alternative 2a could also give current processors an advantage, relative to only allocating harvest shares to LLP licenses held by CV operators, since they would be allocated 30 percent of the harvest shares based on their processing history. As described in Section 2.9.5.2, processors could utilize that quota to retain their current fleet or attract new vessels. Processors that do not have access to quota initially allocated to them may be at a disadvantage. They would not be able to provide enticements of additional CQ for CVs to deliver to them unless the processor was able to purchase quota. Acquiring that quota would incur a substantial cost that would reduce the overall profitability of the processor if it was not passed on to the fleet through lower ex-vessel prices. Paying lower ex-vessel prices would create a disincentive for vessels to deliver to the processor if profits from increased landings did not offset the lower gross ex-vessel price they receive for their deliveries.

An option being considered would not allow processors to assign more harvest shares to a CV owned by that processor than the CV would have brought into the cooperative “absent any processor held shares.” It is assumed that the phrase means that the processor owned CV could be assigned the amount they bring into the cooperative plus an additional amount that is equal to the percentage of harvest QS assigned to processors. Under Alternative 2a the processors are allocated 30 percent of the harvest QS, so processor owned CVs could be assigned up to 130 percent of the amount the CV brought into the cooperative. That quota could also be used to retain CVs in their cooperative by offering more quota than they would have had without processors being assigned harvest shares. Reducing the amount of Pacific cod assigned to their CVs would negatively impact the compensation the crew on those vessels receive from the Pacific cod fishery.

Public testimony is expected to provide the Council additional information beyond that currently available to the analysts¹⁵⁹. Processors have advocated for an allocation of 30 percent of the harvest shares. In general, harvesters have supported processor shares, but have indicated support of an allocation of 30 percent may be larger than they support. Some independent CV owners that are not part of the AFA have not supported any allocation of harvest shares to processors. These CV operators could be in the weakest bargaining position for Pacific cod deliveries since they cannot use their pollock allocation as leverage in the negotiations and they may be concerned that it could set expectations for future LAPPs.

Alternative 2a is expected to, in general, create some or all of the impacts listed below based on the cooperative management structure.

1. Raw fish costs may not increase relative to first wholesale prices if 30 percent of the QS is allocated to processors. That amount is expected to be sufficient to ensure that processors are not harmed relative to the No Action alternative. For a CV to leave a cooperative with the processor they traditionally delivered to may require them to forgo 30 percent of their Pacific cod harvest, if the new processor cannot compensate the CV operator for changing cooperatives. Forgoing 30 up to percent of their Pacific cod is likely a strong incentive not to change cooperatives and could result in stable delivery fleets for processors.
2. Potential regional shifts in landings under the control of processors could occur. This is most likely to occur when processors have traditionally used more than one plant to process Pacific cod and the slower pace of the fishery could allow them to process more or all of the Pacific cod at

¹⁵⁹ Limited discussions with various members of industry have indicated that some harvesters feel the 20 percent allocation to processors used in the whiting fishery may be too large, because of differences in the two fisheries. On the other hand, some processors are concerned that at the low to mid-range of the allocation processors would lose too much market power. The AFA cooperative model that allows 10 percent of a cooperative’s quota to be delivered to another processor was cited as an example of how harvesters use leverage to negotiate price under a current cooperative program. It is anticipated that these discussions will also be presented to the Council during public testimony.

their primary location. The processing facility cap of 25 percent with a grandfather provision could limit this activity.

3. Increase quality of products produced, resulting in greater first wholesale value of the products. This would result from both higher quality fish being delivered to the processor and the processor having more time to carefully process those fish into a higher quality product.
4. Increase in the processing of bycatch in the Pacific cod target fishery could occur because processors may have more time to process the catch. This would be a limited benefit, especially during seasons when the Pacific cod are aggregated and bycatch of other species is low.
5. Lower cost of production in the Pacific cod fishery could occur due to better timing of deliveries, longer season length, and increased harvest and more utilization of processing capital to improve the Pacific cod production lines. Processors will still want a sufficient flow of product through the plant to efficiently utilize their plant and crew.
6. Increased compliance costs could occur if first receivers must pay for the cost of shoreside catch monitors to observe offloading of CQ and increased fees if the processor pays a portion of the cost recovery fee.
7. It is anticipated that increased benefits from the program will outweigh any increase in management costs or fees.
8. Consolidation could occur across shoreside processing firms or within firms, reducing total capital costs and improving technical efficiencies.
9. AI shoreplants would have less power relative to Alternative 2b but the same as the PA, because they (or an entity representing the community) are not allocated CQ that they can assign to CVs. Instead, CVs and their cooperatives will have greater power to determine deliveries to AI shoreplants. Under Alternative 2b the cooperatives would control the CQ and have more power to determine how to deliver the set-aside to the AI shoreplants.

Bullet one above considers market power and its impact on the division of rents associated with the PCTC Program, Peña-Torres et. al. (2019) examined the collective bargaining efforts of small distinct units of fishermen with a monopsony-like buying sector. The study found that regional ex-vessel price increases occurred only when fishermen were able to achieve better organized fishermen's associations. This may not be expected to occur when harvesters are granted a specific harvest privilege under the proposed PCTC Program structure, the cooperatives that are formed are not FCMA cooperatives that negotiate ex-vessel prices and the 30 percent allocation to processors would limit the harvesters market power. Blomquist et al (2015) found that fishery regulations might not only affect the harvest fleet, but also the relation between fisheries and ex-vessel prices. His paper estimated the price effects of management reform in the Swedish Baltic Sea cod fishery. Vessels were given annual non-transferable catch quotas and it was estimated that the new management system altered the bargaining power between harvesters and processors in the ex-vessel market for fish. The authors used a difference-in-differences estimation approach and found that harvesters improved their bargaining power and were paid a higher price. However, the price increase was estimated to be small, about 2% of the pre-reform price.

Birkenbach et al. (2015) studied U.S. fisheries that changed to LAPP management to determine the impact of the management change on season length and ex-vessel prices. To compare changes, they used the Fish Price Index (FPI) (Tveteras et al. 2012) as opposed to a direct comparison of reported prices pre and post LAPP implementation to account for overall changes in fish prices. Their conclusion was that evidence for price increases is weak, and, on average, their models suggest price decreases. Ex-vessel price changes for Alaska pollock and all Rockfish Program species (except Pacific cod) were classified as "ambiguous," with Pacific cod prices increasing. Potential reasons were discussed by Birkenback et al. (2015) why ex-vessel prices may or may not change under a LAPP.

1. Catch shares are, in fact, associated with price depression, either directly or through some process that is correlated with the implementation of catch shares. The mechanisms by which the former

might occur are unclear, but this would mean that the hypothesis regarding improved product quality, longer fishing seasons, and enhanced market opportunities is inaccurate or incomplete.

2. Price reductions in the post period sometimes involve groupings of species rather than individual species. With grouped species, it is possible that the mix of more valuable versus less valuable species within that grouping is changing over time in a way that differs across treatment and control groups. If this occurs, the price changes we observe could result from exogenous shifts in species shares within these groupings rather than the catch share programs themselves. The PCTC is focused on a single species and may be less applicable to the species grouping argument.
3. Coincidence of other events, which is particularly challenging from an identification standpoint. For example, the Deepwater Horizon oil spill occurred in April 2010, just a few months after the switch to catch share management of all the relevant Gulf of Mexico species except red snapper (which had adopted catch shares in 2008). In the case of Alaska species, the tariffs that were imposed on species being sent to China for reprocessing. It is acknowledged that H&G products would be directly impacted by this, perhaps more than fillet prices that sold directly into the U.S. market.
4. Some of the catch share fisheries saw ex-vessel prices increases relative to the FPI despite decreasing relative to the matched control. These results hint that ‘a rising tide lifts all boats’ in the sense that catch share implementation improves market outcomes for the treated and the control fishery. This is a desired result of the PCTC program.

Other economic literature has analyzed the effect of LAPPs, with harvest privileges exclusively assigned to harvesters, on rent distribution between harvesters and processors (Matulich, Mittelhammer, and Reberte 1996; Matulich and Clark 2003; Hackett et al. 2005; McEvoy et al. 2009). The literature published by these authors indicates that since LAPPs are expected to reduce the rate of harvesting, over-capitalized (sunk capital) processors will bid up the ex-vessel price of fish, thus transferring some or all of the LAPP generated rent gains to the harvest sector. Additional research associated with this literature indicates that depending on the degree to which production in the fishery is dominated by a few large firms on the supply and demand sides and the sunk cost of capital invested in the fishery, price bargaining between harvesters and processors will determine how much each side receives from LAPP driven rents (Fell and Haynie 2011; Blomquist, Hammarlund, and Waldo 2015). As discussed in Section 2.8.5, Guldin and Anderson (2021) found that processors used processor-owned quota in informal ex-vessel market negotiations. Using that quota, processors were able to match a portion of deliveries and attract landings to their facility while charging CV operators a contracting premium on quota pounds transferred during some seasons when the whiting TAC was close to binding. Processors also utilized the quota during seasons when the TAC was not binding but charging price premiums was not evident in the data. The paper concluded that additional research is required on the allocation of harvest shares to processors policy, particularly regarding welfare outcomes of harvesters and processors and overall efficiency.

Any initial allocation of harvest shares to processors also includes the long-term underlying value of the shares. Alternative 2a would allocate 30 percent of the harvest shares to processors, so 30 percent of the long-term asset value would be allocated to the processing sector and 70 percent would remain with the harvesting sector. Certain processors would also be allocated QS based on LLP license ownership. The value of QS is often reported to be used as collateral for loans¹⁶⁰ or as compensation for firm exiting the fishery. Processors would be able to use that value for collateral for loans or to be compensated for exiting the Pacific cod fishery. In addition, if processors lease quota holdings at a contracting premium, rents may also be reallocated from the harvesting sector to the processing sector.

¹⁶⁰ Collons, Kacy A. 1996. ITQS as Collateral Rightly Understood: Preserving Commerce and Conserving Fisheries. *UCLA Journal of Environmental Law and Policy*, 14(2). <https://escholarship.org/uc/item/8g02s5c1>

The AFA cooperative program in the North Pacific has resulted in the harvesters and processors working more closely and are reported to have established ex-vessel prices based on a percentage of first wholesale price. It is anticipated that a similar model could be established to determine ex-vessel prices by harvesters and processors in the Pacific cod fishery, especially since there is a close linkage for the AFA vessels pollock cooperative and where they have recently delivered their BS Pacific cod harvests. Whether that will be an outcome of the program is not known.

Allocations of harvest shares to processors in the Pacific whiting fishery were set at 20 percent of the harvest shares. Differences in the structure of the two fisheries could imply that the same percentage may not be appropriate for the BSAI Pacific cod fishery. It is anticipated that public comment by participants on both sides of the issue will help refine an appropriate percentage in the BSAI Pacific cod fishery.

The AI shoreplants would not receive an allocation under Alternative 2a from either Element 5.4 or Option 6.1.¹⁶¹ Instead, AI shoreplant protections would be provided by establishing a 25 percent set-aside of the A-season harvest. Cooperatives would be required to set-aside for harvest and delivery at least 25 percent of the A season apportionment from the AI for delivery it to an AI shoreplant. While there is not a requirement that the cooperatives deliver that fish to the AI shoreplant(s), it is assumed that cooperatives would want to capture some value from that quota by harvesting it or leasing it to another cooperative to harvest and deliver to the AI shoreplant if the benefits are greater than waiting for the CQ to be delivered to non-AI shoreplants during the B season. Because the Pacific cod that is set-aside can only be delivered to the AI shoreplant(s) it is assumed that the harvesters will have more bargaining power over delivery terms than they would if the processor held the allocation (Alternative 2b). Option 6.1 provides a discussion of the amount of Pacific cod that would have been included under the set-aside based on the 2003 through 2020 TACs. Each year the set-aside would have been greater than the 5,000 mt reserved for the AI plants under Amendment 113. The 5,000 mt apportionment in Amendment 113 was described as a minimum amount needed by the AI shoreplants to remain viable. Some years the apportionment would have been almost twice the 5,000 mt. Based on TACs during those years it appears that the 25 percent set-aside would provide similar or greater benefits, most years, to the AI shoreplants than would have been achieved under Amendment 113, if they are able to reach an agreement with the cooperatives to deliver the Pacific cod. Any increased benefit to the AI plants would result in a reduction in benefits to the BS processors that have less Pacific cod available for delivery. The reductions in economic benefits may or may not be proportional in terms of their magnitude, so the increased benefits to the AI shoreplants may not offset the losses to the BS plants. The social impacts of the action are likely even more difficult to quantify and may be determined by policy makers to partially or totally offset the reductions in economic benefits from the fishery.

Option 6.1 could provide cost savings since the vessels delivering to AI shoreplants are able to use or manage the AI CQ reserve as part of their individual allocation. However, it is often reported that costs of fish and processing in the AI are greater than in the BS, so the overall cost savings may be less than if the entire allocation was taken from the BS. AI shoreplants should be able to work with the harvest fleet that agree to deliver to them to establish a rational delivery pattern that would allow the processing plant to produce higher quality products than when the harvest vessels are competing for a share of the catch and delivering Pacific cod the plant in a more compressed period. A set delivery pattern for vessels in the fleet would allow the capacity of its CV fleet to match the target level of delivery more closely, since vessel operators would know the amount of catch that is expected to be delivered over a given period.

Whether the plant(s) will be able to utilize the set-aside will depend on the intercooperative agreements that must define how the cooperatives will deliver Pacific cod to the AI shoreplants. If the AI shoreplants and the cooperatives are unable to develop a good working relationship, the cooperatives could simply

¹⁶¹ Based on the wording in the motion, staff is uncertain whether selecting Option 6.1 would preclude the Council from allocating Pacific cod to an AI shoreplant under Element 5.4. Staff developed the strawman to not include both provisions as an option. The Council may wish to clarify its intent.

choose not to deliver to the AI shoreplants and catch the CQ after the AI shoreplant delivery requirement expires. If the two groups can develop a good working relationship that provides benefits to both groups, any active AI shoreplant could process more Pacific cod than under Amendment 113. The willingness of cooperatives to deliver to the AI shoreplants is expected to be driven by the relative value CVs receive from delivering CQ to AI shoreplants versus other processors. The non-AI shoreplants will forego some Pacific cod processing if deliveries are made to the AI shoreplants. Their relationship with the cooperatives could also impact whether all the set-aside is delivered to the AI shoreplants. While these processors are only associated with the cooperatives and not members, they will still have influence over coordinating the deliveries of CVs under the PCTC. Ultimately, the AI shoreplants will need to offer an ex-vessel price that will sufficiently compensate the CVs. It is also important to note that Alternative 2a would allocate 30 percent of the harvest shares to non-AI shorebased processors and C/Ps. These processors are also allocated an additional amount of harvest shares based on their ownership/control of LLP licenses. This linkage could create a disincentive to deliver that CQ to an AI processor, because the non-AI shorebased processor would be required to give up the value they derive from processing the fish themselves and would only derive revenue from payment for the ex-vessel deliveries.

Enforcement of agreed upon provisions would be done through civil contracts and not by state or federal enforcement agencies. During years that more than one AI shoreplant would operate, this model would require agreement between harvesting vessels that have a market with one or both processors. This would add a layer of complexity to the negotiations which may be more difficult to overcome. It would be incumbent on harvesters to negotiate the delivery contracts since the ability of the processors to be part of these agreements are limited by other regulatory restrictions to negotiate terms of delivery with another processor.

The impacts of Alternative 2a on the C/Ps acting as a mothership are focused on the individual firms being limited to processing Pacific cod as a mothership at the same level as the qualified firms did during the PCTC qualifying period. The impacts on CVs that deliver to C/Ps are discussed in the harvester impacts section.

Because the C/P firms would be given individual processing limits they would not need to establish an agreement on how to divide the processing limit. The owners of the C/Ps would still need to make an agreement with members of the CV sector or utilize their own CVs to deliver an amount equal to their portion of the processing limit.

Because of the different business models employed by the C/P firms that process Pacific cod, at least one firm would likely be allocated more Pacific cod than they are allowed to process and the other would not. Both firms own LLP licenses that would be allocated QS, but the processing limit is not equal to that allocation.

If the C/P firm does not hold sufficient quota, they would be allowed to contract with any CV that holds quota to deliver up to their processing limit. CVs that are most likely to deliver to C/Ps are those that have had past business relationship with the processing firm or CVs that are designed to deliver offshore and not shoreside. Deliveries could also include C/Ps negotiating single deliveries from a CV if their traditional processor does not have the capacity and they have an agreement in place allowing those types of deliveries. For example, the AFA allows for 10 percent of the cooperative's allocation to be delivered to a different processor.

CVs that are allocated more Pacific cod than their C/P is allowed to process may be required to join a CV cooperative with their C/P and then have the cooperative lease a portion of the quota to a cooperative that is not constrained by the processing limit. This transfer would be necessary since it is assumed that CVs cannot assign their CQ to more than one cooperative. If they joined a CV cooperative with a C/P and the combined CQ of the cooperative was more than could be processed under the processing limit, an inter-cooperative transfer would be required to utilize all the fish. The cooperative, and the CV operator that

holds the CQ, could be placed in a relatively weak bargaining position if members of the other cooperative knew that they had to accept a price offered or forego the harvest of that fish.

C/Ps had a competitive advantage to attract CV deliveries under the No Action alternative due to their proximity to the fishing grounds. CVs could deliver offshore to a C/P and have short delivery times and not be required to bleed the Pacific cod before it was delivered. Both were benefits for the CVs. Short turn-around times between tows meant they could stay on the grounds and capture a greater share of the trawl CV sector apportionment. Under a LAPP, increasing catch by fishing faster is no longer a benefit they can offer CVs. The decision of whether to deliver offshore is now based on other factors, such as utilization of their own CVs or competing on either price or the ability to offer more CQ than the CV could receive from another processor.

Because Alternative 2a would base the C/P's individual processing limit on their historical processing activity, one C/P firm would be allocated more CQ than they would be allowed to process and would need to find a market for the fish they cannot process themselves. That firm would not look to attract additional deliveries to their vessel. Instead, they would try to maximize profits from leasing the fish to another cooperative or delivering the fish to another processor using one of their vessels. That firm would forego any rents associated with the processing of those Pacific cod. The firm that would have excess room under the processing limit, relative to the CQ they are issued, would need to attract CVs to deliver to them to reach their processing limit based on offering a competitive ex-vessel price and/or leveraging the CQ they are allocated under Element 2 and Element 5.4. C/Ps have historically been reported to pay slightly lower ex-vessel price than shorebased processor offer. The lower ex-vessel price was based on the lower harvesting costs because the CV did not have to travel far to deliver their catch. C/P firms have also indicated that the first wholesale value of products produced at sea (H&G) generate a lower first wholesale value relative to fillets that are produced at shoreplants. The lower first wholesale value could limit their ability to pay a higher ex-vessel price to compete for deliveries and remain profitable. Given that concern, they may be more heavily reliant on leveraging their CQ and CV cost savings to attract deliveries than offering higher ex-vessel prices than other processors.

It is assumed that processors in the C/P sector will continue to take deliveries from CVs at a rate that allows them efficiently utilize their plant. While the pace of the fishery may slow somewhat but the plants will want to minimize costs to the extent practicable. C/Ps have utilized two or three CVs to harvest Pacific cod in the past. It is assumed that they would want to maintain that number of CVs to keep a steady supply of raw product flowing through the plant. Increased costs to the C/Ps would only occur if they were unable to arrange deliveries that would allow them to efficiently operate up to their processing limit.

Impacts to the C/P sector are expected to include the following.

1. Maintaining processor endorsements that define which C/Ps may act as a MS for BSAI Pacific cod are anticipated to define which entities may continue to accept deliveries of CQ. This will likely give these entities some certainty over delivery volumes, depending on agreements within that sector and the level of the processing limits are imposed on the sector.
2. Vertical integration with their CVs fleet will give certain processing entities more control over deliveries from CVs.
3. C/P firms that own CV LLP licenses may not be allowed to process all of the CQ held by the LLPs they own. This would require the C/P firm to lease the CQ and recoup some or all of the harvest rents but forego the any rents generated by the processing of that Pacific cod.
4. The amount of processing capacity in the fishery is expected to remain the same due to the limitations on who may participate. Reductions in process capacity would only occur if the two participants were to reach an agreement to remove one of the endorsed C/Ps and that is not expected to occur under the current or foreseeable structure of the fishery.

5. Improving the technical efficiency within this sector is dependent on whether the two firms are able to process their limit efficiently. The firm's will want to process their entire limit, but not extend the season such that they increase costs of production beyond what is necessary.
6. The operational advantage of being close to the fishing grounds and the importance of quick delivery times is lost under all the action alternatives relative to the No Action alternative.
7. The processing limit would be assigned to the same LLP license as the endorsement generated under Amendment 120. This would assure that the processing eligibility and the processing limit are transferred together. The same structure would also be implemented under Alternative 2b and the PA.

Although the C/P product mix is not expected to change substantially from the status quo under this alternative, it is possible that some improvement in quality may be made by the two firms that qualify to act as a mothership. Generally, C/Ps produce a relatively high-quality product, so the ability to make quality improvements may be limited. Both C/P have produced only H&G products in recent years. The Pacific cod deliveries taken by the other firm will continue to be processed into H&G products, unless the plant is modified and fillet equipment are added.

Floating processors operating in protected bays and inlets are treated like the shorebased processors in this action. Those vessels produce both fillets and/or H&G products. If these vessels are given additional time to process, they could increase the amount of higher valued and more processed products they produce, given the market for various products. These vessels could also improve their technical efficiency by reducing costs and producing more and higher quality products. The floating processors that produce both fillets and H&G products are in a better position to expand their production of higher valued products under Alternative 2a, relative to the No Action alternative. Firms are expected to benefit from producing higher quality products and product forms that have more demand. Production of the various product forms produced by vessels that are qualified and took trawl CV deliveries of Pacific cod are presented in Table 2-177. The information in that table shows that in recent years over 90 percent of the round of Pacific cod was used to produce an H&G product and less than 10 percent was used to produce fillets.

Table 2-177 Floating processors, C/Ps, and motherships percent of Pacific cod products produced, 2004 through 2019

Product	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Product weight converted to round weight																
Fillet	10%	9%	11%	9%	11%	15%	19%	8%	7%	11%	8%	5%	9%	8%	7%	7%
H&G	88%	88%	88%	90%	87%	83%	81%	91%	92%	88%	92%	94%	90%	92%	93%	93%
Salted & Split, Split	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Whole, Bled	1%	1%	0%	1%	1%	2%	1%	1%	1%	1%	0%	0%	1%	0%	0%	0%
First wholesale value																
Fillet	9%	10%	12%	9%	12%	16%	16%	8%	8%	13%	10%	5%	11%	9%	8%	8%
H&G	88%	88%	87%	90%	87%	82%	83%	91%	91%	86%	90%	95%	88%	91%	92%	92%
Salted & Split, Split	2%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Whole, Bled	1%	1%	0%	1%	0%	2%	1%	0%	0%	1%	0%	0%	1%	0%	0%	0%

Source: AKFIN summary of CAS data

Although competition should exist in the market for landings, harvesters are likely to time landings to accommodate processing schedules; behavior which processors should reward, in turn, with relatively higher ex-vessel prices. This timing of landings could be critical to processors meeting some market demands and minimizing labor costs by utilizing the available labor. Given the location of the processors it is expected that they may face insurmountable logistic challenges to develop more challenging markets (such as the fresh market). These processors are likely to produce more high-quality products, such as frozen fillets, but may also be expected to balance the potential costs of production of other product forms against their current production strategy.

The QS ownership limit would be capped 7 percent of the harvest shares issued to LLP licenses and 20 percent of the QS issued to processors with a grandfather provision for both limits. A firm would not be allowed to own or control any additional quota unless they divested and were under the ownership cap established for all other processors. This would allow a firm to operate as they had in the past but would not allow the firm to expand its operation ownership of harvest shares.

The processor's use cap for the facility would be set at 25 percent of the BSAI Pacific cod trawl CV CQ. Entity level use caps are not included in the Council's motion but information is provided in the analysis¹⁶². The 25 percent facility use cap would include a grandfather provision. At a maximum, the 25 percent cap, without consideration of the grandfather provision would allow four plants to process the entire trawl CV sector allocation. Depending on the grandfather provision utilized by firms, that number may be reduced. However, given the action does not limit the number of processors that may operate in the fishery and the various components of the processing sector, it is anticipated that there will be more than four plants and more than four firms operating on an annual basis. It is anticipated that at-least one firm would be constrained by the facility use cap.

The grandfather limit for the use cap would be established based on the plants average percentage of usage during the qualifying period. The proposed caps would be established based on the Council's knowledge of the fishery and are responsive to the MSA requirements to consider establishing ownership and use caps as part of the development of a LAPP to prevent excessive consolidation of the fishery.

The establishment of plant level processing caps are expected to have the greatest impact on firms that currently operate more than one processing facility and would like to consolidate processing into one or at least fewer plants than they operated for BSAI Pacific cod under the No Action alternative. Firms that only operate one plant could be limited by the caps but because owners and use caps would be set a similar level, they would not be substantially impacted by the plant use cap. Firms that operate more than one plant and are grandfathered under the ownership and plant use caps could continue to operate as they have in the past, but it could limit consolidation at their most efficient plant. Therefore, implementing the plant level cap, even with a grandfather provision could limit at least one firm's ability to operate in an economically efficient way. Because confidentiality rules prevent discussion of individual plant level data, additional information on the actual impacts cannot be presented.

Transferability of QS and CQ will also impact processors. Alternative 2a would issue processors harvest shares equal to 30 percent of the total QS issued. The quota would be assigned to a new permit and the permit would be held by the processor. CQ derived from the QS would be assigned to CVs in the cooperative that the processor is associated. The exact requirements for who may hold the permits and whether the QS may be sub-divided after the initial allocation have been defined in the Councils motion. The limited ability to sub-divide processor QS upon sale could allow new processing firms to enter the fishery. The requirement that only shorebased processors may purchase permits and QS initially issued to shorebased processors will provide some protections for these firms and the communities they operate.

Longer share duration will create more certainty within the program and allow processors to better plan long-term goals and objectives for the fishery. Processors that are fairly certain that the program will function a certain way over a long period are more likely to adjust the processing operation to fit that model to improve the technical efficiency of the firm. If processors are uncertain about how the fishery will change in the near term, they may be less likely to adjust their plants to process a specific amount of throughput to produce higher valued, high-quality products at the least cost. Instead, they may continue to keep sufficient capacity to process high daily volumes of Pacific cod required under the current No Action alternative. Like in the harvest sector, the longer more certain planning horizon allows the decision makers to create a more informed and hopefully better business plan than when operating under

¹⁶² Information that can be presented on the processing history or the four firms that took deliveries of the greatest amount of BSAI Pacific cod is presented in Section 8.3. Plant level information that is be provided under confidentiality restrictions is presented in Section 8.4.

the uncertainty of how much of the trawl CV sector apportionment they will be able to process during the year.

PSC has value, and that value increases as it has a greater constraint on the harvest of Pacific cod, as long as it allows a sufficient amount of Pacific cod to be harvested. Because PSC is assigned to cooperatives at the same percentage as Pacific cod, processors essentially control 30 percent of the PSC species allocated to cooperatives. The overall impact of PSC is expected to be greatest if the PSC is divided among smaller groups of harvesters (cooperatives with smaller allocations) and a cooperative realizes relatively high PSC rates. Cooperative approach or exceed their limit may need to acquire PSC from another cooperative to harvest the remaining Pacific cod or lease any unharvested Pacific cod to another cooperative. This type of scenario is reflected in concerns that are often expressed regarding assigning PSC to smaller and smaller “boxes” through the annual apportionment process. A more in-depth discussion of PSC limits is provided in Section 2.10.3.

Gear conversion is discussed under the harvester impacts section. It is anticipated that gear conversion will have less of an impact on the processors than the harvesters or similar impacts would be realized by both sectors. Because the gear conversion is limited to pot gear harvests by CVs using CQ, it is anticipated that the Pacific cod will be delivered to the same processors that take deliveries from trawl CVs, unless pot gear specific cooperatives are formed by holders of LLP licenses that are assigned QS. Because the processor is associated with the cooperative, it is also assumed that deliveries to a different processor would, at least in part, be negotiated with the cooperative associated processor.

2.10.2.3. Alternative 2b: Multiple Cooperative, No Processor QS Allocation, Allocation to AI Shoreplants, No Gear Conversion

Alternative 2b elements that are expected to have the greatest impacts on the various processing components, that differ from those realized under Alternative 2a, are Element 5 (processor and community provisions), Element 6 (AI Processor Provisions), and Element 8 (ownership and use caps). Processing practices under this alternative should be similar to those under the previous alternative. Under this alternative, each eligible LLP license holder would be permitted to join a cooperative in association with the processor of its choice on an annual basis. Processor eligibility to associate with a cooperative would be based on being legally permitted to process groundfish in the BSAI.

Processors would not be issued an allocation of harvest QS based on their processing history. A harvester/processor association would be voluntary based on agreements reached between qualified trawl CV LLP license holders and the processor. The association would be similar to that currently used in the Central GOA Rockfish Program¹⁶³ where a CV annually joins a cooperative with an associated processor. The cooperative rules are established and enforced through civil contracts. Once a qualified LLP license holder joins a cooperative all of the CQ derived from all LLP licenses assigned to that cooperative is issued to the cooperative and may only be harvested by vessels named on the cooperative application that is submitted to and approved by NMFS, unless CQ is transferred to another cooperative. CQ may only be transferred for use by vessels in another cooperative if approved by NMFS through the formal transfer of CQ process established in regulation. This is an automated process that is approved if all the predefined conditions for a transfer are met (i.e., sufficient quota, the recipient is under all established caps, and there are no enforcement actions related to the program against the recipient).

It is assumed that the majority of the CVs will join a cooperative associated with the processor they have delivered their catch to in the recent past, but there may be some flexibility to deliver to other processors within the cooperative agreements. The AFA, for example, allows up to 10 percent of a cooperative’s allocation to be delivered to a processor that is not associated with that cooperative. The provision provides flexibility on where to deliver some catch for both harvesters and processors, but also provides

¹⁶³ <https://meetings.npfmc.org/CommentReview/DownloadFile?p=cf763028-9d80-4bcb-8b3e-ee521edfbaec.pdf&fileName=C3%20Rockfish%20Reauthorization%20Analysis.pdf>

harvesters more market power than they would have if they were required to deliver all of their pollock to the cooperatives' processor.

As discussed under Alternative 2a and in Element 5.4, the allocation of harvest shares to processors is highly controversial, both from an industry and academic literature perspective. Alternative 2b would not allocate harvest shares to processors based on their processing history.

Harvesters would retain all of the long-term assets associated with their qualifying catch history. This analysis does not attempt to quantify the long-term value of a QS unit under the PCTC program. Making those estimates will depend on future TACs, changes in State and Federal fishery Pacific cod allocations, changes world whitefish market prices, etc. However, that asset value may be important to firms that have limited resources to use as collateral to access loans or firms that may exit the fishery.

Giving processors no allocation of harvest shares is expected to reduce the market power of the processing sector relative to Alternative 2a and the PA. Processors often reference their experience under the Halibut and Sablefish IFQ program in terms of the negative impacts a LAPP can have on the harvest sector. While there are many differences in the halibut fishery and BSAI trawl CV fishery Pacific cod fishery in terms of markets and road access to processing plants, a harvester only allocation would be expected to provide more market power to harvesters through the ability move between cooperatives without losing access to any CQ. The ability to annually change cooperatives creates a structure where processors compete for deliveries based on ex-vessel prices. The competition to attract deliveries to meet market obligations and efficiently utilize processing capacity could result in processors offering ex-vessel prices that only allows the plant to cover operating costs for their Pacific cod operation. If this is the result, it would shift most or all of the benefits of the program to the harvesting sector.

Processors that do not own/control LLP licenses could be impacted the most on a harvester only allocation. The level of LLP ownership/control varies by firm. Some firms have ownership of LLP licenses listed in the LLP license data base. Other processors may have varying degrees of affiliation with some of their harvest fleet, and other processors have little or no affiliation with the CVs that deliver to them.

The Pacific cod fishery is different than the CG Rockfish Program fishery because the Pacific cod fishery is prosecuted in both the BS and AI. Some CVs have fished in both areas and delivered to different processors, especially during years the AI set-aside was in place. Under Alternative 2b, 10 percent of the BSAI trawl CV sector allocation would be allocated to the AI community representative(s), during years they submit an application to NMFS, and it must be harvested from the AI and delivered to a processor operating the AI region. The QS will be held by NMFS but the annual CQ issued to the AI representative(s) and is transferable to any cooperative. There are 43 trawl CV groundfish LLP licenses currently issued with an AI trawl endorsement all of these LLP licenses have an LOA endorsement for vessels greater than 60 feet LOA. One of those LLP licenses is endorsed to fish with trawl gear in the AI but not the BS. The limited number of LLP licenses with an AI endorsement could make it difficult for all cooperatives to fish in the AI under this alternative or any of the other action alternatives.

Alternative 2b would require that 25 percent of the AI shoreplant allocation to be made available for harvest only by CV less than 60 feet LOA that are assigned to an LLP license with an AI transferable trawl endorsement. The requirement that 25 percent of the AI shoreplant allocation is harvested by vessels less than 60 feet LOA will impact the control the processor has over the use of that CQ. The AI processors would lose some market power since they must negotiate with a small number of harvesters to make the deliveries. The data also indicates that these endorsements would receive a relatively small allocation of QS. Because the harvesters could bring a small amount of CQ to the AI processors on their own, the AI processors will not get much benefit from negotiating for access to the rest of their CQ. Only one of the LLP licenses assigned to those CVs has a BS trawl endorsement. As a result, these CVs would be required to fish in the AI or assign the small of CQ they would be allocated to another cooperative. Public testimony has indicated that some of these vessels have been unable to find markets for deliveries

and the AI shoreplant would not provide a market all years. As a result, they would not have a lot of leverage when negotiating with the AI shoreplants, if they did not have exclusive access to a portion of the AI shoreplant's allocation.

All of the proposed alternatives would allow a trawl CV to be assigned to more than one cooperative. It is assumed that the Council's intent was to allow a CV to be associated with one AI cooperative (if they form) and one BS cooperative. LLP licenses assigned to vessels that have PCTC QS may only be assigned to one cooperative regardless of whether they are attached to a vessel that is in a cooperative in each area. Vessels would be allowed to be listed on a cooperative application in each area because several vessels have traditionally fished both areas and limiting them to one area would change their fishing patterns. If a vessel was allowed to be assigned to multiple cooperatives in the BS, it would complicate catch accounting of CQ.

If the AI shoreplant was able to attract CVs and the quota assigned to their LLP license it could increase the amount of Pacific cod delivered to the plant. An allocation of 10 percent of the CQ would provide a relatively strong bargaining position for the AI shoreplants to attract LLP licenses with their own allocation. This could create opportunities to attract CVs to the AI shoreplants cooperative at the expense of BS plants, C/Ps acting as motherships, and floating processors. Since these processors are not issued harvest quota based on their processing history under Alternative 2b, the AI shoreplants would have the advantage of being able to offer member CVs additional Pacific beyond the amount the CVs bring into the cooperative where other processors may not.

Alternative 2b would impose a Pacific cod processing limit on C/Ps acting as a mothership based on the QS assigned to LLP licenses associated with CVs they had a minimum of 75 percent ownership on December 31, 2019. Only two C/Ps would only be allowed to act as a mothership under this option. However, one additional C/P firm owned at least 75 percent of a CV on December 31, 2019, and that CV would also be allowed to deliver to the two eligible C/Ps. The two firms would be allowed to process some or all of the CQ derived from the LLP licenses assigned to those eligible CVs. The C/Ps overall processing limit would be greater under this option than under Alternative 2a.

One C/P firm owns the CVs that have delivered much of the catch its C/P processed during the qualifying period. The other C/P owns LLP licenses that would receive some allocation but has contracted with CVs that they did not own. Both firms own LLP licenses that would be assigned QS and it is anticipated that they would use all the CQ derived from their LLP licenses and have it delivered to their C/Ps. They could also negotiate with the owner of the one additional CV that would qualify to try to access their CQ. Each C/P would not have a separate processing limit, as they did under Alternative 2a. However, the firms would control the QS assigned to LLP licenses it owns. The only other LLP license that can be used to deliver to the C/Ps would likely negotiate with the two firms to determine where it would deliver or simply join a cooperative that offers the best terms. That may be a shorebased cooperative if they offer a higher price or a C/P if they are able to offer additional CQ for the CV to harvest. Alternative 2b does not include Element 5.3.2 so LLP licenses that are not owned by the C/P firms described above, would likely need to join a shorebased cooperative to access their CQ.

A processing limit is intended to prevent unconstrained processing of trawl CV Pacific cod by C/Ps under the program. Under Alternative 2b, no processing plant would be permitted to process in excess of 30 percent of the CQ issued. That limit may constrain at least one shorebased plant but would not impact either C/P because their processing limit would be less than that cap.

Because the processors are not initially allocated harvesting shares based on their processing activity during the qualifying period, they would not receive an initial allocation and are therefore not subject to an ownership cap of harvest shares derive from processing activity during the qualifying period. If the processor owned LLP licenses that receive an initial allocation of QS, the firm would be subject to the same ownership and harvest use caps that apply to any other firm that holds QS issued to LLP licenses.

Alternative 2b would not establish a processing limit for firms. Processors would not be subject to processing use caps, other than the 30 percent facility cap with a grandfather provision for those plants that processed in excess of the limit during the qualifying period. Even at a 30 percent facility processing cap, it could still disadvantage larger processors that operate more than one plant that may wish to consolidate their Pacific cod operations into their most efficient plant. The grandfather provision would cap plants owned by these firms at their historical level (the average plant usage during the qualifying period selected). If the vessels in their fleet (cooperative) are allocated more quota than that limit, some vessels in the cooperative would be required to deliver a portion of their catch to a different processor or a different plant owned by the same processor.

Alternative 2b could result in higher ex-vessel prices being paid to CVs relative to either the No Action alternative or Alternative 2a (that allocates harvest shares to processors). However, as described earlier, the literature does not indicate a strong linkage between implementing a LAPP and increased ex-vessel prices, because prices are driven by a variety of factors beyond the LAPP. Alternative 2b would allocate all of the harvest shares to the CV sector, except the amount of the BSAI trawl CV sector apportionment that could be under the control of the AI shoreplants in years they operate. The issue of changes in bargaining power between harvesters and processors, when QS is only issued to harvesters, was discussed under the Alternative 2a. Those same factors result in the ex-vessel price being driven up as processors bid to attract CVs LLP license holders to join the cooperative they are associated. The increased ex-vessel prices would shift some portion of the rents achieved under from the PCTC Program from the processors to the harvest sector. The shift of rents would benefit the harvest sector about could eliminate or reduce the economic benefits the processors derive from the PCTC Program, relative to Alternative 2a.

The overall benefits the processing sector is expected to derive from the program are projected to be less than under Alternative 2a or the PA, for processors that would have been granted harvest shares. Processors that would not have been granted harvest shares, but wish to enter the fishery, may be in a better position to compete with existing processors under Alternative 2b. Under Alternative 2b, processors that wish to enter the fishery would not be competing with processors that can offer incentives associated with additional fish that were initial allocated to the processors. Alternative 2a established an allocation of 30 percent of the available Pacific cod to processors that processed BSAI trawl CV Pacific cod during the qualifying years. The 30 percent would be divided among the active processors based on the proportion of the BSAI trawl CV sector Pacific cod they processed during that period. Processors that would not have access to that initial allocation, may need to offer other incentives, e.g., a higher ex-vessel price, to attract deliveries. This competitive disadvantage would likely hamper new entry into the processing sector relative to the status quo or Alternative 2b.

Because Alternative 2b is expected to result in technical efficiency gains similar to those realized under the other CV alternative, as processing can be slowed and landings can be better timed. Processors are likely to compete for landings in terms of ex-vessel prices paid and in developing the terms of the cooperative agreement for coordinating the cooperative's activities, which is subject to the processor's approval. However, some processors may aggressively pursue any available market for higher valued products, while others will show less interest in extracting maximum gross revenues from Pacific cod landings, particularly if their processing of those landings could interfere with their operations in other fisheries. So, processing under this alternative should resemble that of Alternative 2a with shorebased processors emphasizing fillet production and C/Ps producing an H&G product. Processors with the time and space/equipment to produce products that take more time and cost but command a higher market price would do so if it increases economic profits. Those processors (C/Ps and some floating processors) that are limited in the types of products their plants can produce would focus their efforts on producing less processed and lower valued products but emphasize improving quality to capture premium market prices for those products.

The cooperative provisions (Element 9), share duration (Element 10), monitoring (Element 11), reporting and review (Element 12), and cost recovery (Element 13) are expected to be the same under Alternative

2a and Alternative 2b. Processors will need to provide any reports that are required under the program, abide by the monitoring and enforcement provisions established, and pay any portion of the cost recovery fee they are subject to under the program. These provisions will increase costs. Whether the benefits of the program under Alternative 2b offset any increased costs that result from these elements for processors is not known with any certainty.

2.10.2.4. Alternative 3 (PA): Multiple Cooperatives, Processor QS Allocation, AI Shoreplant Set-aside

The impacts to processors in this section are described for each of the elements and to the extent possible their interrelationships. Some of the impacts will be the same or similar to those discussed under Alternative 2a or Alternative 2b. In those cases, the reader will either be referred to the appropriate alternative or the information will be presented again, depending on the importance of the information to this discussion.

Element 1 addresses the cooperative style system. The Council selected the option that requires that three LLP licenses are needed to form a cooperative. The reader is referred to the discussion under Alternative 2b that describes the option. Whether three LLP licenses will have a substantial impact on cooperative formation for processors will likely depend on whether a new processor enters the fishery or if existing processors associate with more than one cooperative. A new processor may be unable to get the holders of three LLP licenses to join a cooperative but could start with one or two LLP licenses. The current BS trawl CV Pacific cod processors in the inshore sector are all AFA processors and the AFA cooperatives all have more than three vessels, and therefore, more than three LLP license. Depending on the outcomes related to the 90-day transfer period allowed under Element 7.1.1 all current processors would not be impacted by the requirement for three LLP licenses to form a cooperative. Requiring three LLP license to form a cooperative could have a greater impact on processors trying to enter the fishery and the harvester sector than the current shoreside processing sector. The two eligible C/Ps both own at least three LLP licenses. The three LLP license requirement for cooperative formation is not expected to impact them unless they divest of LLP license holdings.

Element 2 would establish the years that determine the processor allocation of harvest shares as well as the allocation of QS to LLP licenses held by persons that deliver to the processors. Because only current FFP and FPP holders are eligible to receive an initial processor allocation of harvest shares the selection of years is not expected to have a substantial impact on processors. This is reflected in Table 2-144 that indicates the top four processors and the remaining processor's allocations change very little under the various sets of qualification years considered. There could be some shifts of allocations among firms within the groupings, but data at the individual firm level cannot be reported and processing firms have not expressed strong concern over any of the periods considered. That being said, some firms have expressed concerns over using the average history (sum of an individual's qualifying history over the period divided by the sum of all qualifying history) to determine their processing limit under Element 5.2. One C/P firm has indicated that averaging of their processing over the years considered does not accurately reflect their history. Similar concerns have been expressed by harvesters. To mitigate the impact of a firm having a bad year the Council determined that allowing harvesters and processors to drop their worst years under the PA best met their objectives for the program, since many harvesters and processors had variability in their catch/processing history for a variety of reasons that ranged from annual business decisions to catastrophic damage to vessels and plants that prevented operation during a year.

Only the A and B seasons would be allocated under the PA. This is also expected to have a minimal impact on the processing sector, since they could still receive C season fish from trawl CVs or non-trawl CVs. Also, the C season trawl CV sector fishery has been limited to a few vessels and processors. Participation by those vessels and processors could continue utilizing the limited access C season apportionment.

Element 3 defines the PSC limits for the trawl CV sector and the PCTC program. The greatest impact to processors was the decision that PSC flows to cooperatives at the same percentage as the Pacific cod allocated to the cooperative. Because processors will control 22.5 percent of the Pacific cod CQ under the PA, they will also control the proportional percentage of each PSC species that is assigned to a cooperative. If PSC did not flow with the Pacific cod CQ to cooperatives and was only allocated to harvesters, it could result in mismatches of Pacific cod CQ and PSC that is assigned to cooperatives.

Element 4 addresses the treatment of GOA sideboards. This element is not expected to have a substantial impact on processors in the BSAI or the GOA. Limitations on PCTC vessels could result in some change in the overall amount of all species of fish delivered to specific processors in the BSAI and GOA. Overall, these changes are expected to be small. The greatest impact of this element will be on trawl CVs that are limited in the GOA and the GOA harvest vessels that benefit from the imposed sideboard limits.

One of the program elements that is important to shoreside processors is the processing limits established for C/Ps acting as a mothership. The second is the percentage allocation of harvest shares to active processors. The expected impacts of the PA are expected to fall within the range described for Alternative 2a and Alternative 2b.

The PA under Element 5 states that there will not be a closed class of processors. The only processors that are prohibited from entering the fishery are the C/Ps that are allowed to act as a mothership in the BSAI Pacific cod fishery as a result of BSAI Amendment 120. Not creating a closed processing sector ensures that the Council does not prohibit any current or future shorebased processors from participating in the fishery, which is outside its authority. The limitation on C/Ps acting as a mothership is included as a measure to provide protections against an unexpected increase in offshore deliveries. The Council has indicated that they did not intend to impose a limit on AFA motherships because they have not been engaged in the fishery in the past on a consistent and sustained basis. The Council did indicate that during the annual cooperative reports and the set reviews of the PCTC program it intended to monitor the sector to ensure that unanticipated processing of Pacific cod by that sector did not occur.

As stated earlier in this document, it is expected that most of the shorebased and floating processing activity will take place in the tax jurisdictions of Dutch Harbor/Unalaska and Akutan. Maintaining those revenues and the support industries associated with those communities is an important aspect of the program. While there is not expected to be many new processors entering the fishery, a primary concern of the Council was ensuring that a pre-defined portion of the PCTC program Pacific cod is delivered to communities in Alaska and not limiting entry in that sector.

As discussed under Alternative 2a, the impacts on the C/Ps acting as a mothership are focused on the individual firms being limited to processing Pacific cod specific amounts of Pacific cod as a mothership. The limit defined in the PA is essentially 125 percent of the eligible C/Ps processing history during the qualifying period as a percentage of all eligible PCTC program Pacific cod processing during the period with no drop years. Giving C/P firms individual processing limits would eliminate the need for the two firms to establish an agreement on how to divide an overall limit. The individual limits are not transferable between the two firms on an annual basis. If one firm does not process its entire limit, that forgone amount cannot be processed by the firm that owns the other C/P. The limit would be assigned to the LLP license that also has the mothership endorsement. This would ensure that the two limitations are transferred together and never separated.

If a C/P firm does not hold sufficient harvest CQ to process itself, it would be allowed to contract with CVs that holds quota to deliver up to their processing limit. CVs that are most likely to deliver to C/Ps are those that have had past business relationship with the processing firm or CVs that are designed to deliver offshore and not shoreside. Deliveries could also include C/Ps negotiating single deliveries from a CV if their traditional processor does not have the capacity and they have an agreement in place allowing those types of deliveries. For example, the AFA allows 10 percent of the cooperative's allocation to be

delivered to a different processor. It is not known if a similar provision will be included in the PCTC cooperative agreements.

CVs that traditionally delivered to C/Ps or are owned by a C/P that has reached its processing limit would be expected to either join a shorebased cooperative or transfer CQ from their cooperative to another cooperative that offered the best overall contract terms. Those terms could include a variety of incentives in addition to the ex-vessel price paid for the fish. It is still assumed that all the LLP licenses owned by the C/P would be assigned to the C/P cooperative and CQ would be transferred in-season to the cooperative whose members offer the best compensation.

It is expected that C/Ps will try to process up to their processing limit. Members of the sector have noted that they had a competitive advantage to attract CV deliveries under the No Action alternative due to their proximity to the fishing grounds that would not exist under the action alternatives. CVs could deliver offshore to a processor and have short delivery times and not be required to bleed the Pacific cod before it was delivered. Both were benefits for the CVs. Short turn-around times between tows meant they could stay on the grounds and capture a greater share of the trawl CV sector apportionment. Under the PA a CVs ability to fish faster to catch more fish is no longer a benefit.

The PA limit of 125 percent of average annual processing will require one firm to deliver some of the CQ it is assigned to another processor and the other firm will have room under the limit to attract deliveries of CQ derived from LLP licenses it does not own. Alternatives 2a and 2b describe these relationships in more detail, but the confidentiality rules prevent the disclosure of the exact amounts and limit percentages.

Under the PA it is assumed that processors in the C/P sector will continue to take deliveries from CVs at a rate that allows them efficiently utilize their plant. While the pace of the fishery may slow somewhat, the plants will want to minimize costs to the extent practicable. C/Ps have utilized two or three CVs to harvest Pacific cod in the past. It is assumed that they would want to maintain that number of CVs to keep a steady supply of raw product flowing through the plant. Increased costs to the C/Ps would only occur if they were unable to arrange deliveries that would allow them to efficiently operate up to their processing limit or the costs to move into the Pacific cod fishery could not be recouped under the processing limit.

If C/Ps can offer a competitive ex-vessel price or provide more CQ to CVs than they are offered from other processors, their processing capacity would be sufficient to process any limit that is being considered under the PA. These vessels have shown the ability in the past to process larger percentages of the fishery than they would be limited to under the PA. The market and incentives they are able to offer CVs are expected to determine the amount of Pacific cod they process regardless of the size of the processing limit that is imposed.

Although the C/P product mix is not expected to change substantially from the status quo under this alternative, it is possible that some improvement in quality may be made by the two firms that qualify to act as a mothership. Generally, C/Ps produce a relatively high-quality product, so the ability to make quality improvements may be limited. Both C/P have produced only H&G products in recent years. The Pacific cod deliveries taken by the other firm will continue to be processed into H&G products, unless the plant is modified and fillet equipment is added. Because they only process a lower value product compared to fillets, they would need to offer CVs a higher percentage of the first wholesale value of their production. It is not known whether the cost savings in fuel and time and other incentives the C/Ps may offer could sufficiently compensate CVs for a lower delivery price per pound that would entice them to deliver to C/Ps.

The allocation of 22.5 percent harvest shares to processors under Element 5.4 is included in the PA. That percentage falls within the range of 5 percent to 30 percent of the QS considered under Alternative 2a and 2b. An allocation of 30 percent was discussed under Alternative 2a and no allocation was discussed under Alternative 2b. The reader is referred to those sections.

The allocation of 22.5 percent of shares to processors was selected in large part based on an industry agreement that was supported by a broad group of stakeholders in the processing and harvesting sector. Industry intends for the allocation of harvest shares to processors to help foster a stable and long-term partnership between harvesters and processors where both sectors benefit from the PCTC program. The Council will monitor in the impacts of the allocation and how the quota are used within the program on an annual basis through the annual cooperative reports as well as the formal program reviews required under Section 303A of the MSA.

Processors will control the long-term asset value of the QS they are allocated. That asset value can be used as collateral for loans. This practice is reported to often be utilized in other catch share programs by harvester to access loans for working capital or to leverage to expand their fishing operation. Any allocation of QS to processors results in an equal reduction in asset value controlled by CVs. That value will not be available to them to access day-to-day working capital or to purchase fixed assets needed to operate the business. The change in asset value for firms that have few assets to use as collateral to obtain loans could have a substantial impact.

Processors have reportedly shown the ability to utilize their 20 percent allocation under the whiting fishery to charge a contract premium in some years when the TAC was constraining (Guldin and Anderson 2021). Both harvesters and processors have noted differences between the two fisheries that could potentially impact any direct comparisons between the proposed PCTC program and the shoreside whiting ITQ fishery. However, if the market conditions are similar enough and the TAC is constraining most years in the Pacific cod fishery, as expected, processors may be able to charge a market premium for the QS they hold. Through public testimony the processors have indicated that this is not their intent. However, it will likely be difficult to confirm whether it is occurring with the data available. The ratio of ex-vessel price to first wholesale price converted to a round weigh equivalent would likely be the best information available.

As discussed in the paper described above and in public testimony, the processing sector could also utilize the QS to help retain their CV Pacific cod fleet and stabilize relationships between the sectors. This would be an expected outcome of the allocation.

Data indicates that the AFA CV cooperative membership has been very stable since 2017. The processors and the harvest that are associated through AFA cooperatives in the BS also have strong linkages in terms of Pacific cod deliveries. The BS AFA processors take delivery of about 85 percent of the trawl CV Pacific cod that members of their AFA cooperative harvest. This strong linkage is expected to continue under the PCTC program as processors will continue to try to keep the CVs delivering both their pollock and Pacific cod.

Because of the importance of the pollock fishery to BS processors and harvesters, trawl CVs that do not have a pollock allocation to leverage during negotiations for Pacific cod deliveries with their processors may be in a weaker bargaining position than the AFA CVs. These vessels are often independently owned CVs that rely on suite of fisheries to make up their annual fishing cycle. Additional information on the impacts to the harvest sector was presented in the previous section.

The information presented in this paper does not provide a point estimate of the optimal percentage of QS that should be allocated to processors. However, if processors are issued a 30 percent allocation and they compensate harvesters with the same amount of quota forgone to fund the processor allocation, a harvest vessel may need to forego all or some of that CQ to change cooperatives. If CVs could not make up that revenue difference in ex-vessel price with any other processor, leaving the cooperative would not make economic sense even if another processor was able to offer a slightly higher price than they were receiving. A 5 percent allocation to processors would provide processors less market power to retain the independent vessels in their fleets. CV operators may find another processor that could offer enough CQ to make up the 5 percent difference or offer a slightly higher ex-vessel price or other market incentives. As the percentage of QS allocated to the processors change within the continuum considered, the leverage

that each sector will have also changes and the effects are likely to be most realized by firms that have less leverage outside the Pacific cod fishery.

The Council's motion also notes that processors currently not permitted to process trawl CV harvested Pacific cod under the PCTC would not receive an allocation of harvest shares based on their historical processing activity. The groups of processors excluded would be the C/Ps that are no longer eligible to act as a mothership, firms that operated AI shoreplants that are no longer active, and BS firms that are no longer active. Combined these firms processed about nine percent of the qualifying BSAI trawl CV Pacific cod catch history during the 2009 through 2019 period.

The C/P firms that own LLP licenses will receive QS for both the catch history of their LLP licenses and their processing history. The processors are expected to use those CQ to operate the CVs they own, in most cases. Without that allocation the vessels they operate and the crew that depends on those vessels for jobs would not have access to CQ to operate in the fishery as they have under the No Action alternative.

The processor allocation under consideration is to create stability for both the processing and harvesting sectors. However, it could result in some distributional impacts depending on whether harvesters are fully compensated for their reduction in CQ derived from their LLP license. Because there has been movement of harvesters between processors during the qualifying period it is not expected that there will be an exact match of CQ between harvesters and their processors to exactly compensate for the processor allocation. Some processors may be able to contribute a relatively larger percentage of the total cooperative's CQ than other processors. These slight differences could impact a CVs decision to stay in a cooperative or move to another. However, if it does occur it will have a modest impact on movement between cooperatives.

Element 6 of the PA would establish a 12 percent set-aside of the BSAI trawl CV A season sector allocation for delivery to AI shoreplants. The set-aside would be available for harvest only by trawl CVs in the PCTC that are directed fishing for AI Pacific cod and delivering their catch to Aleutian Islands shoreplants for processing. The harvest set-aside would apply only if specific notification requirements are met, and would be in place during Pacific cod trawl CV A and B seasons. The set-aside is in place for the annual duration of the CQ to create stronger incentives for the cooperatives to work with the AI stakeholders to ensure the CQ is delivered. If it is not delivered, the CQ would expire and would be available to anyone in the trawl CV sector. If it is not projected to be used by the trawl CV sector it could be rolled over to other sectors for harvest and delivery to any processor.

The set-aside is being considered because of changes that have occurred in the AI Pacific cod fishery that have negatively impacted the AI shoreplants ability to compete in the Pacific cod fishery. Since 2008, AI fishing communities, and specifically the community of Adak and its shoreplant, have taken a reduced share of the Pacific cod fishery. The amount of Pacific cod being delivered to AI shoreplants has been highly inconsistent, which is not conducive to stable shoreside operations. Several factors have contributed to this instability, and therefore the consideration of this proposed action, including decreased Pacific cod biomass in the Aleutian Islands subarea; the establishment of separate OFLs, ABCs, and TACs for Pacific cod in the Bering Sea and the Aleutian Islands (referred to as the "BSAI TAC split"); changing Steller sea lion protection measures; and changing fishing practices and processing practices resulting from rationalization programs.

A set-aside of 25 percent was discussed under Alternative 2a. Many of the issues about delivery by the cooperatives that are determined through an intercooperative agreement are lessened by keeping the set-aside in place through the B season. The set-aside being smaller could impact the viability of the AI shoreplant relative to Alternative 2a or Alternative 2b. The estimated amounts are presented in Section 2.8.6 of this document.

The Council considered the need for the harvest set-aside based on concerns expressed by stakeholders representing the communities that are or have been homes for these plants. The Council remains

concerned about the viability of the AI shoreplants and the communities and without the set-aside they may not be able to sustain participation in the AI Pacific cod fishery. The PA would maintain opportunities for remote fishing communities to participate in the Pacific cod fishery. The Council recognized when passing BSAI FMP Amendment 113 that the AI shoreplants (Adak) derived most of their total first wholesale gross revenue was from Aleutian Islands Pacific cod during recent years they were active.

A set-aside under the PA would encourage trawl CVs to fish a greater portion of their allocation in the AI. This would benefit the AI shoreplants while reducing the benefits of the PCTC program to BS processors. The overall impact on the BS shoreplants will depend on the amount of the BS Pacific cod ITAC that is harvested by C/Ps on an annual basis. A discussion of the impacts on freezer longline vessels and other sectors that fish BSAI Pacific cod is provided in harvester impacts section.

Because of their remote location and limited economic alternatives, AI communities rely on harvesting and processing of the nearby fishery resources to support and sustain their communities. This program element is intended to be directly responsive to National Standard 8 of the Magnuson-Stevens Act that states conservation and management measures shall take into account the importance of fishery resources to fishing communities in order to provide for the sustained participation of such communities, and to the extent practicable, minimize adverse economic impacts on such communities (16 U.S.C. 1851(a)(8)). These issues are discussed in greater detail under Element 2.9.5.

The issues related to the transferability of processor issued harvesting quota under Element 7 are the same as described under Alternative 2a. The reader is referred to that section of the document for further discussion. In summary, ownership and use caps for processors are described under Alternative 2a and Alternative 2b. The PA caps for processor issued harvest shares would be 20 percent and a company level cap use cap of 20 percent was also selected. Alternatives 2a (25 percent) and Alternative 2b (30 percent) were slightly larger, but the grandfather provision provides flexibility for any firm over the maximum amount while still ensuring that no company acquires an excessive share of the PCTC processing.

Some processors also own LLP licenses and CVs so the harvester issued CQ/QS ownership (5 percent) and vessel use caps (4 percent) would also apply to those LLP licenses. All ownership and use caps include a grandfather provision that would allow a person that is over the cap at the time of initial allocation (or after the QS is permanently affixed to the LLP licenses under Element 7.1.1).

It will ensure that a person does not acquire more than the percentage they used on average from 2009 through 2019 under the PA which the determined was not an excessive share of the fishery. The Council has not identified any other limitations necessary to prevent inequitable concentration of shares under the proposed PCTC program and have determined the proposed caps would prevent excessive consolidation in the PCTC program.

The one issue that would not be addressed by the grandfather provision that could be an issue for processors that operated more than one processing facility is the 20 percent facility cap. A processor could be grandfathered under the processor facility and harvester caps but would not be able to process all or the vast majority of the Pacific cod CQ at their most efficient plant because that plant had not been able to process all the Pacific cod delivered to the firm under the race to fish. The processing facility cap is expected to have the greatest impact when BS TACs are low and it would be most efficient to process the Pacific cod at a single plant.

AI shoreplants were exempted the company cap because of concerns that the set-aside under Option 6.1 could be limit their ability to process the amount provided to them. It was not the Council's intent to prevent the AI shoreplants from processing their allocation because of the processing caps selected.

Element 9 through Element 13 are the same under all the alternatives considered. The reader is referred to the discussion of those issues under Section 2.8.9 through Section 2.8.13.

Element 14 was not selected as part of the Council's PA. One primary reason for not including gear conversion at this time was directly related to low abundance levels of *C. opilio* and Bristol Bay red king crab and the bycatch of those species when using pot gear to harvest Pacific cod.

2.10.3. Effects on Bycatch Management (PSC and Groundfish)

2.10.3.1. Alternative 1: Status quo (No Action)

PSC

As noted in Section 2.9.3.1, 50 CFR §679.21(b)(2) and (e)(5) authorizes NMFS, based on Council recommendations, to establish seasonal apportionments of halibut and crab PSC limits for the BSAI TLAS fisheries to maximize the ability of the fleet to harvest the available groundfish TAC and to minimize PSC. Looking first at halibut PSC, 745 mt is established for the BSAI TLAS each year at §679.21(b)(1). The apportionment of the BSAI TLAS halibut PSC limit between the trawl fishery categories is determined during the harvest specification process. Of the 745 mt available for the BSAI TLAS, currently 391 mt is apportioned to the Pacific cod fishery, while the remaining amount is apportioned between the yellowfin sole, rockfish, and pollock/Atka mackerel/other species fisheries.

TLAS includes the trawl CV sector (AFA and non-AFA trawl CVs) and the AFA C/P sector. Given the TLAS includes AFA vessels (AFA trawl CVs and AFA C/Ps), both sectors have historically utilized their cooperative managed pollock fishery to work closely with NMFS to manage their halibut and crab PSC usage to minimize their halibut and crab PSC in other groundfish fisheries including Pacific cod. This has resulted in the fleet, over the years, to increase their halibut avoidance measures to reduce halibut PSC and bycatch of other species. For example, the trawl CVs have tried when possible to fish later in the A season when halibut PSC rates are lower. The AFA trawl CV sector through the intercooperative agreement has also restricted night fishing when halibut PSC is historically higher. The trawl CVs that delivered to C/Ps acting as motherships have been able to deck sort some of their halibut PSC. The AFA trawl CV fleet also uses gear modifications that allow halibut to escape the trawl net to reduce halibut PSC. In addition, in 2020, the trawl CV sectors organized a voluntary stand down in the A season Pacific cod fishery due to high halibut PSC rates. In 2021, the sector had already planned on a voluntary stand down until mid-February to avoid high halibut PSC rates that commonly occur during the late January and early February Pacific cod fishery, and due to impacts from the COVID-19 pandemic that resulted in several shoreplant closures, the sector also opted for a voluntary catch share plan. The combination of low Pacific cod allocations, a mid-February start date for fishing, and the voluntary catch share plan resulted in the continued reduced halibut PSC of 50 mt for the trawl CV sector. Overall, given the importance of reducing halibut PSC, the trawl CV sector will likely continue to utilize these halibut PSC avoidance measures in addition to continually seeking better ways to reduce halibut PSC under status quo.

Crab PSC limits are established for the TLAS, which is composed of the trawl CV sector and the AFA C/P sector (see Figure 2-7 and Figure 2-8). Like halibut PSC, crab PSC limits are further apportioned by trawl fishery category. If a specific crab PSC limit is reached by the TLAS in any fishery, the vessels subject to that limit would be required to move out of the applicable crab savings area when participating in a fishery subject to that PSC limit.

Table 2-105, Table 2-106, Table 2-107, and Table 2-108 provides the annual PSC allowances (animals), PSC (animals), and the percent of allowance utilized for the BSAI Pacific cod TLAS fishery for both the trawl CV sector and the AFA C/P sector for red king crab (Zone 1), *C. opilio* (COBLZ), and *C. bairdi* (Zone 1 and Zone 2). As indicated in the tables, crab PSC for the trawl CV sector is limited throughout 2004-2019 and would likely continue this trend in the future under the status quo alternative.

Groundfish

NMFS monitors harvests that occur while vessels are directed fishing for Pacific cod (specifically targeting and retaining Pacific cod above the MRA) including catch of other groundfish species, NMFS also monitors harvests that occur while vessels are directed fishing in other fisheries and incidentally catching Pacific cod (e.g., the incidental catch of Pacific cod in the pollock directed fishery). NMFS takes appropriate management measures, such as closing directed fishing to ensure that total directed fishing allowance and incidental catch amounts do not exceed the TACs. In addition, incidental catch is also limited by MRAs, and ICAs. MRAs limit groundfish harvested incidentally to a directed fishery. ICAs are used to accommodate incidental catch of a species in other directed fisheries. In all likelihood, the use of MRAs and ICAs as tools for managing the groundfish fisheries under status quo would continue with similar results in limiting groundfish catch in the BSAI Pacific cod trawl CV fishery under the status quo alternative.

2.10.3.2. Alternative 2a: Multiple Cooperatives with Processor QS Allocations but No Gear Conversion

PSC

Alternative 2a would apportion halibut PSC limits between the trawl CV sector and the AFA C/P sector based on historical use by the two sectors, while crab PSC limits would be apportioned based on the proportion of BSAI Pacific cod allocated to each sector. Apportioning halibut and crab PSC limit along with a target species at the cooperative level is typical in other Council-developed LAPPs. With each cooperative receiving their own apportionment of halibut and crab PSC limits, the cooperatives no longer are concerned with the halibut and crab PSC of other vessels outside the cooperatives closing their cooperative fishery prematurely. Moreover, it may create individual incentives to keep halibut and crab PSC rates low, as this would allow cooperatives the ability to continuing harvesting Pacific cod.

Under the PCTC Program, management of halibut and crab PSC limits would continue to be managed at the TLAS level via the current regulations (50 CFR §679.21(b)(1) and crab (50 CFR §679.21(e)(3)(iv)) and at the trawl fishery category during harvest specifications process. Following the apportionment of halibut and crab PSC limits at the trawl fishery category via the harvest specifications, the PSC apportioned to the Pacific cod fishery would then be apportioned to the trawl CV sector and the AFA C/P sector based on the approached determined in the PCTC Program (Options 3.1 and 3.2). This approach would allow for greater flexibility for the trawl CV sector to adjust halibut and crab PSC limits for the Pacific cod fishery amongst the other fisheries to accommodate changes to the different fisheries.

Since the alternative allocates only A and B season CQ, a separate C season halibut and crab PSC limit apportionments of 15 percent of the yearly PSC limit for the trawl CV sector would be utilized before applying PSC limit reductions. The C season PSC apportionment is necessary under this alternative since 15 percent of the trawl CV Pacific cod allocation would not be allocated to cooperatives as CQ but rather left as a limited access fishery to be managed as currently by NMFS. Table 2-119 provides halibut and crab PSC limit C season apportionments based on 5 percent and 15 percent of the annual PSC limit for the trawl CV sector Pacific cod fishery.

Alternative 2a includes a 35 percent reduction in the amount of halibut and crab PSC limits apportioned to the trawl CV sector for use in the A and B season BSAI Pacific cod target fishery. Although not specifically stated in Element 3, is it the Council's intent that any unassigned halibut and crab PSC limits after reductions cannot be applied to the AFA C/P sector for the BSAI Pacific cod fishery or utilized for other TLAS fisheries. The PSC limit reductions are to remain in the water and may contribute to the overall halibut and crab biomass available for future recruitment or harvest.

Halibut PSC limit apportionment

For the halibut PSC limits apportioned to the BSAI Pacific cod TLAS during 2014 through 2019 that was used by the trawl CV sector and the AFA C/P sector, the trawl CV sector accounted for 96 percent and AFA C/P sector account for four percent of the sector's halibut PSC usage. Assuming 391 mt of halibut

PSC allowance is apportioned to the TLAS BSAI Pacific cod fishery, the trawl CV sector would be, apportioned 377 mt (96 percent) of halibut PSC limit. The AFA C/P halibut PSC apportionment for their Pacific cod fishery would be 14 mt. In general, this would likely be sufficient halibut PSC limit apportionments to allow the sectors to fully harvest their allocation of BSAI Pacific cod in most years.

The 96 percent of halibut PSC limit that would be apportioned to the trawl CV sector for the Pacific cod fishery under this alternative would have to be reduced by 15 percent to account for the C season. The remaining halibut PSC limit for the A and B seasons would be reduced by 35 percent to account for the halibut PSC limit reduction included in the alternative. Assuming the trawl CV sector halibut PSC limit is 377 mt for the Pacific cod fishery, the C season limit would be 57 mt of halibut PSC, while the A and B seasons halibut PSC limit with the 35 percent reduction included would be 208 mt which would then be allocated to cooperatives based on members percent of total Pacific cod CQ issued. The 112 mt of halibut PSC that was not apportioned to the trawl CV sector for the A and B seasons would remain in the water. The average halibut PSC during the C season was slightly over 6 percent, so the alternative on average likely overfunds the halibut PSC C season limit at the cost of underfunding halibut PSC to the A and B seasons. When combined with the 35 percent reduction, overfunding the C season and underfunding the A and B seasons could further constrain the cooperatives. In other words, by overfunding the C season at the cost of underfunding the A and B season, some portion of the halibut PSC limit that would be useful in the A and B seasons would only be available in the C season and likely remain in the water since the trawl CV sector on average harvested only 1.9 percent of the Pacific cod allocated to the C season during 2004 through 2020 (see Table 2-172).

A 35 percent reduction in the PCTC halibut PSC limit increases the risk that cooperatives may have an insufficient amount of A and B season halibut PSC limit available to harvest their BSAI Pacific cod CQ. Historically, the trawl CV sector would have exceeded a combined A and B season limit of 208 mt and the C season limit of 57 mt nine of 17 years (2004 to 2020). Applying another measure to determine sufficient halibut PSC, Table 2-178 provides the historical average rate of halibut PSC per mt of targeted BSAI Pacific cod catch from 2004 through 2020. On average, the amount of halibut PSC per mt of BSAI Pacific cod target catch was 0.010 mt. In other words, for every metric ton of targeted BSAI Pacific cod harvested by the trawl CV sector during 2004 through 2020, on average the sector's halibut PSC was 0.010 mt. Utilizing this average halibut PSC rate, a 265 mt of halibut PSC limit for the trawl CV sector under this alternative would have on average been sufficient to harvest 26,010 mt of targeted BSAI Pacific cod. Relative to 2004 through 2020, a 265 mt halibut PSC limit would have been insufficient to harvest the sector's previous BSAI Pacific cod target catch in 13 of the past 17 years. Of course, this measure does consider incentives cooperatives would likely utilize to reduce halibut PSC rates and thus increase their ability to harvest a greater share of Pacific cod CQ. Another factor that could increase the ability of cooperatives to harvest a greater share of their CQ under this alternative is the use of pot gear to harvest CQ. As noted in Table 2-165, the historical PSC rate for halibut using pot gear was 0.06 kg of halibut PSC per mt of groundfish, while the trawl CV sector's rate was 6.48 kg per mt. Recognizing the lower halibut PSC rate when using pot gear, cooperatives could use pot gear to harvest a portion of their CQ thus reducing halibut PSC. Nevertheless, despite these factors that could reduce halibut PSC usage and thus increase the success of harvesting a cooperative's CQ, there is the potential that an allocation of 208 mt of halibut PSC limit to the trawl CV sector for its and A and B season fishery could be limiting enough that the sector may not be able to harvest all its CQ when BSAI Pacific cod TACs are high relative to current TACs.

Table 2-178 Estimated target catch (mt) of BSAI Pacific cod using Alternative 2a allocation of 265 mt halibut PSC limit divided by a halibut PSC rate of 0.010 in the BSAI Pacific cod target fishery

Year	Non-CDQ BSAI Pacific cod target catch (mt)	Halibut mortality in non-CDQ BSAI Pacific cod target fishery (mt)	Halibut mortality in BSAI Pacific cod target fishery/BSAI Pacific cod target catch (rate)	Target catch (mt) of BSAI Pacific cod using rate: 265 (mt)/rate	Difference in BSAI Pacific cod target catch (mt): rate minus actual
2004	37,207	440	0.012	22,409	(14,798)
2005	30,920	596	0.019	13,748	(17,172)
2006	29,576	586	0.020	13,375	(16,201)
2007	28,397	427	0.015	17,623	(10,774)
2008	27,528	291	0.011	25,068	(2,460)
2009	25,709	181	0.007	37,640	11,931
2010	24,885	255	0.010	25,861	976
2011	34,599	238	0.007	38,524	3,925
2012	39,919	429	0.011	24,659	(15,260)
2013	38,979	309	0.008	33,429	(5,550)
2014	38,743	281	0.007	36,537	(2,206)
2015	31,583	236	0.007	35,464	3,881
2016	40,846	294	0.007	36,817	(4,029)
2017	37,443	221	0.006	44,898	7,455
2018	33,709	205	0.006	43,575	9,866
2019	26,329	352	0.013	19,822	(6,507)
2020	21,489	141	0.007	40,387	18,898
Average	32,227	322	0.010	26,010	(6,217)

Note: 2021 was not included in table since it is not complete year.

Crab PSC limit apportionment

Recognizing the limitation of a usage-based crab apportionment,¹⁶⁴ the Council, in June 2021, moved to apportion crab PSC limits based on the portion of BSAI Pacific cod allocated to the two TLAS sectors. In this case, the AFA C/P sector would be allocated 9.4 percent of the crab PSC limits since the sector's percent of BSAI Pacific cod amongst the AFA C/P sector and the trawl CV sector is 9.4 percent. The trawl CV sector therefore would be allocated the remaining 90.57 percent of the crab PSC limits for the Pacific cod fishery since its portion of the BSAI Pacific cod allocation is 90.57 percent. Table 2-110 shows the crab PSC limits for the BSAI Pacific cod fishery based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector. If the crab PSC sector limit is reached for the crab savings area, Pacific cod directed fishing in the crab savings area by the sector is closed and the sector would be required to target Pacific cod in other areas of the BS and AI.

Looking first at red king crab (Zone 1), the trawl CV sector would be apportioned 2,676 red king crab (Zone 1) animals, while the AFA C/P sector would be apportioned 313 red king crab (Zone 1) PSC limit using the 2019 red king crab (Zone 1) PSC limit of 2,954 animals for the BSAI Pacific cod fishery. Since the alternative only allocates A and B season CQ, the alternative utilizes a 15 percent C season apportionment of red king crab (Zone 1), which yields 401 animals based on the 2019 red king crab (Zone 1) PSC limit of 2,954 animals. When compared to the average C season PSC of red king crab (Zone 1) relative to the average annual PSC for red king crab (Zone 1), approximately 3.58 percent of the PSC was in the C season. Given the significantly lower C season PSC relatively to the annual limit, a 15 percent apportionment of the annual limit to C season would overfund the C season red king crab (Zone 1)

¹⁶⁴ A drawback of relying on crab PSC usage to apportion crab PSC limits between the trawl CV and AFA C/P sector is it rewards sectors with high PSC rates while hurting sectors with low PSC rates. For example, although the trawl CV and AFA C/P sector have never exceeded the red king crab (Zone 1) PSC limit, the trawl CV sector's historical red king crab PSC usage is nearly 100 percent of the combined red king crab (Zone 1) PSC usage in the Pacific cod fishery. As a result, basing crab PSC limit apportionment on PSC usage results in the trawl CV sector being apportioned nearly all the red king crab (Zone 1) PSC limit for the Pacific cod fishery while the AFA C/P sector would be apportioned a very small red king crab (Zone 1) PSC limit.

apportionment at the cost of underfunding the A and B season apportionment and would trap useful PSC in the C season that would likely remain in the water rather than being used in the A and B seasons to harvest BSAI Pacific cod CQ.

Factoring a 35 percent reduction of the remaining 2,275 animals for the A and B seasons yields 1,479 animals for cooperative fishing. Despite the trawl CV sector only exceeding the combined PSC limits under this alternative once during 2004 through 2021, there is the potential that trawl CV cooperatives could be constrained by the red king crab (Zone 1) PSC limit and thereby requiring cooperative vessels to fish outside of Zone 1 for their remaining BSAI Pacific cod CQ.

Following the Council's selection of a preferred alternative during the October 2021 meeting, the red king crab TLAS PSC limit for 2022 was set at 975 animals during the harvest specification process. Based on the 2022 TLAS PSC limit and factoring in the trawl CV apportionment, the 35 percent PSC reduction, and a 15 percent C season apportionment, 488 red king crab Zone 1 animals would be allocated to the trawl CV sector for cooperative fishing during the A and B seasons. Although the trawl CV sector reported red king crab Zone 1 PSC greater than 488 animals for all three seasons combined three times since 2004, there is the potential the sector could be still be constrained by the allocation under Alternative 2a thereby requiring cooperative vessels to fish outside of Zone 1 for their remaining BSAI Pacific cod CQ.

One factor that could contribute to higher risk of cooperatives exceeding the red king crab (Zone 1) PSC limit is the timeliness and data quality of at-sea observer data. NMFS uses the at-sea samples on observed trips and extrapolates the sample at the trip level since trawl CVs and pot CVs harvesting BSAI Pacific cod CQ will be 100 percent observed. These estimates are used to create red king crab (Zone 1) PSC rate that is applied to the haul. Observers use a systematic sample, and they strive to take multiple, equal sized samples from throughout the haul to obtain the largest sample size possible. However, even with large sample sizes that reduce detectability issues, red king crab is a relatively uncommon species, and the distribution is characterized by many small and zero counts (i.e., right skewed distribution) with occasional large counts. There is a relationship between the abundance of given species in a haul, sample size, and the level of precision in the resulting estimate of species catch from sampling. In general, we can have very high precision in the catch estimate for common (target species) with very small samples of the haul. Conversely, even extremely large samples of a haul provide relatively imprecise estimates of catch for very rare species, such as red king crab. As described in more detail in Sections 2.8.11 and 2.9.7, the ability for an observer to transmit data to NMFS in near-real time results in improvements to quota monitoring and data quality. Because NMFS does not expect to require that observers deployed on vessels harvesting PCTC QC to have a minimum experience requirement, it is likely that many first time observers may be deployed on vessels fishing under this program. Without at-sea data transmission, observers would not have the ability to communicate directly with NMFS staff to ask sampling questions and get feedback on their data collection methods, and observer data would only be transmitted to NMFS at the end of a trip. This delay creates a higher potential for data to be deleted and could result in less vessel-specific data for PSC estimates.

Also contributing to red king crab (Zone 1) PSC limit being constraining for cooperatives is the potential use of pot gear to harvest BSAI Pacific cod CQ. Alternative 2a provides the ability for BSAI Pacific cod CQ to be harvested using pot gear, which could provide greater flexibility for cooperatives in harvesting their BSAI Pacific cod CQ. As noted in Section of 3.3 the EA, the use of pot gear could result in lower halibut PSC but could result in higher crab PSC. When combined with a 35 percent reduction in halibut and crab PSC limits and accommodating a C season Pacific cod trawl CV limited access fishery apportionment of halibut and crab PSC limits under this alternative, there is a greater potential relative to Alternatives 2b and 3 that a cooperative could increase their risk of being constrained by red king crab (Zone 1) PSC limits if pot gear is used to harvest CQ. As noted in Section 3.3 of the EA, the trawl CV sector would exceed its red king crab (Zone 1) PSC limit if approximately 5 percent of the CQ is fished

with pot gear, which would result in the closure of Zone 1 crab savings area to fishing to cooperative vessels.

As noted earlier, a factor that could reduce some of the risk to cooperatives when PSC limits have the potential to be significantly constraining is the harvest specification process allows for adjustments in PSC apportionment at the trawl fishery category. Under the PCTC Program, management of halibut and crab PSC limits would continue to be managed at the TLAS level via the current regulations (50 CFR §679.21(b)(1) and (50 CFR §679.21(e)(3)(iv)) and at the trawl fishery category during harvest specifications process. This approach allows for greater flexibility to adjust PSC limits at the trawl fishery category via the harvest specification process to adjust for higher and lower TACs which in turn reduces potential disruptions in the different fisheries during the upcoming fishing year.

Since PSC limits are allocated at the cooperative level under the alternative, management of the crab and halibut PSC would be addressed at the cooperative level via an inter-cooperative agreement. There are several approaches at the inter-cooperative level to manage cooperatives PSC limits like monetary penalties for exceeding a limit, transfers of PSC limits between cooperatives, and/or PSC limit insurance pool. When a cooperative exceeds a crab PSC limit, the cooperative would be prohibited from fishing for CQ in the crab savings area associated with crab PSC limit which could limit the ability of the cooperative in harvesting their CQ. As an example, Figure 2-24 shows that some of the highest catch of Pacific cod using trawl gear in 2019 was in red king crab savings area Zone 1. The loss of fishing in Zone 1 by a cooperative could result in the cooperative having lower catch rates of Pacific cod which would increase the cost of fishing for cooperative vessels thereby reducing economic returns. In addition, having to move out of Zone 1 to harvest CQ could also result in cooperative vessels moving from fishing grounds with lower halibut PSC to fishing grounds that have a higher halibut PSC, which could increase the risk of the cooperative reaching its halibut PSC limit. One option the Council might consider in helping to reduce the constrain of the Red King crab (Zone 1) PSC limit while still adhering the PSC limit at the sector level is to manage red king crab (Zone 1) PSC limit at the sector level rather than at the cooperative level. This approach would provide greater flexibility for cooperatives to manage their red king crab (Zone 1) PSC limit by not closing the crab savings area at the cooperative level but instead at the sector level.

For *C. opilio* (COBLZ), after factoring in the sector allocation, C season apportion, and the 35 percent PSC reduction, the estimated PSC limit appears sufficient to not constrain cooperative fishing. Under this alternative, the trawl CV sector would be apportioned 89,657 animals and the AFA C/P sector would be apportioned 10,490 animals based on the 2019 *C. opilio* (COBLZ) PSC limit of 98,959 animals for the BSAI Pacific cod fishery (see Table 2-110). The 15 percent C season apportionment for the trawl CV limited access fishery yields 13,449 animals while the remaining 49,535 animals, after adjusting for the 35 percent PSC limit reduction, would be available for the A and B season BSAI Pacific cod CQ fishery. The remaining 26,673 animals that was not included with the A and B seasons allocation to cooperatives would remain in the water. Overall, after factoring in the 15 percent C season apportionment and the 35 percent reduction of *C. opilio* (COBLZ) crab PSC limit and recognizing the extremely low *C. opilio* (COBLZ) crab PSC by the sector, that allocation of *C. opilio* (COBLZ) crab PSC limit under this alternative is likely sufficient to not constrain cooperative fishing for BSAI Pacific cod CQ or the trawl CV limited access fishery under this alternative.

C. bairdi (Zone 1) PSC limit for the trawl CV sector under this alternative would also likely not constrain cooperative fishing. Using 2019 *C. bairdi* (Zone 1) crab PSC limit of 60,000 animals for the BSAI Pacific cod fishery would result in 54,360 animals for the trawl CV sector and 6,360 animals for the AFA C/P sector (see Table 2-110). A 15 percent C season apportionment for the trawl CV limited access fishery would be 8,154 animals, and after factoring in a 35 percent reduction of the remaining 46,206 animals, cooperatives would be allocated 30,034 *C. bairdi* (Zone 1) animals for the A and B seasons. The remaining 16,172 *C. bairdi* (Zone 1) animals would remain in the water. Although the sector has had *C. bairdi* (Zone 1) PSC greater than 30,035 animals in the during 2004 through 2008, since those years, the

trawl CV sector's *C. bairdi* (Zone 1) PS has declined sufficiently enough that reduced *C. bairdi* (Zone 1) PSC limits would likely not constrain cooperative fishing for BSAI Pacific cod CQ under this alternative.

For *C. bairdi* (Zone 2) PSC limits would also likely not constrain cooperatives under Alternative 2a. Again, using the 2019 *C. bairdi* (Zone 2) crab PSC limit of 49,999 animals for the BSAI Pacific cod fishery, the trawl CV sector would be apportioned 45,299 animals and the AFA C/P sector would be apportioned 5,300 animals (see Table 2-110). Factoring in a 15 percent C season apportionment for the trawl CV limited access fishery would yield 6,795 *C. bairdi* (Zone 2) animals. Factoring in a 35 percent reduction to the remaining 38,504 *C. bairdi* (Zone 2) animals, cooperatives would be allocated 25,028 *C. bairdi* (Zone 2) animals for the A and B seasons to harvest BSAI Pacific cod CQ. The remaining 13,476 *bairdi* (Zone 2) animals would remain in the water. Since *C. bairdi* (Zone 2) PSC has declined from a high of 18,274 animals in 2006 to a low of 30 animals in 2016, reduced *C. bairdi* (Zone 2) PSC limits proposed under this alternative would likely not constrain cooperative fishing for BSAI Pacific cod CQ or the trawl CV limited access fishery.

Groundfish

Under Alternative 2a, targeted BSAI Pacific cod catch history would be assigned to qualified LLP licenses. To manage groundfish catch in the Pacific cod fishery as well as Pacific cod in other groundfish fisheries, NMFS will rely on traditional management tools like an ICA and MRAs. Incidental catch of BSAI Pacific cod by trawl CVs authorized and not authorized by a PCTC Program qualified LLP license when directed fishing in other groundfish fisheries would be accounted for under a trawl CV ICA monitored by NMFS. NMFS would establish a Pacific cod ICA that would be deducted prior to CQ distribution to cooperatives. The ICA amount would be based on the Pacific cod incidental catch rates in other BSAI trawl CV fisheries, TACs of the other groundfish fisheries, and whether it is an ICA established in the harvest specifications or an inseason ICA. The amount of the ICA will be determined on an annual basis and established as an amount of Pacific cod in metric tons. Setting the ICA in metric tons annually provides inseason management the flexibility to adjust the ICA based on the changes in BSAI groundfish TACs and expected incidental catch rates in trawl CV fisheries.

Given that Alternative 2a would account for incidental catch of Pacific cod by qualified and non-qualified LLP licenses outside the cooperative, there is the potential that cooperative vessels and non-cooperative vessels could intentionally top off on Pacific cod while fishing in other groundfish fisheries. As shown in Table 11 to 50 CFR §679, the MRA of Pacific cod as incidental catch in other BSAI directed fisheries (basis species) is set at 20 percent (except for arrowtooth flounder as the basis species). As a result, cooperative and non-cooperative trawl CVs that routinely fish in other groundfish fisheries could purposely increase their incidental catch of BSAI Pacific cod up the 20 percent MRA. If incidental catch of BSAI Pacific cod by cooperative and non-cooperative trawl CVs increases such that NMFS has to increase the ICA to account for this intended effort by cooperative and non-cooperative trawl CVs, there is the potential that the BSAI Pacific cod allocations to the cooperatives will be reduced.

In addition to an ICA, the current MRA amounts in the targeted Pacific cod fishery will provide management control of other groundfish. Under this alternative, there appears to be limited opportunities for qualified trawl CVs utilizing the benefits of a cooperative program to strategically target incidental catch species. For most groundfish species, the additional flexibility to “top off” early in a fishing trip is not expected to affect groundfish stocks. For some groundfish species though, the greater flexibility to “top off” for a species in combination with other factors like low OFL, ABC, and TAC relative to high total catch could increase the risk of exceeding the ABC and TAC. However, as noted in Table 11 to 50 CFR §679, the MRAs for these at-risk species in the BSAI are set extremely low to discourage “top off” fishing.

In all likelihood, the use of MRAs and ICAs as tools for managing the groundfish fisheries under Alternative 2a would continue with similar results in limiting groundfish incidental catch in the BSAI Pacific cod trawl CV fishery under this alternative.

2.10.3.3. Alternative 2b: Multiple Cooperative with Gear Conversion, but No Processor QS Allocation

PSC

Alternative 2b would apportion only halibut PSC limits between the trawl CV sector and the AFA C/P sector based on historical use by the two sectors, while crab PSC limits would continue to be apportioned at the TLAS level. Of the halibut and crab PSC limits, apportioning halibut PSC limit amongst the trawl CV sector and the AFA C/P sector is more likely to be a necessary step to allow cooperatives to have greater control over their own fishing plan. Under this alternative, crab PSC limits would likely not constrain the BSAI Pacific cod fishery for the trawl CV sector or AFA C/P sector. In addition, since Alternative 2b does not include the use of pot gear to harvest BSAI Pacific cod CQ, issues associated with cooperatives exceeding the red king crab (Zone 1) PSC limit when pot gear is used to harvest BSAI Pacific cod CQ under Alternative 2a and Alternative 3 are not present, but cooperatives would not have the benefit of harvesting CQ with pot gear which has a lower halibut PSC rate.

Like the other action alternatives, Alternative 2b is expected to reduce cooperative participant's halibut PSC usage. Participants with exclusive shares will have time to be more selective in determining when, where, and how to harvest their allocation and thereby potentially reduce their halibut PSC and rates. The actual reduction in PSC usage that will occur under this alternative is not known.

Under Alternative 2b, the TLAS halibut PSC limit for the Pacific cod fishery will be apportioned between the trawl CV and AFA C/P sector based on the historical use of halibut PSC by the two sectors. Table 2-109 shows the historical percent of halibut PSC utilized by the trawl CV sector was 97 percent during the 2004 through 2019 qualifying years, while the historical percent for the AFA C/P sector was 3 percent. Assuming 391 mt of halibut PSC allowance is apportioned to the TLAS BSAI Pacific cod fishery, the trawl CV sector would be apportioned 379 mt of the halibut allowance, while the AFA C/P sector would be apportioned 12 mt. In relation to the halibut PSC used by the trawl CV sector in the BSAI Pacific cod fishery, they would have constrained the sector only once since 2008. In 2012, the trawl CV sector reported 429 mt of halibut PSC. The AFA C/P sector would have been constrained only one year. In 2017, the sector reported 17 mt of halibut PSC.

Included in Alternative 2b is a 10 percent reduction in halibut PSC for the trawl CV sector for use in the BSAI Pacific cod target fishery. It is intended that any remaining halibut PSC limit after reductions cannot be applied to the AFA C/P sector for their Pacific cod fishery or utilized for other trawl limited access fisheries. In addition, language in the option makes it clear that the reduction in the halibut PSC limit for the trawl CV sector's Pacific cod fishery would not affect the AFA C/P sector.

Looking at the impacts of a halibut PSC limit reduction under this alternative, Table 2-112 shows that at a 10 percent reduction in halibut PSC limit, the trawl CV sector would be allocated 342 mt of halibut PSC for use in the BSAI Pacific cod fishery, assuming 391 mt of halibut PSC limit apportionment. Historically, the trawl CV sector while targeting BSAI Pacific cod would have been constrained six years out of the 17 years from 2004 through 2020 at a 342 mt halibut PSC limit (see Table 2-104). Applying a 0.010 mt of halibut PSC per mt of targeted BSAI Pacific cod catch shown in Table 2-179, the table provides the target catch (mt) of BSAI Pacific cod based on an allocation of 342 mt of halibut PSC during the 2004 through 2020. Relative to these years, an allocation of 342 mt of halibut PSC would have been insufficient to harvest the sector's BSAI Pacific cod target catch six of the past 17 years. Of course, this measure does not account for the incentives cooperatives would likely utilize to reduce halibut PSC rates and thus increase their ability to harvest a greater share of Pacific cod CQ. Overall, balancing this reduction in halibut PSC for the trawl CV sector with the benefits of cooperative management, the potential for constraining the cooperatives' ability to harvest its Pacific cod allocation is reduced under cooperative management, but the reduction in the halibut PSC limit is likely enough that in some instances it could constrain the cooperatives in their ability to harvest the entire CQ.

In summary, given the historical Pacific cod harvests and halibut PSC usage by the trawl CV and AFA C/P sectors in the BSAI Pacific cod fishery, the halibut PSC allocation percentages under this option appears to be sufficient to allow the harvest of both sector’s BSAI Pacific cod allocation. However, the halibut PSC limit reduction of 10 percent for the trawl CV sector could constrain the PCTC Program cooperatives from harvesting their entire BSAI Pacific cod CQ. Overall, the alternative would likely reduce halibut PSC but could increase crab PSC. Cooperative fishing under this alternative would allow more flexibility to avoid periods of high PSC rates, allow for changes in gear configuration, and eliminate the need for night fishing which has shown to reduce halibut PSC.

Table 2-179 Estimated target catch (mt) of BSAI Pacific cod using Alternative 2b allocation of 342 mt halibut PSC limit divided by a halibut PSC rate of 0.010 in the BSAI Pacific cod target fishery

Year	Non-CDQ BSAI Pacific cod target catch (mt)	Halibut mortality in non-CDQ BSAI Pacific cod target fishery (mt)	Halibut mortality in BSAI Pacific cod target fishery/BSAI Pacific cod target catch (rate)	Target catch (mt) of BSAI Pacific cod using rate: 342 (mt)/rate	Difference in BSAI Pacific cod target catch (mt): rate minus actual
2004	37,207	440	0.012	28,920	(8,287)
2005	30,920	596	0.019	17,743	(13,177)
2006	29,576	586	0.020	17,261	(12,315)
2007	28,397	427	0.015	22,744	(5,653)
2008	27,528	291	0.011	32,352	4,824
2009	25,709	181	0.007	48,577	22,868
2010	24,885	255	0.010	33,375	8,490
2011	34,599	238	0.007	49,718	15,119
2012	39,919	429	0.011	31,824	(8,095)
2013	38,979	309	0.008	43,142	4,163
2014	38,743	281	0.007	47,153	8,410
2015	31,583	236	0.007	45,769	14,186
2016	40,846	294	0.007	47,515	6,669
2017	37,443	221	0.006	57,943	20,500
2018	33,709	205	0.006	56,236	22,527
2019	26,329	352	0.013	25,581	(748)
2020	21,489	141	0.007	52,122	30,633
Average	32,227	322	0.010	33,568	1,341

Note: 2021 was not included in table since it is not complete year.

Groundfish

Under Alternative 2b, just like Alternative 2a and Alternative 3, targeted BSAI Pacific cod catch history would be assigned to qualified LLP licenses. To manage groundfish catch in the Pacific cod fishery as well as Pacific cod catch in other groundfish fisheries, NMFS will rely on traditional management tools like an ICA and MRAs. For incidental catch of Pacific cod, NMFS would establish an ICA that would be deducted prior to QS distribution to cooperatives. The ICA would be set up just like Alternative 2a in that it would be based on Pacific cod catch rates in other BSAI trawl CV fisheries, TACs of the other groundfish fisheries, and whether it is an ICA established in the harvest specifications or an inseason ICA. The ICA would be determined on an annual basis to provide inseason management flexibility. The ICA would also account for the MRA amounts of Pacific cod in other target fisheries.

In addition, the MRA amounts in the targeted Pacific cod fishery will provide management control of other groundfish. Under this alternative, there appears to be limited opportunities for qualified trawl CVs utilizing the benefits of a cooperative program to strategically target incidental catch species. For most groundfish species, the additional flexibility to “top off” early in a fishing trip is not expected to affect groundfish stocks. For some groundfish species though, the greater flexibility to “top off” for a species in combination with other factors like low OFL, ABC, and TAC relative to high total catch could increase the risk of exceeding the ABC and TAC. However, as noted in Table 11 to 50 CFR §679, the MRAs for these at-risk species in the BSAI are set extremely low to discourage “top off” fishing.

Overall, the use of MRAs and ICAs as tools for managing the groundfish fisheries under Alternative 2b would continue with similar results in limiting groundfish catch when needed in the BSAI Pacific cod trawl CV fishery and would not differ in effects with Alternative 2a or Alternative 3.

2.10.3.4. Alternative 3 (PA): Multiple Cooperative with Gear Conversion and Processor QS Allocation

PSC

Alternative 3 would apportion halibut PSC limits between the trawl CV sector and the AFA C/P sector based on historical use by the two sectors, while crab PSC limits would be apportioned based on the proportion of BSAI Pacific cod allocated to each sector. Apportioning halibut and crab PSC along with a target species at the cooperative level is typical in other Council-developed LAPPs. With each cooperative receiving their own apportionment of halibut and crab PSC apportionments, the cooperatives no longer are concerned with the halibut and crab PSC of other vessels outside the cooperatives closing their cooperative fishery prematurely. Moreover, it may create individual incentives to keep halibut and crab PSC rates low, as this would allow cooperatives the ability to continuing harvesting Pacific cod.

Under the PCTC Program, management of halibut and crab PSC limits would continue to be managed at the TLAS level via the current regulations (50 CFR §679.21(b)(1) and (50 CFR §679.21(e)(3)(iv)) and at the trawl fishery category during harvest specifications process. Following the apportionment of halibut and crab PSC at the trawl fishery category via the harvest specifications, the PSC apportioned to the Pacific cod fishery would then be apportioned to the trawl CV sector and the AFA C/P sector based on the approach determined in the PCTC Program (Options 3.1 and 3.2). This approach would allow for greater flexibility for the trawl CV sector to adjust halibut and crab PSC limits for the Pacific cod fishery amongst the other fisheries to accommodate changes like TACs to these different fisheries.

Since this alternative allocates only A and B season CQ, a separate C season halibut and crab PSC apportionments of five percent of the yearly PSC limit for the trawl CV limited access fishery would be utilized before applying PSC limit reductions. Table 2-119 provides halibut and crab PSC C season apportion based on five percent and 15 percent of the annual PSC limit for the trawl CV sector.

Alternative 3 includes a 25 percent halibut PSC limit reduction and a 35 percent crab PSC limit reduction to the portion of PSC limit allocated to the trawl CV sector for use in the A and B season BSAI Pacific cod CQ fishery. As noted in the other action alternatives, is it the Council's intent that any unassigned halibut and crab PSC limits after reductions would remain in the water.

Halibut PSC limit apportionment

Halibut PSC apportioned to the BSAI Pacific cod TLAS using 2009 through 2019 qualifying years would be 98 percent to the trawl CV sector and two percent to the AFA C/P sector. Assuming 391 mt of halibut PSC allowance is apportioned to the TLAS BSAI Pacific cod fishery, the trawl CV sector would be apportioned 382 mt (98 percent) of halibut PSC while the AFA C/P sector would be apportioned nine mt (2 percent) for their Pacific cod fishery. In general, this would likely be sufficient to allow the sector to fully harvest its allocation of BSAI Pacific cod in most years.

The 98 percent of halibut PSC limit would be apportioned to the trawl CV sector for the Pacific cod fishery but would be reduced by five percent to account for the C season, which would be managed as a trawl CV limited access fishery. The remaining halibut PSC limit for the A and B seasons would be reduced by 25 percent to account for the halibut PSC limit reduction included in the alternative. Assuming the trawl CV sector halibut PSC limit is 382 mt for the Pacific cod fishery, the C season limit would be 19 mt of halibut PSC, while the A and B seasons halibut PSC limit after factoring in the 25 percent reduction would be 272 mt which would be allocated to the cooperatives based on members percent of total Pacific cod CQ issued. The 91 mt of halibut PSC that was not apportioned to the trawl CV sector for the A and B seasons would remain in the water. Since the average halibut PSC during the C

season was slightly over four percent, the five percent apportioned to the C-season appears to be an appropriate percentage and would not trap unused valuable halibut PSC in the C-season.

Relatively to the 35 percent reduction in Alternative 2a, the 25 percent reduction in the PCTC halibut PSC limit under this alternative creates less potential that cooperatives may have an insufficient amount of A and B season halibut PSC available which could constrain their harvest of BSAI Pacific cod CQ. However, relatively to Alternative 2b, the alternative does have more potential to constrain cooperatives in harvesting their CQ.

Historically, the trawl CV sector would have exceeded a combined A and B season limit of 272 mt and the C season limit of 19 mt during seven of the 17 years (2004 to 2020). Applying a 0.010 mt of halibut PSC per mt of targeted BSAI Pacific cod catch shown in Table 2-180, the table provides the target catch (mt) of BSAI Pacific cod based on an allocation of 291 mt of halibut PSC. Relative to 2004 through 2020, an allocation of 291 mt of halibut PSC would have been insufficient to harvest the sector's BSAI Pacific cod target catch eight of the past 17 years. This measure does not account for the incentives cooperatives would likely utilize to reduce halibut PSC rates and thus increase their ability to harvest a greater share of Pacific cod CQ. The use of pot gear could also increase the ability of cooperatives to harvest a greater share of their CQ at a lower halibut PSC rate under this alternative. As noted in Table 2-165, the historical PSC rate for halibut using pot gear is 0.06, so allowing cooperatives to use pot gear to harvest a portion of their CQ could reduce the cooperatives halibut PSC. However, despite these factors which could reduce halibut PSC usage and thus increase the success of harvesting a cooperative's CQ, there is the potential that an allocation of 291 mt of halibut PSC to the trawl CV sector for its and A and B season fishery could be limiting enough that the sector may not be able to harvest all its CQ when BSAI Pacific cod TACs are high relative to current TACs.

Table 2-180 Estimated target catch (mt) of BSAI Pacific cod using Alternative 2a allocation of 265 mt halibut PSC limit divided by a halibut PSC rate of 0.010 in the BSAI Pacific cod target fishery

Year	Non-CDQ BSAI Pacific cod target catch (mt)	Halibut mortality in non-CDQ BSAI Pacific cod target fishery (mt)	Halibut mortality in BSAI Pacific cod target fishery/BSAI Pacific cod target catch (rate)	Target catch (mt) of BSAI Pacific cod using rate: 291 (mt)/rate	Difference in BSAI Pacific cod target catch (mt): rate minus actual
2004	37,207	440	0.012	24,607	(12,600)
2005	30,920	596	0.019	15,097	(15,823)
2006	29,576	586	0.020	14,687	(14,889)
2007	28,397	427	0.015	19,353	(9,044)
2008	27,528	291	0.011	27,528	-
2009	25,709	181	0.007	41,333	15,624
2010	24,885	255	0.010	28,398	3,513
2011	34,599	238	0.007	42,304	7,705
2012	39,919	429	0.011	27,078	(12,841)
2013	38,979	309	0.008	36,708	(2,271)
2014	38,743	281	0.007	40,122	1,379
2015	31,583	236	0.007	38,943	7,360
2016	40,846	294	0.007	40,429	(417)
2017	37,443	221	0.006	49,303	11,860
2018	33,709	205	0.006	47,850	14,141
2019	26,329	352	0.013	21,766	(4,563)
2020	21,489	141	0.007	44,350	22,861
Average	32,227	322	0.010	28,562	(3,665)

Note: 2021 was not included in table since it is not complete year.

Crab PSC apportionment

Alternative 3 would apportion crab PSC based on the portion of BSAI Pacific cod allocated to the two sectors. In this case, the AFA C/P sector would be allocated 9.4 percent of the crab PSC limits, while the

trawl CV sector would be allocated the remaining 90.57 percent of the crab PSC limits for the Pacific cod fishery. Table 2-110 shows the crab PSC limits for the BSAI Pacific cod fishery based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector. If the crab PSC sector limit is reached for the crab savings area, Pacific cod directed fishing in the area by the sector is closed and the sector would be required to target Pacific cod in other areas of the BS and AI if those areas are not closed to directed fishing due to other crab PSC closures or the Pacific cod TAC has been reached for the area.

Looking first at red king crab (Zone 1), the trawl CV sector would be apportioned 2,676 red king crab (Zone 1) animals, while the AFA C/P sector would be apportioned 313 red king crab (Zone 1) PSC animal limit using the 2019 red king crab (Zone 1) PSC limit of 2,954 animals for the BSAI Pacific cod fishery. At the trawl CV sector, the alternative only allocates A and B season CQ, so the alternative utilizes a five percent C season apportionment of red king crab (Zone 1), which yields 134 animals. When compared to the average C season PSC of red king crab (Zone 1) of 3.58 percent, a 5 percent apportionment of the annual limit to C season would slightly overfund the C season red king crab (Zone 1) apportionment at the cost of underfunding the A and B season apportionment and would potential trap a small amount PSC in the C season that would likely remain in the water rather than being used in the A and B seasons to harvest BSAI Pacific cod CQ.

Factoring a 35 percent reduction of the remaining 2,542 red king crab animals for the A and B seasons yields 1,652 animals for cooperative fishing. Despite the trawl CV sector only exceeding the combined PSC limits under this alternative once during 2004 through 2021, there is the potential that trawl CV cooperatives could be constrained by the red king crab (Zone 1) PSC limit and thereby requiring cooperative vessels to fish outside of Zone 1 for their remaining BSAI Pacific cod CQ.

Following the Council's selection of a preferred alternative during the October 2021 meeting, the red king crab TLAS PSC limit for 2022 was set at 975 animals during the harvest specification process. Based on the 2022 TLAS PSC limit and factoring in the trawl CV apportionment, the 35 percent PSC reduction, and a 5 percent C season apportionment, 545 red king crab Zone 1 animals would be allocated to the trawl CV sector for cooperative fishing during the A and B seasons. Although the trawl CV sector reported red king crab Zone 1 PSC greater than 545 animals for all three seasons combined three times since 2004, there is the potential the sector could be still be constrained by the allocation under Alternative 3 thereby requiring cooperative vessels to fish outside of Zone 1 for their remaining BSAI Pacific cod CQ.

As noted in Alternative 2a, there are at least two factors that could contribute to a higher risk of cooperatives exceeding the red king crab (Zone 1) PSC limit. The first is timeliness and data quality of at-sea observer data. In general, there is a relationship between the abundance of given species in a haul, the at-sea sample size, and the level of precision in the resulting estimate of species catch from sampling. As a result, we can have very high precision in the catch estimate for common (target species) with very small samples of the haul. Conversely, even extremely large samples of a haul provide relatively imprecise estimates of catch for very rare species, such as red king crab. As a result, there is the potential that an unusually high sample of red king crab (Zone) could be applied to the vessel's haul which could increase the risk of the cooperative exceeding its red king crab (Zone 1) PSC limit. See Section 2.10.1.2 for further details on challenges with at-sea sampling in relations to red king crab. As described in more detail in sections 2.8.11 and 2.9.7, the ability for an observer to transmit data to NMFS in near-real time results in improvements to quota monitoring and data quality. Because NMFS does not expect to require that observers deployed on vessels harvesting PCTC QC to have a minimum experience requirement, it is likely that many first-time observers may be deployed on vessels fishing under this program. Without at-sea data transmission, observers would not have the ability to communicate directly with NMFS staff to ask sampling questions and get feedback on their data collection methods, and observer data would only be transmitted to NMFS at the end of a trip. This delay creates a higher potential for data to be deleted and could result in less vessel-specific data for PSC estimates.

The second factor contributing to a higher risk of cooperatives exceeding the red king crab (Zone 1) PSC limit is the potential use of pot gear to harvest BSAI Pacific cod CQ. Alternative 3 provides the ability for BSAI Pacific cod CQ to be harvested using pot gear, which could provide greater flexibility for cooperatives in harvesting their BSAI Pacific cod CQ. As noted in Section of 3.3.2, the EA, the use of pot gear could result in lower halibut PSC but could result in higher crab PSC. When combined with a 35 percent reduction in crab PSC limits and accommodating a 5 percent C season Pacific cod trawl CV limited access fishery apportionment of crab PSC, there is a greater potential that a cooperative could increase their risk of being constrained by red king crab (Zone 1) PSC limits if pot gear was used to harvest CQ. As noted in Section 3.3.2 of the EA, the trawl CV sector would exceed its red king crab (Zone 1) PSC limit if approximately 5 percent of the CQ was fished with pot gear, which would result in the closure of area (Zone 1) to fishing.

Potential reducing some of the risk to cooperatives from constraining PSC limits is the harvest specification process which allows for adjustments in PSC apportionment at the fishery level. With greater flexibility to adjust PSC limits at the fishery level via the harvest specification process, there is the potential for reduced disruptions due to constraining PSC limit in the Pacific cod fishery during the upcoming fishing year.

There are a few approaches at the inter-cooperative level to manage cooperatives PSC limits like monetary penalties for exceeding a limit, transfers of PSC between cooperatives, and/or PSC insurance pool. Nevertheless, the results of a cooperative exceeding a PSC limit could limit the ability of the cooperative in harvesting their Pacific cod CQ. The loss of fishing in Zone 1 by a cooperative could result in the cooperative having lower catch rates of Pacific cod which would increase the cost of fishing for cooperative vessels thereby reducing economic returns. In addition, having to move out of Zone 1 to harvest CQ could result in cooperative vessels moving from relatively Pacific cod grounds with lower halibut PSC to grounds that have a higher halibut PSC, which increase the risk of the cooperative reaching its halibut PSC limit. One option the Council might consider in helping to reduce the constrain of the red king crab (Zone 1) PSC limit is to manage this PSC limit at the sector level rather than at the cooperative level. This approach would provide greater flexibility for cooperatives to manage this PSC limit by not closing the crab savings area at the cooperative level. Instead, the crab savings area would be closed once the sector reached the PSC limit.

For *C. opilio* (COBLZ), Alternative 3 would likely not constrain cooperative fishing for CQ. The trawl CV sector would be apportioned 89,657 animals and the AFA C/P sector would be apportioned 10,490 animals based on the 2019 *C. opilio* (COBLZ) PSC limit of 98,959 animals for the BSAI Pacific cod fishery. Factoring in the five percent C season apportionment for the trawl CV limited access fishery yields 4,483 animals while the remaining 85,174 animals would be available for the A and B season BSAI Pacific cod CQ fishery based on the 2019 *C. opilio* (COBLZ) crab PSC limit of 98,959 animals. Since annual PSC *C. opilio* (COBLZ) crab is very low relative to the PSC limit, the 5 percent C season apportionment would accommodate the C season trawl CV limited access fishery but likely not underfund the A and B seasons. When combined with the 35 percent reduction of *C. opilio* (COBLZ) crab PSC limit for the A and B seasons, the allocation that would be made available to cooperatives would be 55,363 animals, again assuming the 2019 *C. opilio* (COBLZ) crab PSC limit of 98,959 animals. The remaining 29,811 animals that is not included with the A and B seasons allocation to cooperatives would remain in the water. Overall, after factoring in the five percent C season apportionment and the 35 percent reduction of *C. opilio* (COBLZ) crab PSC limit and recognizing the extremely low *C. opilio* (COBLZ) crab PSC by the sector, that allocation of *C. opilio* (COBLZ) crab PSC limit under this alternative is likely sufficient to not constrain cooperative fishing for BSAI Pacific cod CQ or the trawl CV limited access fishery under this alternative.

C. bairdi (Zone 1) PSC limit for the trawl CV sector using 2019 *C. bairdi* (Zone 1) crab PSC limit of 60,000 animals for the BSAI Pacific cod fishery would result in 54,360 animals for the trawl CV sector and 6,360 animals for the AFA C/P sector. A five percent C season apportionment for the trawl CV

limited access fishery would be 2,718 animals, and after factoring in a 35 percent reduction of the remaining 51,642 animals, cooperatives would be allocated 33,567 *C. bairdi* (Zone 1) animals for the A and B seasons. The remaining 18,075 *C. bairdi* (Zone 1) animals would remain in the water. Although the sector has had *C. bairdi* (Zone 1) PSC greater than 33,567 animals in the during 2004 through 2008, since those years, the trawl CV sector's *C. bairdi* (Zone 1) PSC has declined sufficiently enough that reduced *C. bairdi* (Zone 1) PSC limits would likely not constrain cooperative fishing for BSAI Pacific cod CQ under this alternative.

For *C. bairdi* (Zone 2) PSC limits using the 2019 *C. bairdi* (Zone 2) crab PSC limit of 49,999 animals for the BSAI Pacific cod fishery, the trawl CV sector would be apportioned 45,299 animals and the AFA C/P sector would be apportioned 5,300 animals. Factoring in a five percent C season apportionment for the trawl CV limited access fishery would yield 2,265 *C. bairdi* (Zone 2) animals. Factoring in a 35 percent reduction to the remaining 43,034 *C. bairdi* (Zone 2) animals, cooperatives would be allocated 27,972 *C. bairdi* (Zone 2) animals for the A and B seasons to harvest BSAI Pacific cod CQ. The remaining 15,062 *bairdi* (Zone 2) animals would remain in the water. Since *C. bairdi* (Zone 2) PSC had declined from a high of 18,274 animals in 2006 to a low of 30 animals in 2016, reduced *C. bairdi* (Zone 2) PSC limits proposed under this alternative would likely not constrain cooperative fishing for BSAI Pacific cod CQ or the trawl CV limited access fishery.

Groundfish bycatch management

Under Alternative 3, just like Alternative 2a and Alternative 2b, targeted BSAI Pacific cod catch history would be assigned to qualified LLP licenses. To manage groundfish catch in the Pacific cod fishery as well as Pacific cod in other groundfish fisheries, NMFS will rely on traditional management tools like an ICA and MRAs. For incidental catch of Pacific cod, NMFS would establish an ICA that would be deducted prior to QS distribution to cooperatives. The ICA would be set up just like Alternative 2a in that it would be based on intrinsic Pacific cod catch rates in other BSAI trawl CV fisheries, TACs of the other groundfish fisheries, and whether it is a harvest specification ICA or an inseason ICA. The ICA would be determined on an annual basis to provide inseason management flexibility. The ICA would also account for the MRA amounts of Pacific cod in other target fisheries.

In addition, the MRA amounts in the targeted Pacific cod fishery will provide management control of other groundfish. Under this alternative, there appears to be limited opportunities for qualified trawl CVs utilizing the benefits of a cooperative program to strategically target incidental catch species. For most groundfish species, the additional flexibility to “top off” early in a fishing trip is not expected to affect groundfish stocks. For some groundfish species though, the greater flexibility to “top off” for a species in combination with other factors like low OFL, ABC, and TAC relative to high total catch could increase the risk of exceeding the ABC and TAC. However, as noted in Table 11 to 50 CFR §679, the MRAs for these at-risk species in the BSAI are set extremely low to discourage “top off” fishing.

Overall, the use of MRAs and ICAs as tools for managing the groundfish fisheries under Alternative 2b would continue with similar results in limiting groundfish bycatch in the BSAI Pacific cod trawl CV fishery and would not differ in effects with Alternative 2a or Alternative 2b.

2.10.4. Effects on Other Groundfish Fisheries

2.10.4.1. Alternative 1: Status Quo (No Action)

Sideboards are the primary management tool utilized in the North Pacific to limit those receiving QS from expanding into other fisheries at levels that exceed their historical participation. Under status quo, existing sideboard limits, as described in Section 2.7.4.1, from the AFA Program, BSAI Crab Program, and the CGOA Rockfish Program would continue to limit groundfish bycatch and PSC.

In the GOA, as noted in Table 2-124, AFA sideboard restricted trawl CVs on average have harvested far less than their limit during 2004 through 2019. For example, the primary GOA sideboard fishery for this

group of vessels is pollock. This group of AFA vessels has harvested on average between 22 percent of the GOA pollock sideboard limit during the 2009 through 2013 year and 29 percent of the GOA pollock sideboard limit during the 2014 through 2019 years. By comparing the average harvest between the three sets of years, changes in harvest are noticeable. For example, the average harvest for pollock during 2014 through 2019 is 29 percent, which is a slightly higher average compared to the 2009 through 2013 average of 22 percent. Other sideboard fisheries showing an increased average in more recent years is rex sole and shallow-water flatfish. Showing a lower average include arrowtooth flounder, POP, northern rockfish, and flathead sole. In general, one of the primary reasons AFA vessels do not harvest a greater share of the sideboard limit is likely due conflicts between the BSAI Pacific cod season and GOA groundfish seasons. Given these continued seasonal conflicts, it is likely harvest of GOA AFA trawl CV sideboard fisheries would likely continue at similar rates under the status quo alternative.

For the BSAI trawl fisheries, they are managed as TLAS fisheries. The primary TLAS fisheries for the trawl CV sector include Pacific cod, AI POP, Atka mackerel, and yellowfin sole since the remaining TLAS species are fully allocated to the Amendment 80 sector, insufficient for a directed fishery, or PSC is not apportioned to the fishery (Greenland turbot/arrowtooth flounder/Kamchatka flounder/sablefish).

Currently, there is an AFA Pacific cod trawl gear CV sideboard limit and the AFA yellowfin sole sideboard limit. As noted in Section 12.2.1 of the July 2017 AFA Program Review, the BSAI Pacific cod fishery is the primary sideboard fishery in which AFA CVs have historically participated. The sideboard limit for AFA trawl CVs is 86.09 percent of the trawl CV 22.1 percent apportionment of the BSAI Pacific cod ITAC. Between 2004 and 2019, approximately 56 percent of the sideboard limited was harvested. Under the status quo alternative, this harvest percentage would likely continue or increase if the market value of the Pacific cod increases relative to other groundfish.

Specific to the yellowfin sole fishery, each year NOAA Fisheries allocates an amount Amendment 80 species available for harvest to the Amendment 80 sector and the BSAI TLAS sector which is available for the AFA C/P sector and trawl CV sector. Allocations made to the Amendment 80 sector are not available for harvest by participants in other fishery sectors and the Amendment 80 sector is precluded from participating in the TLAS fisheries (NPFMC, 2007). The Council's intent for establishing the yellowfin sole TLAS fishery was to provide harvesting opportunities for AFA C/Ps and CVs during periods of high yellowfin sole TACs.

For yellowfin sole, the Council used a different approach in determining the Amendment 80 and TLAS allocations. The proportion of yellowfin sole ITAC allocated between the Amendment 80 and BSAI TLAS sectors depends on the yellowfin sole ITAC. As the ITAC for BSAI yellowfin sole increases, the proportion of the ITAC assigned to the BSAI TLAS also increases. The total ITAC allocated to the Amendment 80 sector and the BSAI TLAS fishery is determined by adding the sum of the percentage of ITAC allocations.

The intent of increasing yellowfin sole allocations between to the BSAI TLAS was to better accommodate major shifts in the yellowfin sole trawl fisheries during periods of high yellowfin sole ITAC. In addition, this approach was thought to provide increasing harvest opportunities for some non-Amendment 80 trawl sectors, while also maintaining some consistency with the historical amount of catch available for the Amendment 80 sector (NPFMC, 2007).

Table 2-172 provides historical ABC, TAC, ITAC, Amendment 80 and BSAI TLAS allocations for BSAI yellowfin sole, 2004 through 2021.

Table 2-181 BSAI yellowfin sole ABC (mt), TAC (mt), ITAC (mt), AM80 (mt) and TLAS (mt) allocations, 2004 through 2021

Year	ABC	TAC	ITAC*	AM80	BSAI TLAS
2004	114,000	86,075	73,164		
2005	124,000	90,686	77,083		
2006	121,000	95,701	81,346		
2007	225,000	136,000	115,600		
2008	248,000	225,000	200,925	160,413	38,512
2009	210,000	210,000	187,530	146,376	39,154
2010	219,000	219,000	195,567	171,198	22,369
2011	240,000	196,000	175,028	140,875	32,153
2012	239,000	202,000	180,386	142,089	36,297
2013	203,000	198,000	176,814	139,946	34,868
2014	206,000	184,000	164,312	132,205	29,707
2015	239,800	149,000	133,057	120,912	16,165
2016	211,700	144,000	128,592	117,558	14,979
2017	260,800	154,000	137,522	114,871	18,151
2018	277,500	154,000	137,522	115,171	18,351
2019	263,200	154,000	137,522	115,171	18,351
2020	260,918	150,700	134,575	113,403	17,172
2021	313,477	200,000	178,600	139,818	34,782

Source: NMFS Final Specifications

TLAS = trawl limited access sector

*ITAC = TAC - CDQ

To help facilitate the BSAI TLAS yellowfin sole directed fishery, there are no AFA C/P or CV sideboard limits for yellowfin sole when the yellowfin sole ITAC is equal to or greater than 125,000 metric tons (mt). The Council's intent for removing the BSAI yellowfin sole sideboards above 125,000 mt ITAC was to allow AFA sectors the potential to expand their harvest in the yellowfin sole fishery in periods of diminished availability of pollock (NPFMC, 2007). Because most of the yellowfin sole ITAC was allocated to the Amendment 80 sector for exclusive harvest, the need for AFA sideboard limits was greatly reduced since AFA vessels no longer directly compete with the Amendment 80 sector active in the yellowfin sole fishery.

Below a 125,000 mt ITAC, the yellowfin sole sideboard limits are based on the 1995 through 1997 aggregated retained catch of yellowfin sole for AFA CV sector and AFA C/P sector relative to the total catch of yellowfin sole during the same period. The resulting ratios (0.0647 for AFA CVs and 0.230 for AFA C/Ps) are then multiplied by the available yellowfin sole TAC minus the CDQ allocation. Table 2-182 provides the yellowfin sole sideboard limits for AFA CVs and C/Ps from 2004 through 2021. Since 2008, the yellowfin sole ITAC has been higher than 125,000 mt, so sideboard limits have not been in place for AFA vessels.

Table 2-182 Yellowfin sole sideboard limits for AFA CVs and C/Ps from 2004 through 2021

Year	ITAC*	AFA CV	AFA CP
2004	73,164	4,734	17,047
2005	77,083	4,987	17,960
2006	81,346	5,263	18,954
2007	115,600	7,479	26,935
2008	200,925	None	None
2009	187,530	None	None
2010	195,567	None	None
2011	175,028	None	None
2012	180,386	None	None
2013	176,814	None	None
2014	164,312	None	None
2015	133,057	None	None
2016	127,592	None	None
2017	137,522	None	None
2018	137,522	None	None
2019	137,522	None	None
2020	134,575	None	None
2021	178,600	None	None

Source: NMFS Final Specifications

*ITAC = TAC - CDQ

On November 5, 2018, NMFS issue a regulation to implement Amendment 116 to the BSAI FMP that limits access to the TLAS yellowfin sole directed fishery by vessels that deliver their catch of yellowfin sole to motherships for processing. The final rule established eligibility criteria based on historical participation in the BSAI TLAS yellowfin sole directed fishery; issued an endorsement to LLP licenses that meet the eligibility criteria; and authorized delivery of BSAI TLAS yellowfin sole to motherships by only those vessels designated on a groundfish LLP license that is endorsed for the BSAI TLAS yellowfin sole directed fishery. The action was necessary to prevent increased CV participation from reducing the benefits the fishery provides to historical and recent participants, mitigate the risk that a “race for fish” could develop, and help to maintain the consistently low rates of halibut PSC in the BSAI TLAS yellowfin sole directed fishery. There are eight LLP licenses that are endorsed for delivering BSAI TLAS yellowfin sole to motherships, two of which are AFA derived LLP licenses and the remaining six are non-AFA derived LLP licenses. Of these eight endorsed LLP licenses, all would qualify for the PCTC Program based on the current qualifying year options.

The BSAI TLAS yellowfin sole directed fishery is an offshore fishery composed of two groups: 1) AFA C/Ps, and 2) AFA and non-AFA CVs that deliver to motherships, which as of the 2019 fishing year only eight LLP licenses are authorized to deliver to motherships. CVs participate by delivering yellowfin sole to C/Ps acting as motherships or true motherships. C/Ps participate in the offshore sector by catching and processing yellowfin sole or by receiving and processing deliveries of yellowfin sole from CVs (acting as a mothership). Motherships participate in the offshore sector by receiving and processing deliveries of yellowfin sole from CVs. The historical absence of an inshore market for BSAI yellowfin sole is likely a factor of challenges of shoreside offloading, processing the multiple groundfish species that are normally delivered with a yellowfin sole trip, and the distance from fishing grounds.

Table 2-183 provides data on BSAI TLAS yellowfin sole catch in relation to yellowfin sole ITAC and BSAI TLAS allocation from 2004 through 2020. During the first five years of the BSAI TLAS yellowfin sole directed fishery (2008 through 2012), fishing effort, combined with high allocations, were such that

the fishery was not fully utilized. Harvest percentages ranged from a low of 31% in 2009 to a high of 87% in 2010, after accounting for the reapportionment of BSAI TLAS yellowfin sole allocation to the Amendment 80 sector. This was likely due, in part, to a combination of low wholesale prices in 2009 and 2010 and fewer AFA C/P vessels active in the fishery likely because of increasing pollock ITAC starting in 2011. Starting in the 2013, the BSAI TLAS yellowfin sole directed fishery was a fully utilized fishery. Table 2-183 also provides annual incidental catch of BSAI yellowfin sole, which has ranged from a low of 232 mt in 2010 to a high of 3,370 mt in 2014. The largest portion of incidental catch occurs in the BSAI TLAS Pacific cod fishery. BSAI yellowfin sole incidental catch is accommodated by the ICA, which in 2017 was 4,500 mt.

Table 2-183 Yellowfin sole ITAC, BSAI TLAS allocation, and target and incidental catch of yellowfin sole BSAI TLAS (2004 through 2020)

Year	YFS ITAC (mt)	BSAI TLAS YFS allocation (mt)	BSAI TLAS YFS allocation as a % of YFS ITAC	BSAI YFS target catch from 2004-2007 ² & BSAI TLAS YFS target catch from 2008-20120 (mt)	BSAI TLAS YFS target catch as a % of BSAI TLAS allocation	BSAI YFS target catch as a % of YFS ITAC	YFS incidental catch (mt)
2003	71,188			4,461		6	853
2004	73,164			4,386		6	771
2005	77,083	N/A	N/A	7,995	N/A	10	904
2006	81,346			13,361		16	1,206
2007	115,600			22,214		19	887
2008 [^]	200,925	32,512	16	20,017	62	10	1,017
2009 [^]	187,530	33,154	18	10,181	31	5	2,506
2010 [^]	195,567	22,369	11	19,421	87	10	232
2011	175,028	32,153	18	25,485	79	15	1,632
2012	180,386	36,297	20	28,140	78	16	1,698
2013	176,814	34,868	20	34,606	99	20	2,534
2014	164,312	29,707	18	27,720	93	17	3,370
2015	133,057	16,165	12	16,073	99	12	2,691
2016	127,592	14,979	12	14,708	98	12	3,887
2017	137,522	18,151	13	18,593	102	14	2,768
2018	137,522	18,351	13	17,930	98	13	3,455
2019	137,522	18,351	13	17,163	94	12	2,472
2020	150,700	17,172	11	17,196	100	11	1,743

Source: NMFS Final Specifications

Source file: YFS Table Updates(3-31-21)

¹ITAC = TAC - CDQ

²Catch of BSAI YFS target catch by AM80 vessels has been removed from BSAI YFS target catch (2004-2007)

[^]BSAI TLAS YFS allocation was adjusted to account for reapportionment of YFS from the BSAI TLAS to Amendment 80

TLAS = trawl limited access sector

YFS = yellowfin sole

From a harvesting perspective, AFA C/Ps have been a major participant in BSAI TLAS yellowfin sole directed fishery. In fact, up to 2015, AFA C/Ps harvested 85% of the BSAI TLAS yellowfin sole catch. However, since 2015, the C/P sector's percent of the BSAI TLAS yellowfin catch has diminished to an average of 44 percent. As noted in Table 2-184, in 2015, 7 C/Ps harvested 8,875 mt of yellowfin sole in the BSAI TLAS fishery, which is 55% of the BSAI TLAS allocation. In contrast, in 2019, three C/Ps harvested 4,986 mt of yellowfin sole in the BSAI TLAS fishery, which was 29 percent of the BSAI TLAS allocation.

As for trawl CV participation in the BSAI TLAS yellowfin sole directed fishery, activity shifted starting in 2015. Prior to 2008, the number of CVs ranged from one in 2005 to four in 2006. Starting in 2015, the number of CVs active in the fishery increased to six. In total, there were sixteen unique CVs that participated in the BSAI yellowfin sole fishery from 2003 through 2018. The increase in the number of

CVs during this period was due primarily to the increase in motherships entering the fishery likely seeking greater processing opportunities. Since implementation of Amendment 116 starting in 2019, the number of trawl CVs participating in the BSAI yellowfin sole fishery on an annual basis has been seven.

As for timing of the harvest of BSAI yellowfin sole relative to other TLAS fisheries, harvest patterns for CVs have changed over time. During the 2008 fishing season, the CVs participated in the BSAI TLAS yellowfin sole directed fishery from March until December. During the next two years, the CVs participated in the BSAI TLAS yellowfin sole directed fishery in April and in September and October. Starting in 2012, CVs generally participated in the BSAI TLAS yellowfin sole directed fishery throughout the entire year until the fishery closed to directed fishing. With regard to the trawl CVs participating in the BSAI Pacific cod fishery, they tend to focus their fishing effort during the first three months of the year, so there is some overlap in fishing effort by trawl CVs in both fisheries.

Table 2-184 Vessel count and catch for BSAI TLAS yellowfin sole directed fishery, 2004 through 2020

Year	BSAI YFS ITAC ¹ (mt)	BSAI TLAS YFS allocation (mt)	C/Ps		Offshore activity			BSAI YFS target catch from 2004-2007 ² & BSAI TLAS YFS target catch from 2008-2020 (mt)
			Vessel count	Harvest BSAI YFS from 2004-2007 ² and BSAI TLAS YFS from 2008-2020 (mt)	Total CV count (delivering to motherships)	CVs AFA CV count	Harvest BSAI YFS from 2004-2007 ² and BSAI TLAS YFS from 2008-2020 (mt)	
2003	71,188		3	*	0	0	*	4,461
2004	73,164		4	*	2	1	*	4,386
2005	77,083	N/A	5	*	1	0	*	7,995
2006	81,346		6	*	4	3	*	13,361
2007	115,600		8	*	3	1	*	22,214
2008 [^]	200,925	32,512	12	*	3	0	*	20,017
2009 [^]	187,530	33,154	8	*	1	0	*	10,181
2010 [^]	195,567	22,369	9	*	0	0	*	19,421
2011	175,028	32,153	9	*	2	0	*	25,485
2012	180,386	36,297	10	*	3	0	*	28,140
2013	176,814	34,868	8	*	3	0	*	34,606
2014	164,312	29,707	10	*	3	0	*	27,720
2015	133,057	16,165	7	8,875	6	2	7,202	16,073
2016	127,592	14,979	5	7,716	9	4	7,011	14,708
2017	137,522	18,151	3	7,758	8	3	10,835	18,593
2018	137,522	18,351	4	9,112	6	1	8,818	17,930
2019	137,522	18,351	3	4,986	7	3	12,177	17,163
2020	150,700	17,172	2	*	7	3	11,605	*

Source file: YFS Table Updates(3-31-21)

*Denotes confidential data

¹ITAC = TAC - CDQ

²Catch of BSAI YFS target catch by AM80 vessels has been removed from BSAI YFS target catch (2004-2007)

[^]BSAI TLAS YFS allocation was adjusted to account for reapportionment of YFS from the BSAI TLAS to Amendment 80

TLAS = trawl limited access sector

YFS = yellow fin sole

For the Atka mackerel fishery, there are two fisheries: one in the Central AI and one in the BS and Eastern AI. The BS and Eastern AI fishery technically covers both of those areas, but because the BS is closed to directed fishing for Atka mackerel, the BSAI TLAS directed fishing only takes place in the Central AI and the Eastern AI. There are three POP TLAS fisheries: Western AI, Central AI, and Eastern AI. The Western AI POP fishery is 2 percent of the non-CDQ DFA.

Historically, all AFA sideboards for these fisheries have been closed in the harvest specifications, except Atka mackerel in the Central AI for AFA C/Ps. In all other cases, the sideboards were too small to support directed fisheries. With the recent replacement of most of the AFA sideboard limits with directed fishing prohibitions, the only AI TLAS fishery available to AFA vessels is the Central AI Atka mackerel fishery for C/Ps only. Therefore, to fish in the AI TLAS fisheries, a non-AFA (except for the Central AI Atka mackerel fishery for C/Ps) vessel with an AI non-AFA trawl LLP license is required. There are a limited number of LLP licenses with this endorsement.

The Western AI POP fishery is two percent of the non-CDQ DFA. All other POP and Atka mackerel TLAS fisheries are 10 percent of the non-CDQ directed fishing allowance. Because none of these fisheries has sufficient non-CDQ DFA to support an open access derby style fishery, industry developed a voluntary cooperative fishing plan for these fisheries. Almost all catch data for these fisheries are confidential because of the number of vessels participating, but NMFS has closed these fisheries on TAC each year.

2.10.4.2. Alternatives 2a, 2b, and Alternative 3 (PA)

Under the action alternatives, GOA non-exempt AFA CV groundfish sideboard limits would be revised for all non-exempt AFA CVs and LLP licenses including non-PCTC qualified CVs and LLP licenses. In June 2021, the Council did not include halibut PSC in their revisions of AFA GOA non-exempt sideboard limits, so the action alternatives do not include a revision to these sideboard limits. Given the analysis includes sufficient information in Element 4 analysis on impacts of revising the halibut PSC sideboard limits, the Council could decide to include revisions to halibut PSC sideboard limits in its PA.

For Alternative 2a, the revised GOA non-exempt groundfish sideboard limits would be based on 2014 to 2019 GOA fishing activity, for Alternative 2b the groundfish sideboard limits would be based on 2004 to 2019 GOA fishing activity, and for Alternative 3 the groundfish sideboard limits would be based on 2009 to 2019 GOA fishing activity (see Table 2-125). The revised GOA non-exempt groundfish sideboard limits relies on aggregate retained catch of all non-exempt AFA CVs in each sideboard species or species group relative to the sum of the TACs for these species or species groups. Relatively to the existing sideboard limits, Alternatives 2a, 2b, and 3 revised GOA non-exempt AFA CV groundfish sideboard limits shown in Table 2-125 are lower compared to the existing limits seen in Table 2-121 due to the limited fishing activity by all of the non-exempt AFA CVs in these sideboard fisheries during the range of years (see Table 2-124). In some cases, revised GOA sideboard limits would likely be insufficient for a directed fishery. To streamline sideboard limits and ease management burden, Alternative 3, which is the Council's PA, would prohibit directed fishing in regulations for the GOA non-exempt CVs and LLP licenses for SEO pollock, Western shallow-water flatfish, and both Central and Eastern deep-water flatfish, and Eastern POP.

Alternatives 2a, 2b, and 3 would also prohibit PCTC Program eligible GOA sideboard exempt AFA CVs and non-AFA CVs from leasing their BSAI Pacific cod catch history on their LLP licenses as a condition of benefiting from the GOA sideboard exemptions developed from the PCTC Program unless the vessel assigned to the qualified exempt LLP license does not fish in the GOA during the calendar year (except for the CGOA Rockfish Program). This language provides greater flexibility for those GOA exempt CVs assigned to an LLP license that receive annual BSAI Pacific cod CQ to lease that CQ if the vessel authorized by the LLP license does not fish in the GOA. This is important for those GOA exempt CVs that are not designed to deliver Pacific cod shoreside (i.e., lack hold capacity) and have a limit offshore market since PCTC Program eligible C/Ps may not be able to provide markets for all offshore designed CVs (see Section 2.10.2). The combination of having a CV designed only for offshore deliveries, no market for deliveries of Pacific cod CQ, and a prohibition on leasing of CQ for GOA exempt LLP licenses could have resulted in Pacific cod CQ being stranded. There are currently seven eligible GOA exempt vessels authorized by LLP licenses with BSAI Pacific cod CQ that have delivered offshore in the BSAI Pacific cod fishery. Of those seven vessels, three vessels have not been active in the GOA since

2003. As long as these three holders continue to not fish in the GOA, these three vessels could choose to lease their BSAI Pacific cod CQ if the holders do not have a market to delivery their CQ or they perceive there is an economic advantage to focusing their fishing effort in other BSAI groundfish fisheries rather than harvesting their CQ.

In addition, AFA GOA exempt and non-AFA CVs with LLP licenses that have less than 200 mt of average annual BSAI Pacific cod qualifying catch for Alternative 2a and less than 600 mt of average annual BSAI Pacific cod qualifying catch for Alternative 2b may lease their BSAI CQ and continue to benefit from GOA sideboard exemption. For Alternative 3, the Council selected a threshold option of 300 mt of average annual BSAI Pacific cod qualifying catch to authorize leasing of BSAI Pacific cod CQ and benefit from GOA sideboard exemption.

Under Alternative 2a, eight GOA sideboard exempt AFA CVs and non-AFA CVs would qualify to lease their BSAI Pacific cod CQ and be exempt from GOA sideboard limits given the PCTC Program eligible LLP licenses had less than 200 mt of average annual qualifying BSAI Pacific cod catch history. Under alternative 2b, 23 GOA sideboard exempt AFA CVs and non-AFA CVs would be authorized to lease their BSAI Pacific cod CQ and still be exempt from GOA sideboard limits given the LLP licenses had less than 600 mt of average annual qualifying BSAI Pacific cod catch history. Under Alternative 3, 18 GOA sideboard exempt AFA CVs and non-AFA CVs would be authorized to lease their BSAI Pacific cod CQ and still be exempt from GOA sideboard limits given the LLP licenses had less than 300 mt of average annual qualifying BSAI Pacific cod catch history.

Note that if the Council applies a minimum threshold percentage of average annual qualifying BSAI Pacific cod catch history for eligibility to receive QS under Element 2, depending on the threshold percentage applied, it is likely some or all these same LLP licenses may not qualify for BSAI Pacific cod QS. For example, under Alternative 2b, a one percent minimum threshold percentage would be applied which results in 41 LLP licenses that would not qualify for BSAI Pacific cod QS (see Table 2-85). Of those 41 LLP licenses that would not qualify for QS, all 23 GOA sideboard exempt AFA CVs and non-AFA CVs that qualify to lease their BSAI Pacific cod CQ and be exempt from GOA sideboard limits under this alternative would in fact not qualify for the PCTC Program since their average annual qualifying BSAI Pacific cod catch history is less one percent of the total allocation.

Alternatives 2a, 2b, and 3 would rely on cooperatives to monitor exempt AFA CVs and non-AFA CVs to ensure they do not lease their BSAI Pacific cod CQ while benefiting from sideboard exemptions to ensure they do not lease their BSAI Pacific cod CQ and to implement a penalty structure for violations. Tracking and monitoring of BSAI Pacific cod CQ leases by exempt CVs can be better accomplished by the cooperatives. NMFS does not have the ability to track individual LLP license holder leases within a cooperative during the fishing year.

In the BSAI, determining the impacts of Alternatives 2a, 2b, and 3 on existing participants to determine the need for sideboard limits, only AI POP, Atka mackerel, and yellowfin sole are considered since the other groundfish species are fully allocated to the Amendment 80 sector (flathead sole and rock sole), TACs are insufficient for a directed fishery, or PSC is not apportioned to the fishery (Greenland turbot/arrowtooth flounder/Kamchatka flounder/sablefish).

For the Atka mackerel and POP fisheries, this action is unlikely to cause Pacific cod trawl fisheries participants to disrupt these fisheries.

As for the BSAI yellowfin sole fishery, holders of the eight LLP licenses with yellowfin sole offshore delivery endorsements that are also eligible for PCTC Program QS could use this increased flexibility of the cooperative management to expand their harvest of BSAI yellowfin sole¹⁶⁵. However, the AFA C/Ps are also managed under a cooperative system, so the AFA C/Ps have a similar advantage. AFA

¹⁶⁵ The RIR (<https://repository.library.noaa.gov/view/noaa/19255>) for BSAI FMP Amendment 116 (p. 25-26) provides background on the history of using Amendment 80 vessel as motherships in this fishery.

cooperative reports indicate that two AFA C/Ps have forgone directed fishing for pollock since 2012 and have reported directed harvests of yellowfin sole during those years. To some degree, increased fishing activity by the AFA C/Ps and the PCTC Program eligible holders of LLP licenses with offshore yellowfin sole endorsement depends on market prices for yellowfin sole relative to Pacific cod and pollock market prices. During periods of high prices for yellowfin sole relative to Pacific cod and pollock prices, there is more likelihood that some AFA C/Ps and trawl CVs authorized to deliver yellowfin sole offshore could expand their yellowfin sole fishing effort relative to their Pacific cod and pollock fishing effort and vice versa.

Given both the AFA C/Ps and the trawl CVs authorized for deliveries of offshore harvested yellowfin sole are cooperatively managed, the case for sideboard limits to protect historical harvest is not as clear. In the past, the Council has utilized sideboards to protect historical participants due to the disadvantage of cooperative management. However, since both harvest groups enjoy the advantage of cooperative management, the traditional reason for sideboard limits are less clear. The absence of an inshore market for both AFA C/Ps and trawl CVs would also make sideboard limits unnecessary and ineffective since there is no shoreside catch history in which to generate the sideboard limit. Combined with the added management and enforcement burden of a new sideboard limit, the case for sideboard limits in the BSAI yellowfin sole fishery are even more difficult to discern. Finally, sideboard limits can create additional complexity and cost for the industry, catch accounting, and additional effort for management.

Incidental catch of Pacific cod would be accounted for outside the cooperative, so there is the potential that cooperative vessels could intentionally top off on incidental Pacific cod while fishing in other groundfish fisheries. As shown in Table 11 to 50 CFR §679, the MRA of Pacific cod as incidental catch in other BSAI directed fisheries (basis species) is set at 20 percent. As a result, those cooperative members that routinely fish in other groundfish fisheries could purposely increase their incidental harvest of BSAI Pacific cod up to the 20 percent MRA. If incidental catch of BSAI Pacific cod by cooperative vessels increases such that NMFS has to increase the ICA to account for this catch by trawl CVs, there is the potential that the BSAI Pacific cod allocations to the cooperatives will be reduced.

Impacts on non-PCTC Vessels

Some of the elements and options, in addition to those described above, that are being considered for the PCTC may directly impact where and how trawl CVs choose to fish BSAI Pacific cod that will impact other Pacific cod harvest sectors. These elements and options include whether the C season is allocated under the PCTC program, allocations or set-asides for AI shoreplants, and allowing pot gear vessels to harvest CQ. For additional discussion of allocating the C Season and the use of pot gear to harvest PCTC CQ the reader is referred to Sections 2.8.2 and 2.8.14, respectively. The focus of this section is on the distribution of catch between the AI and BS and impacts of Element 6 has on these decisions.

The discussion at the end of Section 2.8.6 provides information on the AI Pacific cod ITACs, directed Pacific cod catch, and incidental Pacific cod catch for the years 2014 through 2020. Information provided in that section shows the impact that AI shoreplant set-asides or allocation would have had on the available AI ITACs those years. Some years the amount that trawl CVs could only harvest from the AI would not leave ITAC available for other sectors to have a directed AI fishery. This could negatively impact sectors that want to fish off the federal AI ITAC during the year. For example, some freezer longline vessels have traditionally fished in the AI after the trawl CV A season. Those years that fishery would not be available. If fishery conditions are similar to what is happening in 2021, the trawl CV sector, and other sectors, would focus their harvest activity on the BS. Because the trawl CV sector had limited markets in the AI and their preference was to fish the BS, AI ITAC remains available but the BS ITAC is potentially limiting the opening of BS pot gear fishing of Pacific cod during their B Season. Had the trawl CV sector been provided incentives to fish in the AI during the A Season, it may have lessened the impacts on sectors constrained by the limited BS ITAC later in the year. Other management measures

could be considered by the Council to address these issues, but they fall outside of the scope of this proposed management action.

2.10.5. Effects on Fishing Communities

Differential effects on fishing communities would be driven by the specific nature of engagement in and/or dependency on the BSAI Pacific cod trawl fishery through locally active relevant components of affected vessel, processor, and support service sectors, as well as the varying demographic, socioeconomic, and sociocultural attributes of the communities that shape relative vulnerability and resiliency. With respect to providing for the sustained participation of fishing communities (i.e., those communities substantially engaged in and/or dependent on the fishery), each of the proposed action alternatives features a history-based approach for initial allocation of quota shares that would be made in proportion to historical levels of participation in the fishery. After initial allocation, decisions made by those receiving initial allocations may impact patterns of community engagement in or dependency on the fishery in several ways, with consolidation in several forms, discussed below, being of expressed concern for communities with the implementation of previous LAPP programs.

With respect to minimizing, to the extent practicable, potential adverse impacts on fishing communities, several of the elements and option combinations of the proposed alternatives could in effect function as community protection measures including, for example:

- Element 2, Allocation to LLP Licenses, which includes a non-severability provision that could, in turn, serve to limit consolidation of local fleets as vessels would be less likely to be tied up at the dock if not actively harvesting CQ.
- Element 4, Gulf of Alaska Sideboards, which could serve to protect Gulf community fleets from increased competition resulting from rationalization of the Pacific cod fishery in the BSAI.
- Element 5, Processor and Community Provisions, which could serve to stabilize landings in communities with a history of BSAI Pacific cod processing during the qualification period.
- Element 6, Aleutian Islands Processor Provisions, which could potentially have beneficial impacts to communities in the western Aleutian Islands region (and potentially have adverse impacts to communities in other regions).
- Element 7, Transferability, which through the inability to sever catch histories from LLP licenses could serve to help limit consolidation of catch history associated quota between communities.
- Element 8, Ownership and Use Caps, which could potentially help limit consolidation of harvesting and processing activity between communities.

The salient community dimensions of these elements are described in the sector-based action alternative discussions below. Given the complexity of these interactions and the myriad potential combinations of elements and options within the range of alternatives being considered, this community effects section highlights some of the main types of potential community impacts associated with each of the proposed alternatives.

2.10.5.1. Alternative 1: Status Quo (No Action)

Existing patterns of community engagement in and dependency on the BSAI Pacific cod trawl CV fishery would be unlikely to fundamentally change under Alternative 1. The community of ownership address for most LLP licenses (and trawl CVs) would likely remain in the Pacific Northwest in general with the largest concentrations, by far, in the Seattle MSA and in Newport, Oregon. For Alaska fishing communities engaged in the BSAI Pacific cod trawl fishery through local address ownership of LLP licenses (and trawl CVs), consolidation of engagement into fewer and larger communities occurred over the 2004-2019 era, resulting in all Alaska ownership address LLP licenses being held in two communities after 2008 (Kodiak and Homer, with Homer LLP license ownership limited to a single unique license) and all Alaska ownership address BSAI Pacific cod trawl CVs being concentrated in one community

(Kodiak) after 2010. Deliveries of trawl-caught BSAI Pacific cod would likely continue to primarily be made to shore-based processors operating in Unalaska/Dutch Harbor and Akutan, given their proximity to the Bering Sea fishing grounds, and to Adak (when a local shore-based processor is operating - which is less likely since Amendment 113 was vacated), given its proximity to the AI fishing grounds; floating processors; and, in more limited amounts and in some years, to shore-based processors operating in King Cove and Sand Point. . It is also likely that under Alternative 1 race-for-fish conditions, shore-based processors in other Alaska communities would continue to explore opportunities to enter the fishery, as has occurred in False Pass, but the relatively short seasons experienced in recent years would likely to continue to make for challenging conditions for new entrants under this alternative. Private sector support services (outside of those provided by processing entities) within the BSAI region would likely remain largely concentrated in Unalaska/Dutch Harbor and those outside of the region would likely remain concentrated in the Seattle MSA and in Lincoln County, Oregon

2.10.5.2. Alternatives 2a, 2b and Alternative 3 (PA)

The anticipated effects on fishing communities are likely to be broadly similar under the three action alternatives, so to minimize redundancy the discussion of potential impacts of the alternatives has been combined, with particularly important differences to communities noted where relevant. Harvest sector, processing sector, and support service sector related effects are discussed in turn below.

2.10.5.2.1. Harvest Sector Related Effects

Overall patterns of community engagement in the fishery via the harvest sector are unlikely to fundamentally change based on any of the qualifying year range options from Element 2 included in the action alternatives, as the predominance of Seattle MSA and, to a lesser degree, Newport as a proportion of overall engagement varied relatively little over the years 2004-2019. However, the consolidation of Alaska community engagement that occurred over the 2004-2019 era would potentially be reflected to a greater or lesser degree in the patterns of allocation to LLP licenses with history gained while affiliated with different communities (Table 2-60) and the CVs on which those LLP licenses were utilized (Table 2-47). The greater the depth of the qualifying period, the greater the diversity of the Alaska community base of the allocation qualification history, as noted immediately below.

- Under Option 2.2.1 (2014-2019) with no drop years, included in Alternative 2a, allocations would be based on history earned on LLP licenses with Kodiak and Homer historical ownership addresses (and associated exclusively with CVs with Kodiak historical ownership addresses).
- Under Option 2.2.2 (2009-2019) with Suboption 2.2.1 (one drop year), included in Alternative 3, allocations would be based on history earned on LLP licenses with Kodiak and Homer historical ownership addresses (and associated with CVs with Kodiak, Sand Point, and Petersburg historical ownership addresses).
- Under Option 2.2.3 (2004-2019) with no drop years, included in Alternative 2b, allocations would be based on history earned on LLP licenses with Kodiak, Homer, False Pass, Sand Point, and Juneau/Douglas historical ownership addresses (and associated with CVs with Kodiak, Sand Point, Unalaska/Dutch Harbor, Anchorage/Girdwood, and Petersburg historical ownership addresses).

It is important to note, however, that LLP licenses have changed hands over time, such that (1) historical links to a community may not reflect any present-day association with the ultimate initial allocation recipients and (2) participation varied in consistency and intensity among those Alaska communities engaged in the trawl sector as communities of LLP license (or associated CV) historical ownership address, particularly if that engagement was limited to a few of the early years in the 2004-2019 era, meaning that historical engagement may translate to minimal fishing history contribution toward initial quota allocation. Nevertheless, fishing, in all its diversity, is economically, socially, and culturally important to Alaska coastal communities and if communities experience a relatively modest incremental

decline in fishing activity or a decrease in flexibility of continued access to the fishery because of the proposed action, there is the potential for adverse impacts.

An important distinction for several Alaska local community fleets between the action alternatives is that under Alternatives 2a and 3, harvest allocation would be for the A and B seasons only, with the C season remaining as a limited access fishery, while under Alternative 2b harvest allocation would be for A, B, and C seasons. Under Alternatives 2a and 3, reallocations from the BSAI Pacific cod trawl sector to the <60' HAL and pot sector would be more likely to continue, more likely to continue at higher levels, and would occur earlier in the year¹⁶⁶ than would be the case under Alternative 2b. While these reallocations have not occurred in every recent year, during those years when they did occur, they accounted for a substantial portion of total reallocations¹⁶⁷ received by the <60' HAL and Pot sector and the continuation of this pattern would likely be important for <60' HAL/pot CV operations based in multiple communities, not just in those with notable vessel concentrations including Kodiak, Unalaska/Dutch Harbor, and Homer. Uniquely among Alaska communities, however, this has been identified as particularly important for the Unalaska/Dutch Harbor local ownership address community fleet as a whole (all sectors and fisheries combined), based on percentage of total local small boat fleet ex-vessel gross revenue dependency attributable to BSAI Pacific cod reallocations.¹⁶⁸ It is also likely that if impacts to subsistence harvest of BSAI Pacific cod were to occur, through a decrease in retaining fish for subsistence use from commercial catch or from a decrease in commercial vessels being used as “joint production platforms” in both the commercial cod and multi-species subsistence fisheries, those impacts would likely be concentrated among the type of small vessels found in the Unalaska/Dutch Harbor local fleet. According to the Unalaska Native Fishermen’s Association, half of the active vessels in local fleet in both 2019 and 2020, including both those owned by association members and non-members, were less than 50’ LOA, with the largest vessels being 58’ LOA and the smallest being 18’ LOA.¹⁶⁹ Alternatives 2a and 3 would also potentially provide more opportunities than Alternative 2b with respect to potential entry of local vessels from Alaska communities where <60’ HAL and Pot CVs have not historically participated in the non-CDQ BSAI Pacific cod fishery. Conversely, under Alternative 2b, which includes C season allocations, those individuals, entities, and communities in Alaska and the Pacific Northwest directly engaged in BSAI Pacific cod trawl CV sector would have a greater chance to realize more of the full potential value of the existing overall sector allocation than has historically been the case under status quo conditions or would be under Alternatives 2a and 3.

Consolidation of CV effort/direct participation in the BSAI Pacific cod trawl fishery is expected to occur under a cooperative system, as not all vessels owned, operated, or controlled by cooperative members that fished during the historical qualification period would be needed to efficiently harvest the cooperative quota. It is likely, however, that full consolidation of vessels themselves (that is, vessels exiting all commercial fishing) would be limited by the fact that catch history would be attached to the LLP license and would be non-severable (and QS would be transferable with the LLP license) under all three action alternatives, as all include Element 7, Option 7.1. The likelihood that CVs with BSAI Pacific cod trawl history would remain active in other commercial fisheries if they do not harvest BSAI Pacific cod trawl CV cooperative quota is strengthened by the fact that for a large majority of these vessels, BSAI Pacific cod represents a relatively modest proportion of their overall fishing portfolio, which is like the situation in the well-established Central GOA rockfish program. From a community perspective, retention of active local vessels focused on other fisheries in their annual round portfolio would be a key to minimizing

¹⁶⁶ If the C season were also allocated (as under Alternative 2b), NMFS would be unable to reallocate Pacific cod until the cooperatives complete their post-delivery transfers, which could go through December 31 under the current motion.

¹⁶⁷ See Section 2.8.3 for a discussion of the annual process of BSAI Pacific cod reallocation among all gear types.

¹⁶⁸ For a discussion of other opportunities available in the state water GHL fisheries, see Section 2.8.4.

¹⁶⁹ Donkersloot, personal communication, 5/21/2020 and Dickerson, personal communication, 9/23/2020. Unalaska Native Fishermen’s Association definition of a local vessel includes those that are both owned and homeported in Unalaska and whose owners spend a significant amount of the year if not the entire year in the community.

adverse effects of the consolidation of CV effort in the BSAI Pacific cod trawl fishery as, for example, crew would still be employed, fish would still be delivered, and support service businesses would still have those vessels as a part of their customer base.

Alaska address ownership BSAI Pacific cod trawl CVs have been limited to Kodiak address vessels in the nine most recent years covered by the dataset used for this analysis (2010-2019). In general, those CVs are primarily focused on GOA fisheries, as measured by percentage contribution to annual ex-vessel gross revenues, so it is unlikely that they would exit those GOA fisheries because of cooperative formation in the BSAI Pacific cod fishery. The likelihood of those vessels continuing to fish in the GOA is strengthened by the fact that most of the Kodiak ownership address BSAI Pacific cod trawl vessels utilize LLP licenses with assigned quota in the rationalized Central GOA rockfish program, which is also not severable from the relevant LLP licenses. The recent (2019) rockfish program reauthorization analysis specifically noted the operational stability brought to the fleet dependent on that fishery. In contrast, CVs with ownership addresses in the Pacific Northwest engaged in the BSAI Pacific cod trawl fishery are more dependent on that fishery, as measured in percentage contribution to average annual ex-vessel gross revenues, both on a community BSAI Pacific cod trawl sector basis (see Table 2-49) and on a community overall fleet (all fisheries) basis (see Table 2-50), compared their Alaska ownership address counterparts.

Harvester issued QS/CQ ownership and use caps and vessel use caps, a part of Element 8, are included in each of the action alternatives (but with different thresholds for each), would also tend to reduce quota ownership and use consolidation across all communities both in Alaska and in the Pacific Northwest. Existing participants, where applicable, would benefit from QS/QC ownership and use cap grandfather provisions all set equal to initial allocation; in the case of vessel use caps, the grandfather provision is transferable if the vessel is replaced under Alternatives 2a and 3, but not under Alternative 2b. CV sector benefits of cooperative formation among Alaska communities with respect to vessel ownership would largely accrue to Kodiak, both in terms of vessels that may choose to continue to directly participate in the BSAI Pacific cod trawl CV fishery through the harvest of cooperative quota and those whose owners may choose to have others in the cooperative harvest their portion of the cooperative's quota holdings.

The eight unique Kodiak ownership address BSAI Pacific cod trawl CVs that fished during the Alternative 3 qualifying period would be allocated about 2.89 percent of the QS, before any reduction thereof, such as for any processor allocations. On average, the individual Kodiak ownership address CVs would get approximately 0.36 percent of the QS. Relative to the size and diversity of Kodiak's commercial fishing fleet as a whole (much less the overall fishing related portion of the community's larger economy), these benefits, though potentially substantial at the individual operation level (especially as qualifying histories vary), would be relatively minor at the community level. Whether individual Kodiak ownership address CVs would choose to harvest or lease out cooperative quota would depend on a variety of factors including, but not limited to, the size of the initial allocation received, other opportunities available to the vessel in the BSAI region versus those available the GOA region, and the efficiency of the vessel in harvesting BSAI Pacific cod relative to other vessels within the same co-op. With respect to potential changes to the social context of the fishery, family fishing businesses would need to understand and address the implications of the asset value associated with LLP licenses assigned QS, which can complicate fishery entry and exit and, on a personal level, lead to changes in family dynamics.

With respect to potential BSAI Pacific cod trawl harvester related impacts to CDQ entities and their constituent communities, Alternative 2a and Alternative 3 contain an option and suboption, respectively that would protect, at least in part, those CDQ entities with ownership interests in CVs that have as a practice leased their AFA sideboarded BSAI Pacific cod history during the respective qualification periods of these two alternatives. Specifically:

- Under Option 2.2.4 (included Alternative 2a) allocations would be based on a blend of catch history and AFA sideboard history. The gain or loss of AFA sideboard history is of substantial

importance to multiple CDQ entities (and their constituent communities) as they have ownership interests in BSAI trawl CVs that do not participate in the non-CDQ directed cod fishery but have instead pursued a strategy of leasing out their AFA BSAI Pacific cod sideboard allocations to generate a revenue stream for ownership that in the case of the CDQ entities has been used to fund an array of CDQ programs. Specifically, BBEDC (17 member communities) has a 50 percent ownership in four CVs that have employed that strategy; together CVRF (20 member communities) and NSEDC (15 member communities) have a majority ownership interest in six CVs that employed that strategy; and YDFDA (six member communities) has a 75 percent ownership interest in one CV that has employed that strategy. In addition to potential loss of lease revenues and/or the loss of future ability to directly access trawl cod fishing through the retention of BSAI Pacific cod sideboard history and the direct loss of asset value of the QS, indirect adverse impacts to the value of those vessels and their LLP licenses would also be of potential concern.

- Suboption 7.1.1 (included in Alternate 3) could also serve to protect the interests of CDQ entities (and their constituent communities) that have an ownership interest in CVs that pursued the strategy of leasing out their AFA BSAI Pacific cod sideboard allocations through use of a 90-day period during which BSAI Pacific cod harvest quota shares may be reassigned before they are no longer severable from LLP licenses. The efficacy of this suboption in protecting the interests of the parties involved, however, would depend on the nature of whatever historical and current contractual obligations exist between the involved parties, which is not a matter of public record.

The involved CDQ entities have noted that the BSAI trawl CVs have proven to be a positive investment for their member communities, with the Pacific cod sideboard leasing strategy having provided revenue back to the parent company that, in turn, continues to support and provide for in-region initiatives. Additionally, in the experience of at least some CDQ entities, vessel and LLP license ownership has provided direct employment opportunities, which have reportedly not been limited to the vessels themselves and have included office and other support employment opportunities.

The opportunity for gear conversion (Element 14), included in Alternative 2a, but not in Alternatives 2b and 3, is not anticipated to result in substantial changes in the pattern or intensity of community engagement in or dependence on the fishery. Given that under Alternative 2a processors would not only be a part of each cooperative, they would also have been allocated a percentage of harvest shares based on processing history and given that the cooperatives would determine who would be allowed to participate in the harvest of QS and under what conditions, irrespective of gear type, it is assumed that pot-caught landings made as a result of gear conversion would still be made in the same communities (and to the same processing plants) where cooperative trawl-caught landings would occur.

2.10.5.2.1. Processing Sector Related Effects

For communities with locally operating shore-based processors accepting deliveries of trawl-caught BSAI Pacific cod, consolidation of effort into fewer plants may occur, and perhaps especially those operated by a common owner, but under a cooperative system planning for more efficient integration of trawl-caught BSAI Pacific cod at any of the plants that have historically accepted deliveries would be more feasible. Under Alternative 2a and Alternative 3, processors would be allocated a percentage of harvest shares based on their processing history under Element 2 that would function to promote stability for qualifying processors. For Unalaska/Dutch Harbor and Akutan, the location of shore-based processing facilities that have most substantially and consistently engaged in the fishery over the different ranges of qualifying years, ownership and operation of the relevant plants have been relatively stable and those ownership changes that have taken place have presumably included qualifying processing history, so changes that may take place under a CV cooperative system at the plants in those communities would likely be minor (and beneficial) from the community perspective. The likelihood of this stability is reinforced by the fact that Unalaska/Dutch Harbor and Akutan are the home base for five out of the six AFA cooperatives,

which would have multiple cross-cutting ties with entities that would be participating in the PCTC Program under any of the action alternatives.

The community of Adak, on the other hand, with a more complicated history of local shore-based processing operational ownership (and intermittent operations) is more at risk of experiencing adverse community impacts from an allocation based strictly on processing history, absent AI processor provisions under Element 6, which could benefit Adak, Atka, or both in any given year.¹⁷⁰ These same Element 6 provisions, however, could disadvantage shore-based operations outside of Adak and Atka to the extent that those deliveries would have otherwise been made elsewhere.¹⁷¹ All things being equal, communities with shore-based processors that are closest to the Bering Sea trawl fishing grounds (Unalaska/Dutch Harbor and Akutan) are most likely to benefit from implementation of cooperative system due to the lower costs of harvest associated with delivering to those plants.¹⁷² Conversely, communities that are relatively more reliant on fleets that depend on Pacific cod that is reallocated from the trawl CV sector later in the year and plants that are located farther from the trawl CV fishing grounds are most likely to be negatively impacted.

With regard to the communities of Sand Point and King Cove, the plant in Sand Point, as noted previously, is owned and operated by the same company that owns and operates the plant in Akutan. Trawl-caught deliveries of BSAI Pacific cod made to the Sand Point plant during the various historical qualifying periods have been characterized by company management as occurring in relatively small amounts and typically only when their Akutan plant, which is larger and closer to the Bering Sea fishing grounds, was otherwise at maximum capacity during peak race-for-fish conditions, circumstances that are not expected to occur under any of the action alternatives. Further, unlike Akutan, Sand Point is not home to an AFA cooperative (and is the only community besides Adak that accepted trawl-caught deliveries of BSAI Pacific cod over the years 2004-2019 that is not affiliated with an AFA cooperative). Given the minor contribution of trawl-caught BSAI Pacific cod deliveries to the overall operations of the Sand Point plant, no adverse community level impacts are anticipated for Sand Point under any action alternatives, aside from a minor decline in city raw seafood tax and shared state fisheries business tax revenues, even if local deliveries were to be discontinued entirely (with the benefit to those deliveries accruing to Akutan instead¹⁷³).

The King Cove plant, which changed ownership in late 2020, is owned and operated by a company that also owns and operates a fishing support facility in Sand Point and other fishing support facilities and processing plants elsewhere in Alaska. Although there was considerable year-to-year variability, in general, the value of deliveries of trawl-caught BSAI Pacific cod were modest compared to other deliveries from other fisheries accepted at the King Cove plant over historical qualifying periods of the different action alternatives. One of the potentially important differences between the action alternatives from the King Cove perspective, however, would be the “drop two years” feature of Alternative 2b, which would allow the dropping of 2010 and 2014, the only two years over the 2004-2019 span when no trawl-caught BSAI Pacific cod deliveries were made to the King Cove plant.¹⁷⁴ The King Cove plant is

¹⁷⁰ Potential benefits accruing to Adak would potentially also accrue, in part, to the Aleut Corporation as owner of the processing facility and other relevant assets in Adak; similarly, potential benefits accruing to Atka would potentially also accrue, in part, to APICDA as partner in local shore-based processing operations in the community.

¹⁷¹ Potential adverse impacts could also accrue to the HAL C/P sector, which has substantial CDQ and regional Alaska Native Corporation ownership interest but is otherwise associated through ownership address information with the Seattle MSA, as described elsewhere.

¹⁷² Unalaska/Dutch Harbor may also benefit under Alternative 3 from an allocation of harvest shares to a processor that operated the Adak shore-based processing plant during the 2009-2019 historical qualifying period but is currently present and regularly processes BSAI Pacific cod in Unalaska/Dutch Harbor (and is no longer present in Adak).

¹⁷³ AEB fish tax revenues would be unchanged by the shift of landings from Sand Point to Akutan, as both communities are within the AEB.

¹⁷⁴ Alternative 3 would allow the dropping of one of those years; Alternative 2a would not allow the dropping of either.

also home base for one of the AFA cooperatives, which likely would provide additional impetus for the continuation of BSAI Pacific cod CV trawl landings in the community as well.

With respect to potential new entrants in the trawl-caught BSAI Pacific cod processing sector, there is no closed class of processors under any of the action alternatives. While potential new entrants would likely be at a competitive disadvantage under Alternative 2a and Alternative 3, as qualifying processors would be allocated a percentage of harvest shares, under Alternative 2b there would be no initial allocation of harvest shares to processors. Interest has been expressed in recent years in increasing local fishery diversification into the Pacific cod fishery in multiple CDQ communities, including Atka, St. Paul, False Pass, Nome, and Savoonga in both local harvesting and processing sectors, but no trawl-caught landings were made in any of these communities during the 2004-2019 period and since then have been made only in False Pass. These communities to varying degrees face a range of challenges to entry in the BSAI Pacific cod CV trawl shore-based processing sector unrelated to implementation of a BSAI trawl CV cooperative program including relative distance from the primary fishing grounds, high cost of operations and start-up expenses, harbor infrastructure constraints, and/or discharge permitting restrictions, among others, and are at different stages in potentially addressing these challenges.

2.10.5.2.2. Support Service Sector Related Effects

Fishery support service businesses could be adversely affected by CV and/or shore-based processor consolidation of effort under a cooperative system if vessels and/or processors active in the BSAI Pacific cod CV trawl fishery during the historical qualifying years decrease or discontinue their active participation in the fishery because of implementation of one of the action alternatives and do not increase their participation in alternative fisheries. While the overall amount of BSAI Pacific cod harvested would continue to be determined by the TAC-setting process and therefore would not be directly affected by the implementation of the alternatives, fewer vessels involved in harvesting and/or fewer plants involved in processing would equate to a lower demand for some types of support services. While some business demand would increase due to increased wear and tear on the vessels and gear for those fewer remaining active BSAI trawl CVs that would increase their harvest of BSAI Pacific cod per vessel under a cooperative system, the decrease in the number of CVs involved would impact a wider array of service providers. Many support service suppliers are in the Seattle MSA as well as in and around in the Newport/Lincoln County area of Oregon, including suppliers of a range services (and a scale of services) not available in Alaska. Support services in the BSAI region itself are largely concentrated in Unalaska/Dutch Harbor, which would mean that potential adverse impacts to the support services sector within Alaska brought about by rationalization would be largely felt in that community. Many of the same support service businesses in Unalaska/Dutch Harbor that support the BSAI Pacific cod trawl CV fleet also support the <60' HAL/pot fleet and could experience adverse impacts from a loss of revenue by that fleet if reallocations from the trawl sector were to substantially decrease in frequency or amount under a cooperative system, which would be most likely under Alternative 2b. Similar decreases in service provision demand due to consolidation of the trawl fleet or adverse impacts to the <60' HAL/pot fleet could impact municipalities through declines in sales tax revenues or usage fees for waterfront infrastructure-based services. Similarly, municipal harbor infrastructure fee-based public revenue may decline in relation to the fewer CVs participating in the BSAI Pacific cod trawl fishery but, like support service business private sector revenues in any given community, only to the extent that those vessels no longer active in the BSAI Pacific cod trawl CV fishery due to consolidation of harvesting effort within a cooperative system do not remain active (or become active) in other fisheries in the same area.

Given the history-based nature of the initial allocations under each of the action alternatives, no substantial shifts in patterns of fishery landings between communities are anticipated, nor are substantial shifts in the accompanying patterns of revenue accruing to municipalities in Alaska from local raw fish taxes or shared state fishery business taxes. Overall, the management of the fishery under any of the action alternatives would allow for greater predictability for fishery participants and would provide for

increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions. This flexibility has the potential for decreasing vulnerability to adverse conditions and increasing resilience following adverse events or accompanying adverse trends, including adverse effects of climate change, for involved individuals, entities, and communities.

2.10.6. Effects on Fishing and Processing Crew

Effects on fishing vessel crew would largely track with CV specialization noted in the effects on fishing communities discussion. Pacific cod is typically only a part of the annual fishing cycle as most vessels have substantial participation in other fisheries such as BS pollock, West Coast whiting, and/or GOA fisheries and a decrease in vessels in the BSAI Pacific cod fishery does not mean that those vessels would discontinue participation in those other fisheries. Depending on what other fisheries the vessels participate in during their annual fishing cycle, the crew may gain or lose compensation from those fisheries and offset, to some extent, any gains or losses in Pacific cod wages. Alternatively, a person could acquire an eligible license with limited history to enter the fishery, then enter a cooperative and acquire annual allocations within a cooperative to fish on a vessel. While this entry is possible, these annual leases are likely to be cost prohibitive.

Reductions in crew compensation may also be limited if the size of the fleet does not contract by a substantial amount. In the BSAI CR program, reductions in crew compensation has been identified as an area of concern by some stakeholders. The same level of concern has not been articulated in the Central GOA Rockfish Program. In the CR program, the fishery was highly over-capitalized, and the structure of the program allowed for considerable specialization in the CG rockfish fisheries by the fleet to generate production efficiencies. The circumstances and design of the proposed Pacific cod cooperative program are more similar to those of the Rockfish Program than the CR program, therefore it is anticipated that consolidation would not approach the level realized in the CR program.

2.10.6.1. Alternative 1: Status quo (No Action)

Under Alternative 1, fishing crew participation and compensation in the BSAI Pacific cod trawl CV fishery are anticipated to continue in their current manner. Comprehensive time-series information is not available for crew members in the fishery, but it is understood that most crewmembers currently work in several different fisheries on the vessel that they work on during the BSAI Pacific cod season, while some fish aboard other vessels for particular fisheries. Crewmembers are typically compensated on a share basis, receiving a specific percent of the vessel's revenues (with crew of greater experience, or in more skilled positions receiving a greater share). Vessel operators may deduct certain expenses prior to calculating the crew's share. This practice is common, but not consistently implemented or applied across all vessels, as not all vessel operators deduct the same expenses. The number of crew positions in the BSAI Pacific cod A season vary by year and is dependent on several factors that influence the number of vessels active in the fishery each year. Factors include the size and anticipated value of the BSAI Pacific cod fishery, other fishing opportunities at that time of the year, and expectations about future regulatory changes in the fishery. There are typically four or five crew members on each CV, so an approximate number of crew positions during a given year could be estimated by multiplying the number of vessels operating in the fishery by the average number of crew members on the vessels. The actual number of persons that work on a vessel during the year/season is often greater than the number of positions due to changes in crew for different fisheries or attrition during the year. Under Alternative 1, existing fishery performance trends would be expected to continue, with short seasons on crowded fishing grounds under race-for-fish conditions continuing to yield variable results for crew.

Impacts on processing crew will depend on delivery patterns and the length of the season. In a compressed fishery, as expected under the No Action alternative, the processing crew will work to keep pace with deliveries that allow the plant to process as much Pacific cod as possible before the season closes. For shore-based processing crew, the No Action alternative would result in similar processing practices as seen in the past. Most of the processing took place in the communities described in Section

2.8.9 and was undertaken primarily by workers recruited from outside the local labor pool. Crews were employed processing Pacific cod for a relatively short period of time in recent years. When Pacific cod was being processed, relatively large crews were necessary to maintain a flow of fish through the plants, because the Pacific cod fisheries coincided or were closely timed with the BS pollock A season fishery. Maintaining the opportunity for plant workers to work overtime hours is important to the firms involved and the processing crew workers under any option considered. It allows the firms to reduce spikes in the total number of employees needed on site and allows workers to have the level of income of opportunity that accompanies access to overtime hours, which is important for worker recruitment and retention.

2.10.6.2. Alternatives 2a, 2b, and 3 (the PA)

Specialization of fishing effort under a cooperative system is expected to result in a decrease in captain and crew jobs in the Pacific cod fishery, while those jobs that do remain are expected to result in more stable employment at higher overall levels compensation per crew member per season than under Alternative 1 conditions. The remaining crew jobs in the Pacific cod fishery could also feature better working conditions, be safer with discontinuation of race-for-fish conditions and be more predictable in terms of season-to-season employment potential and level of compensation. Crew members, however, would likely work longer seasons and crew compensation per unit effort could be negatively impacted if crew shares were adjusted to cover, at least in part, costs of harvesting quota controlled by LLP license holders or processors who control the QS and resulting CQ. It is expected that any LLP license holders with BSAI Pacific cod QS who choose to join a cooperative and have their shares fished by another of the cooperative's boats would have no incentive to share the resulting revenues with those who would have otherwise crewed on vessel under Alternative 1 conditions. Crew earnings in other fisheries pursued by vessels not participating in the cooperative harvests may also be adversely impacted by proposed sideboards that would limit the qualified vessels/LLP licenses expansion into other fisheries.

The non-severability of quota from the LLP licenses is, however, expected to minimize crew job losses, especially aboard BSAI Pacific cod trawl CVs with Alaska ownership addresses, as those vessels are primarily focused on GOA fisheries. The crew members on those Alaska ownership address vessels that choose to have others in the cooperative harvest their portion of the cooperative's overall quota may not participate directly in the BSAI Pacific cod fishery, but they may well still participate in other fisheries in the GOA pursued by the vessels on which they work. These vessels may, in turn, diversify their GOA fishing portfolio based on the flexibility offered by being freed from directly participating in the BSAI Pacific cod fishery (but still benefiting from their historical participation in that fishery). These crew positions may also be perceived by a substantial portion of the crew as more desirable due to fishing closer to home. Ownership and use caps would also potentially play a role in limiting the total amount of consolidation that can occur in the harvesting sector (as well as the processing sector). To the extent that consolidation of the fleet does occur, some crew members may lose wages associated with the BSAI Pacific cod trawl fishery, while other crew members are expected to have their total wages from the fishery increase.

The selection of Option 6.2 (included in Alternative 2b) that would require a minimum of 25 percent of the allocation to the AI shoreplants to be harvested by trawl <60' CVs that are assigned an LLP license with a transferable AI endorsement would benefit the crew on those vessels. The amount of Pacific cod those vessels would harvest and the crew compensation associated with that harvest is expected to be substantially greater than another alternatives considered. They would benefit from the exclusive harvest privilege that could result in more harvest by these vessels than would occur under other alternatives and the market power the exclusive deliver requirement could have on the ex-vessel price the vessel operate could negotiate.

The excessive share provisions limit the level of specialization of vessels actively fishing that could occur as a provision to protect, among other things, captain/crew employment. Without use caps, LLP owners could potentially work together within a cooperative and fish several persons' shares on a single vessel.

This consolidation could have a ripple effect on skippers and crew resulting in loss of employment opportunities since fewer vessels would be operating. Crew shares could also diminish on the vessels used to harvest the CQ if shares are concentrated onto fewer vessels and those vessel owners must also pay out lease rates in addition to crew shares. Reductions in the number of CVs that are active in the fishery could also impact communities that provide services for these vessels, placing downward pressures on sales tax, support service employment, and usage fees for local waterfront facilities, as noted in the fishing communities discussion above.

Without a use cap, the amount of Pacific cod CQ harvested on a single trawl CV in this BSAI would be highly influenced by economies of scale. In other words, vessels that gear up for the BSAI Pacific cod fishery, would be used in that fishery for a longer period of time to reduce costs associated with changing fisheries.

Impacts to shore-based and floating processing crew would likely to be similar under Alternatives 2a, 2b, and 3. However, treatment and participation of the AI shore-based processors under those alternatives would impact both the number of jobs and compensation that would accrue to specific communities. In the current BSAI Pacific cod trawl CV fishery, most processing takes in shore-based processing plants in Unalaska/Dutch Harbor, Akutan, and Adak (when operational) and aboard floating processors. More limited processing takes place in shore-based processors in King Cove and Sand Point. Processing crews working in the listed communities and on floating processors are largely recruited from outside of Alaska.

Under status quo conditions, shore-based and floating processor crews are engaged in processing BSAI Pacific cod harvested by trawl CVs for a relatively short period of time at the end of January and the beginning of February. When Pacific cod is processed, relatively large crews are necessary to maintain a flow of fish through Pacific cod plants/lines that keeps pace with large volumes of trawl CV offloads. Because the BS Pacific cod fishery currently coincides with the BS pollock fishery, some plants must employ substantially larger crews that are juggled between lines/plants to process landings from both fisheries. Although most plant workers are also engaged in processing activities related to other fisheries, the short and intense Pacific cod A season means that their employment is potentially more sporadic or occurs in combination with pollock processing. In general, processing landings from non-rationalized fisheries hinder the ability of plants to develop employment schedules that require fewer processing crew being brought into Alaska communities for relatively short periods of time.

Harvests from the Pacific cod fishery are likely to occur over a longer period under Alternatives 2a, 2b, and 3. This would facilitate opportunities to improve quality and the production of higher valued, more highly processed product forms. Within limits determined by multiple factors, landings are likely to be scheduled to serve particular markets and to optimize production efficiency and the scheduling of processing crews. Although the Pacific cod fishery is a relatively small portion of the processing portfolio of most of the qualified processors, the cooperative program alternatives are likely to contribute to stability in processing employment. This increased stability could lead to fewer processing jobs at peak times, but the remaining jobs should provide more stable and consistent employment. If similar hiring conditions remain in place after a cooperative program is implemented, it is anticipated that overtime hours, highly valued by processing crew members who typically seek to maximize their earning potential during the time they are present in Alaska processing communities, would continue to be available to processing workers.

COVID-19 pandemic impacts on shore-based and floating processors occurred primarily after the short 2020 BSAI Pacific cod A season had ended. As a result, the most significant potential impacts on the BSAI Pacific cod fishery were avoided in 2020, but the processing sector has subsequently struggled to deal with these issues in other fisheries. Impacts on the 2021 BSAI Pacific cod fishery could be greater, depending on the ultimate efficacy of vaccinations or other virus mitigation measures. Impacts of the COVID-19 pandemic and restrictions placed on H-2B visas have in many cases limited the ability of processors to hire a full workforce. These issues remain unresolved, but their impact could be lessened

under Alternatives 2a, 2b, and 3 by allowing processor operators to reduce peak employment demand. This, in turn, would lessen the need bring workers new to Alaska and the individual processing communities to meet that demand.

2.10.7. Effects on Monitoring and Enforcement

This section describes the monitoring requirements under the status quo and evaluates the impacts of the proposed monitoring elements on the affected industry and agency stakeholders. These impacts are summarized in Table 2-185.

Table 2-185 Summary of the types of impacts of monitoring and enforcement requirements to implement the proposed PCTC Program

	Alternative 1 – Status Quo / No Action (see section 2.9.10.1)	Alternatives 2a, 2b, and 3 (PA) – Cooperative Based LAPP* (see section 2.9.10.2)
Impacts to partial coverage category of the Observer Program		
Observer Fees	Observer fee (1.65% of ex-vessel value) collected on landings of groundfish and halibut by vessels in partial coverage	PCTC Program landings would not be subject to the observer fee reducing overall observer fee revenues.
Partial coverage fishing effort	ADP specifies observer deployment rates for vessels in partial coverage category	Trawl fishing effort under the PCTC Program would not be included in the Observer ADP, reducing effort in the partial coverage category.
Impacts on Vessel Owners and Fishery Participants		
Trawl CV costs for Observer Coverage	Partial Coverage: 1.65% observer fee Optional Full Coverage: Direct monitoring costs per day	All CV's (except those delivering unsorted codends to motherships and if the Council selects option 2.5) are in full coverage with direct monitoring costs.
ATLAS and Data transmission	A computer with ATLAS and transmission equipment for some vessels in full coverage	A computer with ALTAS required for all CVs and data transmission at-sea or trip-by-trip depending on vessel size.
Recordkeeping and Reporting	Logbooks required for vessels ≥ 60 ft. LOA and	Logbooks required for all PCTC Program CVs
Voluntary Full Coverage	BSAI trawl CVs may annually request to be in the full observer coverage category.	If the Council selects option 2.5, to allocate the A and B seasons only, trawl CVs in the C season would still be allowed to opt into the full coverage observer category.
Gear Conversion	CVs fishing pot gear are in Partial Coverage	Vessels harvesting Pacific cod using pot gear would be required to comply with the same monitoring requirements established for vessels using trawl gear.
Impacts on Shoreside Processors		
Processors	Landings are reported by processors via eLandings Reporting requirements specified at 50 CFR §679.5	All landings are reported by processors via eLandings. Catch of allocated species would be required to be sorted by species and weighed on a State of Alaska certified scale that has

	Alternative 1 – Status Quo / No Action (see section 2.9.10.1)	Alternatives 2a, 2b, and 3 (PA) – Cooperative Based LAPP* (see section 2.9.10.2)
		capabilities to print an unalterable record of the weights.
Impacts on Observer Providers		
Impacts on observer providers	Coverage days are split between one NMFS-contracted observer provider for vessels in PC and four permitted observer providers for full coverage	All observer coverage days under the PCTC Program would be contracted with a permitted observer provider.
Agency Costs		
RAM	Staff time to issue FFP's	Additional staff time to process and issue annual CQ applications and transfers.
Observer Program	Observer Training and Debriefing	Additional costs for training, equipping, and debriefing if this program increases the number of observer deployments.
ISD and Application development	Annual updates to the CAS and maintenance of existing applications	Development of applications for PCTC Program QS issuance and transfers, monitoring use caps, and any additional programming changes needed.
Annual Cost Recovery Billing Process	None	Staff time to annually develop and publish standard prices and administer cost recovery billing.
Enforcement	Existing monitoring and enforcement tools are not consistent across all vessels harvesting Pacific cod and varying by vessel length. See a full description of monitoring tools in Section 2.8.11	Monitoring and enforcement tools will be consistent across all vessels as described in this section. The addition of new regulatory requirements could result in additional reports of non-compliance from observers and as has been seen in other LAPP programs with the introduction of transferrable PSC limits, there may be an increased incentive for a vessel to tamper with or bias observer data

*As the Council develops the alternatives NMFS will continue to evaluate monitoring and enforcement tools necessary to implement the proposed PCTC Program. The impacts will be further analyzed, and additional monitoring requirements may be added to address components of this program as they are identified.

2.10.7.1. Alternative 1: Status quo/no action

NMFS manages numerous annual catch limits, seasonal limits, sector allocations, and quotas for many different BSAI groundfish fisheries using a combination of industry reported catch information, observer data, and vessel monitoring system (VMS) data. These data sources are incorporated into the NMFS CAS to monitor and manage fishery limits.

The purpose of CAS is to assess the amount and type of catch and bycatch in groundfish and halibut fisheries off Alaska. The CAS relies on observer data, information derived from Electronic Monitoring (on some fixed gear vessels), and self-reported landings information to generate estimates of total groundfish catch, including at-sea discards, as well as estimates of prohibited species catch and other non-groundfish bycatch. Observer data, EM information, landing reports (“fish tickets”), and at-sea production

reports are combined to provide an integrated source for fisheries monitoring and inseason decision making. In the partial coverage observer category, observer data from randomly selected trips provides information on groundfish catch and bycatch. NMFS estimates bycatch for unobserved vessels using bycatch rates from observed vessels that are applied to total groundfish catch on unobserved trips.

Observer Coverage

Under existing LAPPs, CVs with transferable PSC allocations such as AFA BSAI pollock and the Central GOA Rockfish Program are in the full coverage observer category. These programs are defined through regulation in 50 CFR §679.51(2)(i)(C). Vessels in the full coverage observer program procure observer services by contracting directly with a permitted observer provider and pay the full cost of observer coverage (referred to as the “pay-as-you-go” service delivery model).

Currently, participants in the Pacific cod trawl CV fishery are in the partial observer coverage category with the exception of vessels which request to opt into the full coverage category. Under current monitoring requirements (see 50 CFR §679.51(a)(1)), Pacific cod trawl CVs designated on a Federal Fisheries Permit (FFP) when directed fishing for groundfish in federally managed or parallel fisheries in the BSAI are in the partial observer coverage category. Each year, the Annual Deployment Plan (ADP) describes the science-driven method for deployment of observers on vessels in the partial coverage category. Since 2013, observer coverage rates in the partial coverage category have ranged from approximately 14.8 to 28 percent for trawl CVs and 4 to 16 percent for pot CVs (NMFS, 2019). The deployment of observers in the partial coverage category is funded through a system of fees based on the gross ex-vessel value of retained groundfish and halibut in fisheries that are not in the full coverage category.

At the time of the Observer Program restructuring, the Council and NMFS determined that partial observer coverage was appropriate for BSAI trawl CVs that are operating outside of the AFA directed pollock fishery (NMFS, 2016). After the implementation of the restructured Observer Program in 2013, NMFS allowed the owners of BSAI trawl CVs in the partial observer coverage category to volunteer on an annual basis for full observer coverage during all times that they participate in BSAI trawl fisheries. Individuals who made this choice were typically owners of AFA CVs that participate in the BSAI limited access Pacific cod trawl fishery to better manage Pacific halibut PSC limits within their cooperatives. In 2016, NMFS published a regulatory amendment to implement this annual request in regulation (81 FR 67113, 30 September 2016).

Observer coverage is not required on CVs that are delivering unsorted catch to motherships under regulations at 50 CFR 679.50(a)(2). The catch from these CVs is not removed from the trawl’s codend (the detachable end of the trawl net where catch accumulates) prior to it being transferred to the mothership. Motherships are required to carry two NMFS-certified observers during each fishing day and all observer sampling occurs on the mothership.

ATLAS software and observer data transmission

Observers enter the data they have collected onboard vessels and at processors using the NMFS-supplied data entry software, ATLAS. The ATLAS software is also used by observers to electronically transmit their data to NMFS. Data transmission is an observer duty as defined in the observer sampling manual. Permitted observer providers are required by regulation to ensure that all observer duties are completed in a timely manner (50 CFR part 679.52(b)(2)). A vessel or processor in the full coverage category is not responsible to ensure an observer completed this duty, however, they may be responsible to provide the functional and operational equipment that allows the observer to perform these duties (see 679.51(e)(1)(iii)(B)(4)).

Observers deployed on vessels in the partial coverage category are equipped by their observer provider company with a laptop that has ATLAS installed. Observers transmit data to NMFS from these computers

at the completion of a trip by utilizing electronic communications available while at port (e.g., a cell phone issued by their observer provider, wifi at the processing plant or hotel, etc). Vessels in the partial coverage category generally do not provide a computer for observers to enter or transmit observer data electronically. However, some vessels may already have a computer on board for observer data entry because of their participation in other fisheries (see Table 5 for a succinct summary of current regulatory requirements for eligible PCTC vessels).

Regulations at 50 CFR 679.51(e)(1)(iii)(B) and 50 CFR 679.51(e)(2)(iii) ensure that all observers deployed on vessels in the full coverage category have access to a computer provided by the vessel owner. Not all CVs are required to provide data transmission capabilities. Under current regulations, CVs in the full coverage category that are greater than or equal to 125 ft LOA are required to provide both a computer with ATLAS and effective at-sea data transmission capabilities. The operator of a CV participating in the Rockfish Program or CV less than 125 ft LOA directed fishing for pollock in the BS must provide a computer with ATLAS but are not required to provide at-sea transmission capability. However, many owners of CV's less than 125 LOA either provide at-sea transmission because of their participation in other fisheries or choose to provide at-sea transmission to limit time spent at the processor or to enable their own communication while at sea.

For vessels that participate in the Rockfish Program and the BS pollock fishery, deliveries are limited to a closed class of processors in a limited number of ports. Processors receiving BS pollock in the full coverage category are required to provide a computer, ATLAS, and data transmission capabilities to the observer deployed at the processor and any observer deployed on a CV. All deliveries by a CV participating in the Rockfish Program are limited to the port of Kodiak, Alaska. Since the start of the trawl EM EFP, many of the processors in Kodiak are likely to have an observer deployed for a period of time each year. When a processor is required to maintain observer coverage they are also required to provide the observer with a computer. Observers can either use this computer provided by the processors or they can transmit data to NMFS from the observer program offices in Kodiak and Dutch Harbor.

Observers deployed on CVs less than 125 LOA are often successful in transmitting data to NMFS at the completion of each trip without requiring vessel owners to provide a communication device. However, if an observer is deployed on a vessel delivering to a processor in Kodiak and that delivery occurs in the middle of the night when the Observer Program office is not open, and the processor does not have a functioning computer available for the observer to use, then data collected from the previous trip may not be transmitted to NMFS until a subsequent delivery. When this occurs, observer data are delayed for the catch accounting system. As described in Section 2.8.11, observer data entry into ATLAS and electronic submission of observer data to NMFS benefits the fishing industry, observers, and NMFS. Electronically submitted data during a trip are available to the fishing industry and fishery managers more quickly than data submitted from port. Built-in quality assurance measures prevent inaccurate data from entering NMFS databases, which reduces the time spent correcting errors during the debriefing process. Electronic transmission also increases communication between observers and NMFS.

Recordkeeping and Reporting

Under current recordkeeping and reporting requirements, active trawl CVs that have an FFP and are ≥ 60 ft. LOA must maintain a trawl gear DFL. Required information for each haul (including haul location, catch-by-haul, and discards) must be recorded within the specified reporting time limit. Instead of a DFL, a CV trawl operator may voluntarily use a combination of eLandings and NMFS-approved ELB.

Shoreside processors

Under current CMCP requirements, owners or managers of shoreside or stationary floating processors receiving fish in the AFA and CDQ pollock, AI directed pollock, and the rockfish program (with the

exception of the rockfish entry level longline fishery) are required to prepare, submit, and have an approved CMCP prior to the receipt of fish harvested in these fisheries (see 50 CFR 679.28(g)(2)). All groundfish delivered to a shoreside or stationary processor with a CMCP must be sorted and weighed by species. These requirements are described at 50 CFR 679.28(g)(7). Currently, NMFS does not require a CMCP for processors that receive deliveries of Pacific cod.

2.10.7.2. Preliminary Preferred Alternatives

The Council selected a preliminary preferred alternative (Alt 3) in June of 2021. This section provides an overview of the effects of the action.

Impacts on Partial Observer Coverage Category

The Council motion specifies a goal that all vessels under the PCTC program would be in the full coverage category. As described in Section 2.8.11, NMFS concurs with this recommendation, as it would be necessary to monitor at-sea discards and obtain data to manage transferable PSC limits. Therefore, under the PCTC program, procurement of observer services for participating vessels in this program would shift from the partial coverage category service delivery model (Federal Contract and fee system) to the full coverage service delivery model (sometimes referred to as “pay-as-you-go”). Vessels that move out of the partial coverage category would no longer be subject to the observer fee that used to purchase observer days in the following year.

To evaluate the impact of the PCTC program on observer fee revenues, the portion of the fee revenues that would have been part of this program during 2013-2019 were evaluated based on trawl vessels that target Pacific cod in the BSAI (Table 2-186). The BSAI trawl vessels that opted into full coverage during that time and paid both the observer fee and their full coverage costs were excluded from this analysis. Over this period the amount of observer fee revenue from partial coverage vessels that would have been in the PCTC program ranges from 4.65 to 1.52 percent and an average of 3 percent.

Table 2-186 The amount and percent of observer fee revenue that would have been part of the PCTC Program (defined as all trawl trips targeting Pacific cod in the BSAI) and all other observer fee revenues in 2013-2019. Observer fees from BSAI trawl vessels that opted into full coverage have been excluded from this table.

Year	Fee revenue that would have moved to PCTC		All other partial coverage		Total Observer Fee Revenue
	Fee Revenue	% of total fees	Fee Revenue	% of total fees	
2013	\$60,071.56	1.52	\$3,891,993.30	98.48	\$3,952,064.86
2014	\$80,512.12	2.54	\$3,088,269.68	97.46	\$3,168,781.80
2015	\$112,229.46	3.12	\$3,487,865.39	96.88	\$3,600,094.85
2016	\$167,208.39	4.65	\$3,429,165.71	95.35	\$3,596,374.10
2017	\$116,949.11	3.06	\$3,704,314.31	96.94	\$3,821,263.42
2018	\$93,064.60	2.73	\$3,314,597.69	97.27	\$3,407,662.29
2019	\$97,503.04	3.37	\$2,797,936.18	96.63	\$2,895,439.22

Moving vessels into full coverage would also impact the partial coverage program by reducing the number of partial coverage trips that were selected for observer coverage. Since the observer program was restructured in 2013, the number of partial coverage monitored days that would have moved from partial coverage into the PCTC Program, had it existed, ranges from a low of 54 days in 2013 to a high of 276 days in 2016 (Table 3). These numbers correspond to a range of 1.33 to 6.29 percent and an average of 3.8 percent of partial coverage monitored days that would have moved into the PCTC Program. The

general term "monitored" is used in the context of the partial coverage program because it includes observers or EM. The number and percentage of monitored days in Table 2-187 does not include monitored vessels that were under voluntary full coverage for those years.

Overall, the impact on the partial coverage program would result in a reduction in observer fee revenue while also reducing the number of trips in partial coverage that need to be factored into the Annual Deployment Plan (ADP) budget. In each year, except 2014, the percentage of total fees “lost” to the observer program budget is less than the percentage of monitored days that would have moved into the PCTC program. Over the 2013-2019 period, the average percent lost in fees is 3 percent compared to 3.8 percent fewer monitored days in the partial coverage category.

The reduction in the size of the partial coverage category is also likely to impact the cost per observer sea day in the partial coverage category. The average cost per observer sea day under the Federal contract is a combination of a daily rate, which is paid for the number of days the observer is on a vessel or at a shoreside processing plant, and reimbursable travel costs. The contractor also needs to recoup their total costs and profit through the daily sea day rate, which includes costs for days the observers are not on a boat. These days include training, travel, deployment in the field but not on a boat, and debriefing. The average annual cost per sea day in partial coverage has ranged between \$895 and \$1,380 since 2014 (AFSC and AKRO, 2019). Much of this variation is associated with the number of sea days used, as the cost of “optional” sea days are less expensive than “guaranteed” sea days under the federal contract. Additionally, there is variation from year-to-year in travel costs. The PCTC program would reduce the number of observer sea days in the partial coverage category and this could result in purchasing fewer (less expensive) optional days, thus increasing the average cost per sea day, overall. In addition, the BSAI trawl Pacific cod fishery likely has relatively lower travel costs because they tend to be centered out of relatively fewer ports, compared to fixed gear trips. *There will be fewer trips remaining in the partial coverage category and they will tend to be more expensive.*

Table 2-187 The number and percentage of partial coverage monitored days that would have moved into the PCTC Program from 2013 to 2019. The BSAI trawl vessels that opted into full coverage have been excluded.

Year	Number of partial coverage monitored days that would have moved into the PCTC Program	% of partial coverage monitored days that would have moved into the PCTC Program
2013	63	1.92
2014	54	1.33
2015	215	4.62
2016	276	6.29
2017	141	5.37
2018	121	3.00
2019	195	4.11

Monitoring Impacts on Vessel Owners and Fishery Participants

Cost of Observer Coverage

The shift of vessels from the partial coverage model to the full coverage model under the PCTC program would have an impact on the cost that vessels are paying for observer coverage. Instead of paying observer fees based on the value of catch, vessels would procure observer services by contracting directly with a permitted observer provider and would directly pay the full cost of their observer coverage. The services carried out by observer providers include paying observers, deploying observers to vessels and shoreside processors, recruiting, training and debriefing. There are currently four active certified providers in Alaska.

Since 2011, certified observer providers have been required to submit to NMFS copies of all of their invoices for observer coverage. Each year, in the Observer Program Annual report NMFS uses the invoice data to calculate the average cost of observer coverage in the full coverage category. For example, in 2018, the total cost billed to 167 vessels and processing facilities for observer coverage in the full coverage category was \$14,030,339. The total number of observer days represented by these invoices was 36,692. Based on this information, the average cost per day of observer coverage in the full coverage category in 2018 was \$382, which combines invoiced amounts for the daily rate per observer day (variable cost) plus all other costs for transportation and other expenses (fixed costs). From 2013 to 2019, the estimates of the average cost per day of full coverage ranges between \$367 and \$385 (Table 2-188).

Moving a vessel from partial to full coverage makes the cost of observer coverage a function of time spent out of port, rather than a function of the value of the vessel's catch. Table 4 provides an estimate of the total expected size of the PCTC Program, in terms of vessels and monitored days, had it existed between 2013 and 2019. The number of vessels and monitored days includes vessels that have voluntarily opted into full coverage as well as vessels in the partial coverage category that would be required to be in full coverage, if the PCTC program had existed in those years. The data in Table 4 are based on the fishing activity of trawl vessels targeting Pacific cod in the BSAI, both the number and percentage of monitored days assume a coverage rate of 100 percent.

The total number of monitored days that would have been within the PCTC Program had it existed ranges from a low of 967 days in 2019 to a high of 1,792 days in 2013. An average number of 49 vessels per year would have fished within the PCTC program. Using the average daily cost for full coverage, the estimated fleet-wide cost for full coverage for the PCTC program, had it existed from 2013-2019, ranges between \$372,295 and \$657,664. An important caveat to these cost estimates is that they are based on the average daily costs across all of the full coverage observer category, which includes catcher/processors and motherships where observers may be deployed and stay on that vessel for a month or more. The cost of an observer day declines as the number of invoiced days for a given vessel in a given month increases (see Figure 2-2 in AFSC and AKRO, 2019). The average trip duration for BSAI trawl vessels targeting Pacific cod is 4 days and observer deployment on these shorter duration trips could result in higher cost per full coverage observer day of up to \$600 or \$800 per day. Another factor that will impact the actual observer costs in future years will be the number of vessels fishing and the number of days fished. This could be lower than past years due to potential efficiencies that may be gained through consolidation of fishing effort onto fewer cooperative vessels, or it could increase due to longer fishing seasons or a slower paced fishery.

Table 2-188 The number of vessels and monitored days that would have been in the PCTC Program had it been in place from 2013 to 2019, including vessels that opted into full-coverage voluntarily as well as vessels that would move into partial coverage into full coverage under the PCTC program. The associated cost for full coverage assumes 100% coverage.

Year	Number Vessels			Estimated Number Monitored Days			Estimated Full Coverage Observer Costs	
	Voluntary full coverage vessels ¹⁷⁵ that would remain as full coverage under PCTC	New full coverage vessels that would move from partial coverage into PCTC	Total number of PCTC vessels	Voluntary full coverage days that would remain as full coverage under PCTC	New full coverage days under PCTC	Total PCTC full coverage days	Estimated cost per day*	Estimated fleet-wide cost
2013	35	15	50	1,330	462	1,792	\$367	\$657,664
2014	30	14	44	1,182	463	1,645	\$371	\$610,295
2015	23	22	45	697	871	1,568	\$375	\$588,000
2016	23	24	47	558	1,098	1,656	\$383	\$634,248
2017	24	25	49	547	706	1,253	\$385	\$482,405
2018	28	28	56	636	691	1,327	\$382	\$506,914
2019	18	33	51	361	606	967	\$385	\$372,295

SOURCE: NMFS Catch Accounting System. *Cost per day of full coverage from Observer Program Annual Reports, available online at: https://www.fisheries.noaa.gov/tags/north-pacific-observer-program?title=annual%20report&field_species_vocab_target_id=&sort_by=created ATLAS software and observer data transmission

Computer and ATLAS

All vessels participating in the PCTC program would be required to provide a computer that meets minimum specifications for use by an observer. NMFS installs custom software called ATLAS on the vessel's computer and this software application is used by observers to enter their data. The ATLAS software contains business rules that perform many of these quality control and data validation checks automatically, which dramatically increases the quality of the preliminary data. Since 2014 all observer data has been entered into the ATLAS software.

Data Transmission

After the observer data are entered into the ATLAS software, it is transmitted to NMFS. Data transmission is an observer duty as defined in the observer sampling manual and is not a requirement in regulation. A vessel or processor is not responsible to ensure an observer completes this duty, however, they can be required to provide the equipment that would allow the observer to perform these duties. Both

¹⁷⁵ The number of voluntary full coverage vessels is based on the number of vessels that opted into full coverage and actually fished. In some years, additional vessels opted into full coverage but then did not participate in the BASI Pacific cod trawl fishery. The full list of vessels that opted into full coverage is available at: <https://www.fisheries.noaa.gov/resource/document/bsai-trawl-catcher-vessels-cvs-full-coverage>

NMFS and fishery participants need timely and accurate data in quota share programs. Under the PCTC program, there are several approaches that could be used to provide observers with access to communications equipment to transmit their data, (1) at-sea data transmission from the vessel daily during the trip; (2) data transmission that is facilitated by the vessel at the end of the trip; and (3) data transmission that is facilitated by the processor at the end of the trip. This section provides information on the tradeoffs of the different approaches for transmitting observer data and information on the cost of at-sea transmission.

At-sea data transmission

Under the PCTC program, the requirements for observer coverage and other monitoring and enforcement elements, such as electronic reporting, are designed to maximize the quality of data used to estimate catch and bycatch. Estimates of discarded Pacific cod, halibut PSC, and other bycatch species are derived solely from observer data and will accumulate against cooperative allocations and limits. For this reason, it is important that observer data be timely and is as complete and accurate as possible. A vessel that has the appropriate equipment and data service plan is able to facilitate observer data transmission on a daily basis. At-sea data transmission improves the quality of the data by, (1) increasing the timeliness of the data needed for management; (2) improving data quality and reducing the likelihood of data being changed or deleted; (3) enabling inexperienced observers to come up to speed more quickly; and (4) enabling observers to notify NMFS staff of potential compliance concerns, such as harassment or efforts to bias data.

Data transmission that occurs during the trip while the vessel is still at sea allows NMFS to generate catch and bycatch estimates in near-real time. Timely transmission also enables observer data to be available to vessel owners and cooperative managers within two hours after an observer transmits data to NMFS. Under the PCTC program, real-time accounting of halibut PSC will be important, especially for the cooperatives that are managing their PSC and tracking vessel-level PSC accounting. Timely information on bycatch would allow the fleet to rapidly respond (both individually and collectively) to high PSC rates so that the catch of prohibited species can be minimized, and the industry can more effectively stay within its overall PSC limits. If PSC limits are constraining and the fleet needs to respond, then daily data will enable vessels to modify fishing activity immediately.

At-sea transmission of observer data improves data quality. An important data quality issue for the PCTC program is the likelihood that data used for inseason management, either by NMFS or the cooperatives, will change from the time decisions are made, to when the data are finalized after the debriefing process. During the debriefing process, Observer Program staff evaluate an observer's sampling performance and data collected for completeness and to ensure data are entered accurately. Data quality may be impacted in a variety of ways including the amount of data collected (i.e., the size of samples, or the number of samples) and the ability of an observer to correctly apply data collection protocols to a variety of fishing conditions. If the Observer Program determines that sampling procedures were not followed, or if the data are determined to be biased, observer data may be deleted. The Observer Program tracks when data are deleted and documents reasons why. This information is used to inform observer training topics for the upcoming year. It is rare for observer data to be deleted, and even rarer for an entire data set to be deleted. Observer data deleted during the debriefing process do not always interfere with NMFS's ability to estimate total catch and bycatch since the amount of data deleted is usually small and from a small number of observer deployments. Nonetheless, one of the key considerations for NMFS when training observers for deployment is to maximize data quality and minimize data deletions.

One way in minimizing the potential for data to be modified during the debriefing and data quality checking process is to require additional training and experience. Experience affects the amount of data collected (the size of samples, or the number of samples) and the ability for that observer to quickly adapt to atypical situations. NMFS does not anticipate observers will be required to have a level 2 or lead level 2 deployment endorsement under this program. Therefore, it is likely that newly trained observers could

be deployed on PCTC vessels. In previous analysis¹⁷⁶ NMFS demonstrated that experienced observers who completed at least two contracts are less likely to have data deleted during the debriefing process. If observers have transmission capabilities and are able to communicate with an inseason advisor while at-sea, they can ask questions and clarify data sampling protocols. This communication and rapid feedback loop would reduce the time required for inexperienced observers to get “up to speed” with respect to sampling, decreases the number of corrections that must be made during the debriefing process, and reduces the probability of data collection problems that could cause data to be deleted.

Another benefit of observers being able to contact the Observer Program while they are at sea is related to compliance and harassment issues. Catch share programs that create dependence on observer data for vessel-level management of PSC can contribute to tensions between onboard observers and vessel operators. Quota holders have an incentive to maximize the harvest associated with their limited quota, and thus an incentive to manipulate data collection. Quota holders can do this through activities such as pre-sorting, manipulating the sequence of sets so as to lead the observer to sample unrepresentative sets, and by questioning data collected by the observer. As a result, observers may be placed under considerable pressure by vessel crew to change sample numbers, sample more, sample less, or sample differently.

Under the PCTC program, enforcement anticipates that the rate of statements involving data collection by observers (e.g., intimidation/coercion/hostile work environment, interferences and sampling bias, etc) may increase. At-sea communication and the ability for observers to notify NMFS staff of potential compliance concerns and to report efforts to create misleading data greatly enhances their ability to stand up to challenges to observer-collected information. In these situations, NOAA OLE has been able to identify compliance trends and violations early to better engage industry with outreach and minimize the need for enforcement actions. This allows vessels to come into compliance sooner and avoid more serious violations of the regulations and improves observer safety at sea.

Data transmission at the end of a trip

If a vessel does not have capability to transmit data while at sea, the observer would enter their data into ATLAS on a computer provided by the vessel and then transmit that information upon return to port. Options to accomplish this could include, (1) require the processor receiving PCTC catch to facilitate data transmission for the observer assigned aboard the delivering CV or (2) require the CV facilitate data transmission prior to the start of their next trip.

The BS Pollock fishery and the Rockfish Program have been suggested as examples where the processor facilitates data transmission at the end of a trip. Under this model, observers would need access to a communication device to facilitate transmission of observer data to NMFS for each landing of PCTC catch. However, unlike the BS Pollock fishery and the Rockfish Program, it is unlikely that all observers deployed on CVs in the PCTC program will have access to the appropriate communication equipment at a receiving processor. Delivery of PCTC catch will not be restricted to a closed class of processors. Any federally permitted processor could receive deliveries of cod from PCTC vessels and in some cases a processor may only receive PCTC deliveries during a very short time in a year. Processors receiving PCTC catch will not be in the full coverage category and will not have observers stationed at the processor. Prior to the trawl EM EFP in the GOA, observer data transmission from CVs participating in the Central GOA Rockfish Program was increasingly problematic.¹⁷⁷ Starting in 2014, the processors under the Rockfish Program did not have an observer coverage requirement and therefore did not maintain or provide equipment essential to the transmission of observer data from CVs. Lack of

¹⁷⁶ See <https://www.fisheries.noaa.gov/resource/document/final-regulatory-impact-review-proposed-regulatory-amendment-address-potential>

¹⁷⁷ See May, 2016, discussion paper: https://www.npfinc.org/wp-content/PDFdocuments/conservation_issues/Observer/ATLASdiscussionPaper0516.pdf

maintenance and out of date software contributed to significant data delays of observer data. NMFS anticipates similar problems in the PCTC program as those that occurred in Kodiak prior to trawl EM. NMFS would expect significant challenges to ensure that all processors receiving PCTC catch would maintain a computer with access for the observer to be able to transmit data to NMFS.

The other approach to enable observer transmission at the end of the trip would be to require the vessel to facilitate the data transmission. This would not require vessels to transmit data at sea if they do not have the capability, but instead vessels would provide use of communications equipment installed on the vessel or provide a connection upon delivery. There are several ways that a vessel could facilitate observer data transmission including: providing communication equipment on shore, getting access to wifi at the processing plant during the offload, or negotiating with their full-coverage observer provider to equip observers with communications equipment (e.g., cell phone). If the vessel was able to facilitate observer data transmission prior to the start of their next PCTC trip, the vessel would meet the requirements under this approach.

Requirements for at-sea transmission

Table 2-189 summarizes the current regulatory requirements to facilitate observer data entry and transmission. Of the 67 vessels that fished for Pacific cod in the BSAI using trawl gear between 2018 and 2021, 11 are greater than or equal to 125 ft LOA and already have ATLAS and data transmission capabilities as required by regulation. There are 39 of these vessels that also fished for pollock in the AFA program and are required to have a computer and ATLAS but are not required to have data transmission capabilities. However, at least 31 of these vessels already have data transmission capabilities and voluntarily provide it to observers so that the observers may transmit their data. There are 17 vessels that currently are not required to have ATLAS nor data transmission capabilities.

In June 2021, NMFS recommended that all vessels in the PCTC program would be required to provide at-sea data transmission to enable observer data to be transmitted during the trip and enable observer communication with NMFS. At their June 2021 meeting the Council received testimony from some trawl CVs that the cost estimates for at-sea transmission were underestimated and that these costs would be challenging for smaller vessels that have not yet invested in at-sea communication systems. In their motion, the Council clarified that Element 11 was not intended to modify the current observer data transmission requirements for non-AFA trawl CVs.

Table 5 provides a summary of NMFS recommendations for data transmission under the PCTC program. Consistent with the Council's motion, all AFA eligible vessels, regardless of size, would be required to provide at-sea data transmission. Due to the gains in data timeliness, improved data quality, and benefit of communication, NMFS continues to recommend at-sea data transmission for non-AFA CVs'. However, the agency also understands the cost associated with at-sea transmission, especially for smaller vessels. At this time, NMFS recommends that non-AFA vessels greater than 60 ft LOA participating in the PCTC program also be required to provide observers with the capability to transmit data to NMFS while at-sea. NMFS is continuing to work with industry to gather more information about the cost of at-sea data transmission and the number of boats that do not currently have this capability. Based on this input, the agency could revisit the cost burden and tradeoffs of at-sea transmission compared to trip-by-trip data.

As data service plans become more common and cost effective, smaller vessels may purchase equipment and data plans for their own communications. Vessels that have communications equipment already onboard the vessel are already required to make those available to the observer to use (50 CFR 679.51(e)(1)(iii)(A)). Under the PCTC Program, NMFS would modify these regulations and clarify that the owner and operator of a CV is required to provide communication equipment *to facilitate the electronic transmission of observer data to NMFS*. This regulation would clarify that if the vessel already has the equipment and transmission capability, they would be required to let the observer use it.

Table 2-189 Summary of the current regulatory requirements and NMFS recommendations related to observer access to a computer and the ATLAS software and data transmission for potential PCTC vessels. The list of potential vessels is based on trawl vessels that fished for Pacific cod in the BSAI from 2018-2021.

Vessel Category	Currently required by regulation?		NMFS Recommendations under PCTC program		Vessel Count
	Computer with ATLAS software	Data Transmission	Computer with ATLAS software	Data Transmission	
≥125 FT LOA	Yes	At-sea	Yes	At-sea	11
less than 125 FT LOA and AFA eligible	Yes	None (although at least 31 have at-sea transmission and voluntarily provide it)	Yes	At-sea	39
60 - 125 FT LOA	No	None	Yes	At-sea	11
less than 60 FT LOA	No	None	Yes	End of trip facilitated by the vessel	6
Total					67

Source: NMFS April 2020, table originates from BSAI_Trawl_Open_Access_2018_to_2021

Estimated costs

If NMFS required at-sea transmission under the PCTC program for AFA-eligible vessels less than 125 ft LOA, 39 vessels would have new requirements to provide at sea data transmission. However, NMFS estimates that only about 8 of them would likely need to upgrade to be able to transmit data at sea. An additional 17 vessels would need to purchase a computer to enable use of ATLAS; 11 of those would also be able to transmit data at sea and 6 vessels would be required to facilitate observer data transmission at the end of the trip.

Most vessels required to install ATLAS on a computer onboard the vessel comply with this requirement by allowing NMFS to install ATLAS on an existing computer on the vessel. When this occurs, the cost of providing the computer is minimal. Some vessels may elect to purchase a new laptop separate from the vessel's existing computer and have ATLAS installed on that laptop. In the case a vessel does not already have an existing computer that supports the ATLAS program, a new computer would need to be purchased. NMFS has estimated the cost of a computer that would meet the regulatory requirements at approximately \$500. If all 17 vessels affected by the requirement purchased a laptop computer, the fleetwide cost would be approximately \$8,500 (17 x \$500). However, many, if not all, of the vessels already have a computer that meets the minimum requirements and they would only incur costs if they choose to purchase an additional computer. Therefore, the mandatory cost of purchasing computers could be less than \$8,500 and may even be zero for the PCTC program.

The cost of at-sea data transmission is challenging to estimate because there are a variety of options and levels of service plans for vessels to choose from. There are several components that contribute to the overall cost of data transmission, including: the cost of the equipment; monthly communication fees that are associated with the amount of use; and installation costs. Cost breakdowns for each of these categories are provided in Table 2-190. NMFS is working with industry to further understand which vessels less

than 125 feet can transmit data at sea, which systems are used, the reliability of these systems, and range of costs. This information will be provided in greater detail during the 2021 October Council meeting.

Table 2-190 Marine Satellite Options for Transmitting Data at Sea

Service Package	Purchase Price	Rental Price per month (I/A)	Internet cost/month	One time installation cost ¹
KVH basic package	NA	Starting at \$650	Unlimited internet included in monthly rental price Phone usage is 10c a minute	Seattle = 125 hr x 16 = \$ 2000 Dutch Harbor = 160/hr x 16 = \$ 2,560 ²
Iridium Certus Thales VesseLINK 350	NA	\$780 ⁴	\$1200	unknown
Inmarsat Fleet One Cobham Sailor Terminal with 10m Antenna	\$2,995 ³ - \$3,495 ⁵	\$ 700 ³	<u>\$219⁵ - \$2,300</u>	Cost to install in Seattle: 125 hr x 16 = \$2000 Cost to install in Dutch Harbor: 160/hr x 16 = \$2,560 ²
KVH TracPhone Fleet One Compact Dome w/10m cable ³	\$3,458 ²	NA	<u>\$50</u>	Seattle = 125 hr x 16 = \$2000 Dutch Harbor = 160/hr x 16 = \$2,560 ²
Thales VesseLINK Maritime Terminal Portable Internet and Phone	\$7,295 ¹	NA	<u>\$120 - \$2,390</u>	unknown
KVH TracPhone HTS VSAT TrackPhone V3-HTS	\$14,995 ³ - \$17,995 ⁴	NA	<u>\$99 - \$1,999</u>	unknown
KVH TracPhone HTS VSAT TrackPhone V7-HTS	\$29,995 ⁴	\$2,499 ³	<u>\$799 - \$11,499</u>	unknown
Network Innovations Sailor 600 Maverick VSAT	\$25,000 - \$32,000 ⁵	NA	\$703 - \$1,054 ⁵	Up to \$5,000 in Seattle or Dutch Harbor ⁵

1- Installation costs do not include maintenance costs or upgrades

2- Installation cost quoted from Mackay Marine in Seattle, Washington

3- Cost information provided by satphonestore (<https://satellitephonestore.com>)

4- Cost information provided by Ground Control Global Satellite Communications (https://www.groundcontrol.com/maritime_satellite_internet.htm)

5- Cost information provided by Network Innovations

Based on the information provided by marine communications outfitters in Table 6,, at the low end of purchasing prices, NMFS estimates that the cost per vessel would include a one-time cost of \$5,000 to purchase and install the system and approximately \$200 per year for the communication services. At the high end of purchasing, the cost per vessel could be a one-time cost of \$5,000 for installation, up to \$32,000 for purchasing the system, and approximately \$1,000 per year for the communication services. If the vessel chose to lease equipment, at the low-end costs would be approximately \$600 per month and between \$2,000 and \$2,500 to install, depending on the location.

Recordkeeping and Reporting

As described in Section 2.8.11, the PCTC program would add recordkeeping and reporting requirements for vessels to maintain a trawl gear DFL or NMFS-approved ELB. This would not change regulations for vessels greater than 60ft LOA, since they are already required to maintain logbooks. However, it would be a new requirement for vessels that are less than 60ft LOA. NMFS estimates that the new requirement would impact less than 6 vessels.

Voluntary Full Coverage

Depending upon the scope of the cooperative based management program recommended by the Council, and the remaining trawl fisheries in the BSAI, the regulations authorizing trawl CVs to annually request placement in the full coverage category may no longer be needed. However, if the Council allocates A and B season only, the C season would remain a limited access trawl fishery (option 2.5). Regulations for vessels to opt-in to full coverage would still be needed under this option. If the Council does not select this option and allocates all seasons, this option may simplify the annual deployment plan process by removing uncertainty in the composition of the observer coverage strata.

Gear Conversion

Under the Council's PA gear conversion was not selected as part of the program. If it had been selected monitoring requirements for vessels using pot gear to harvest CQ would be the same as the monitoring requirements for trawl vessels used to harvest CQ. Any vessels using pot gear under the PCTC program would also be in the full coverage observer category and would comply with the same computer, ATLAS, and data transmission requirements would be for vessels using trawl gear.

Shoreside processors

As described in Section 2.8.11, it will be important for NMFS to ensure that adequate measures are in place to facilitate catch accounting of allocated species under the PCTC program. Catch of allocated species that are landed at the shoreside processing facilities would be required to be sorted by species and weighed on a State of Alaska certified scale that has capabilities to print an unalterable record of the weights. These provisions could be added to regulations or, similar to other rationalized fisheries where catch accounting takes place on shore, NMFS could require that processors operate under an approved CMCP.

NMFS does not anticipate that the requirements for shoreside processors would have a large impact on the processing facilities. To meet state recordkeeping and reporting requirements, processors are already required to sort and weigh catch and report accurately on a fish ticket. Adding these specific requirements into regulations for the PCTC program would be unlikely to create large changes in how catch is already sorted and weighed in the BASI Pacific cod fishery. NMFS could decide to add these requirements to regulations or use a CMCP to outline the requirements, as is currently done for AFA pollock. The CMCP would be developed by the processor and approved by NMFS. It would detail a series of performance standards ensuring that all delivered catch are accurately sorted and weighed by species.

Tenders

It is uncertain if tender activity would be a component of the PCTC program. If tendering is allowed under the program, there would need to be monitoring requirements developed for tendered PCTC catch to enable NMFS to account for the harvest by each cooperative. For example, a tender would be required to offload at a single processor. In addition, CV's delivering to a tender would all need to be associated with a single cooperative associated with the processor receiving the catch and NMFS would need to be able to verify these associations.

Impacts on Observer Providers

The demand for full coverage observer days would increase under this program. The number of new full coverage days that would have been within the PCTC Program had it existed from 2013 - 2019 ranges from 462 to 1,098 with an annual average of 700 additional days and an average of 23 vessels that are new to the full coverage category (Table 4). The actual number of observer days needed in future years would be dependent upon the number of vessels fishing and the number of days fished. As noted above, this could be lower than past years due to potential efficiencies and consolidation of fishing effort or it could increase due to longer fishing seasons or a slower paced fishery.

The four active certified full coverage observer providers that compete for business in Alaska fisheries currently are: AIS, Alaskan Observers, Saltwater, and TechSea. Observer companies contract directly with the vessel owners and operators in the full coverage category. The need to provide observer coverage for additional vessels in the full observer coverage category provides a business opportunity for these providers. In previous actions that created additional demand for full coverage observer¹⁷⁸ representatives from the full coverage providers were able to recruit and hire additional observers as needed, particularly when there are no “advanced” observer training qualifications (i.e., observers do not need to be lead-level qualified, which would make them more costly to recruit and train). NMFS does not anticipate that observers will be required to be lead-level qualified under this program. Therefore the PCTC program could create an opportunity for new observers to gain experience and could potentially help alleviate shortages in experienced observers that are required in other fishery programs.

Impacts on the Agency

NMFS administrative costs

This action would have a number of impacts on NMFS agency costs and administrative burden including additional staff time to process permits and issue transfers, and staff time to administer the cost recovery component of the program (Element 13). The agency would incur costs associated with new application development that would be necessary to incorporate a new catch share program into NMFS’ permit and catch accounting systems. There would also be an impact on the observer program in terms for training, briefing and debriefing.

NOAA Office of Law Enforcement

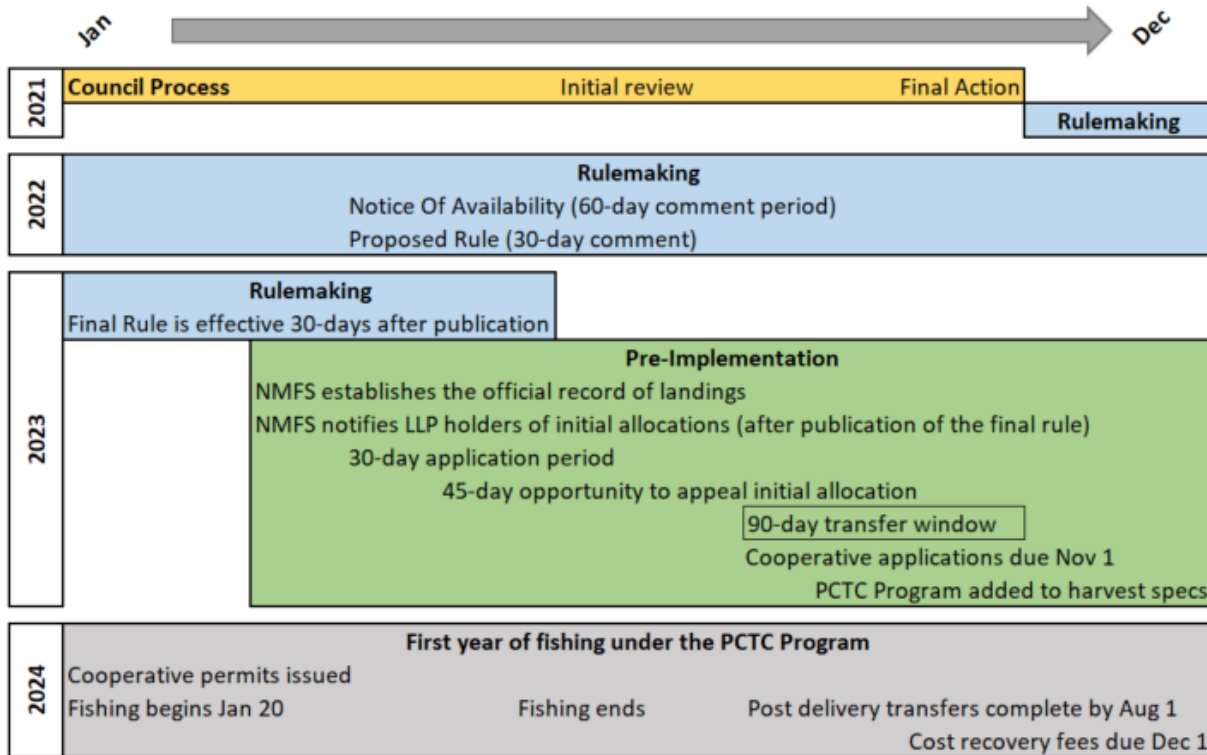
The primary enforcement goal for this program is to ensure timely and accurate reporting of catch. This is dependent on quota monitoring, which is best enforced dockside or through fishery data review. Additionally, FMP measures that create dependence on observer data for vessel-level management can contribute to added tensions between onboard observers and vessel operators and managers. As a result, observers may be placed under considerable pressure by vessel crew because of their roles for collecting data and reporting violations.

Enforcement anticipates the increase in observer coverage resulting from management measures will result in a correlated increase in all types of potential violations reported through observer statements, at least initially. Over time, it is likely that the *rate* of reported statements involving the observer program (e.g., wheelwatch, failure to notify, prohibited species mishandling) may decrease. Depending on how PSC caps are allocated, the rate of statements involving data collection by observers (e.g., intimidation/coercion/hostile work environment, interference and sample bias, etc.) may increase based on observed PSC bycatch rates.

¹⁷⁸ For example, see Regulatory Impact Review Analysis to allow BSAI trawl catcher vessels to opt into the full coverage, available online at: <https://www.fisheries.noaa.gov/resource/document/final-regulatory-impact-review-regulatory-amendment-observer-coverage>

The enforcement precepts developed by the Enforcement Committee in December 2015¹⁷⁹ were considered as general guidance for the Council throughout the development of this program and were included in previous drafts of this Analysis.

2.10.7.3. Implementation of PCTC Program Initial Allocations and Annual Processes

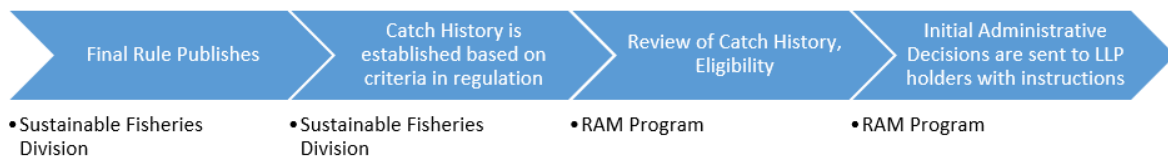


Similar to other catch share programs, after the Council takes final action, there is a complex series of steps before fishing activity commences. NMFS anticipates that the earliest this program would begin would be 2024. The initial allocation process and rulemaking process both require staff coordination and planning. In general, 2022 is the earliest the rulemaking stage would be complete. After rulemaking is finalized, initial allocations will be sent out to LLP holders, which can take several months.

Initial allocations

Following implementation of the final rule, NMFS will issue CQ through an IAD to participants based on the Council’s selected criteria for historical fishing participation. Typically, the exact method for initial allocation is documented in the regulations for a new catch share program. NMFS would issue a letter notifying the participants what they qualify for (or don’t qualify for) based on the catch history of the LLP license. The participants would be provided an application form and notified of a deadline for applying for quota share. Applications will be reviewed upon receipt and any applicants that challenge NMFS determination of quota share eligibility will be provided one 30-day opportunity to provide evidence supporting their challenge. If the challenge remains unsupported at the end of the 30-day period, the applicant will be sent an IAD denying the challenge and provided with a timeline and instructions for appealing.

¹⁷⁹ Enforcement Considerations for NOAA Fisheries and North Pacific Fishery Management Council, December 2015



Issuance of a quota share allocation is also an IAD; if the LLP holder disagrees with their initial allocation, they may file an appeal, the process to file an appeal is discussed below. NMFS would issue an interim CQ permit until National Appeals Office provides an official decision if the season opens prior to the end of the appeals process.

90-day transfer period

In the Council motion, Element 7.1.1 provides for a period for the LLP holder associated with the non-exempt AFA vessels to notify NMFS within 90 days of the initial issuance of the PCTC QS. This suboption for transfer agreement dispute resolution is distinct from the statutory requirement to provide for an administrative appeals process which is described below. More information about the element can be found in Section 2.8.7.1 of the analysis. With the initial issuance of QS to the LLP licenses, the LLP holders eligible under this suboption would be notified they have 90 days to transfer the QS to another LLP license and then provide on an application form which LLP license is to receive the transfer. Upon review of a completed transfer application form, NMFS may approve the transfer and remove the QS from the original LLP license and assign the QS to the LLP license receiving the transfer. After a transfer is approved by NMFS, the QS would be non-severable from the LLP license to which it is assigned.

General appeals process

Section 303A of the MSA authorizes LAPPs and requires NMFS to “include an appeals process for administrative review of the Secretary’s decisions regarding initial allocation of limited access privileges.” This would apply to the allocations issued under the PCTC program. The regulations at 50 CFR 679.43 describe the existing appeals process that would also apply to the PCTC Program.

To fulfill the appeal process requirement, NMFS adopted a rule (79 FR 7056, February 6, 2014) at 15 CFR part 906, which designated the National Appeals Office (NMFS NAO), a division within NMFS Office of Management and Budget, as adjudicator for appeals in future LAPPs established under section 303A of the MSA. NMFS NAO adjudicates initial administrative determinations, agency actions that directly and adversely affect an appellant. Although not exclusively, NMFS NAO proceedings are for appeals of denials of permits or other limited access privileges. Typically, NMFS NAO will be used for informal administrative appeals. However, NMFS has centralized the appeals process in the NMFS NAO, which operates out of NMFS’ headquarters in Silver Spring, MD. The NMFS NAO processes appeals that are filed with the Alaska Region.

When NMFS issues an IAD on behalf of the Regional Administrator to allocate quota at the implementation of a LAPP, participants may file an appeal. The procedure for appealing an IAD through the NMFS NAO is at 15 CFR 906 (79 FR 7056, February 6, 2014). In the past, the appeals process can take up to 4-5 months depending on workload.

After the final rule is published and NMFS sends out IADs to initially allocate QS, applicants would be given an opportunity to provide evidence if they dispute the determination. The Regional Administrator will evaluate applications received and compare all claims in an application with the information in the PCTC Program official record. Application claims that are consistent with information in the official record will be approved by the Regional Administrator. Application claims that are inconsistent with the official record, unless verified by documentation, will not be approved. An applicant who submits

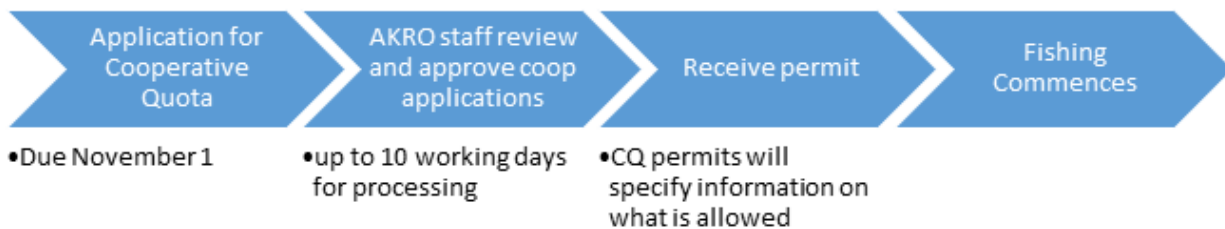
inconsistent claims, or an applicant who fails to submit the information specified in forthcoming regulations will be provided a single 30-day evidentiary period in which to submit the specified information, submit evidence to verify their inconsistent claims, or submit a revised application with claims consistent with information in the official record. An applicant who submits claims that are inconsistent with information in the official record has the burden of proving that the submitted claims are correct. Any claims that remain inconsistent or that are not accepted after the 30-day evidentiary period will be denied, and the applicant will be notified by an IAD of their appeal rights.

Annual processes

Initial implementation of a new catch share program typically requires more resources, including staff time and database development, than annual processes. Each catch share program has its own forms, applications, ownership and use caps, cost recovery, and monitoring provisions that require agency time, resources, and staff. This section identifies annual processes that will be cost recoverable in the PCTC Program. This list is non-exhaustive and subject to change.

Cooperative applications

Under Element 9, annual cooperative applications must be filed on or before November 1 of the preceding year. Cooperative formation is specified in Element 1 and cooperative reporting is generally specified in Element 9.



The annual cooperative application would provide information to NMFS on the cooperative's fishing activity. The information that would be requested in the application must be filled out completely and correctly to be approved by NMFS. Once approved and following the finalization of harvest specifications for the season, NMFS would issue CQ permits. Depending on if the Council limits the number of cooperatives, and how many apply, this may be a fairly substantial annual task.

The cooperative application would require information such as:

- A copy of the business license issued by the state in which the PCTC cooperative is registered as a business entity;
- A copy of the articles of incorporation or partnership agreement of the PCTC cooperative;
- Provide the names of all persons, to the individual level, holding an ownership interest in the LLP license and the percentage ownership each person and individual holds in the LLP license;
- A copy of the cooperative agreement signed by the members of the PCTC cooperative that would include terms that specify that:
 - QS holders affiliated with processors cannot participate in price setting negotiations except as permitted by general antitrust law;
 - The cooperative must establish monitoring provisions, including sideboard protections in the GOA, sufficient to ensure compliance with the PCTC Program;

- Terms and conditions to specify the obligations of PCTC QS holders who are members of the cooperative to ensure the full payment of cost recovery fees that may be due.

Failure to provide the information required in the cooperative application may result in delays in CQ permit issuance. NMFS will develop the application process for annually establishing cooperative accounts.

Prior to the approval of a cooperative application, NMFS would verify compliance with ownership and use caps, including caps applicable to processor harvester shares. NMFS would monitor compliance with vessel use caps throughout the season and cooperatives would be responsible for tracking vessel use caps. If the cooperative members would exceed any of their caps, the members would need to transfer their CQ until they were not in violation anymore.

Inseason Management

Inseason management staff publish the final harvest specifications including the BS and AI Pacific cod TACs. For the trawl CV sector allocation of the combined BS and AI non-CDQ TACs, NMFS would determine what is needed for incidental catch first and then allocate each cooperative's CQ.

During the calendar year, NMFS would manage the trawl CV BSAI trawl CV incidental catch allowance and PSC limits not allocated to the PCTC Program. Any allowable transfers by PCTC cooperatives of Pacific cod or PSC limits would be done electronically through eFish. Cooperatives would be required to manage GOA sideboard usage under Element 4, Option 4.2. NMFS would continue to open and close the sideboard limits in the GOA. NMFS would report to the Council on the number of transfers in the PCTC Program, similar to other catch share programs in their inseason management report each year.

If the Council decides to keep the Pacific cod trawl CV C season as a limited access fishery and not included it as a season within the PCTC Program, inseason management of C season would require active inseason management to monitor the fishery for any necessary actions to fully harvest and avoid exceeding the BSAI Pacific cod TAC.

Cooperative Permits, Inter-cooperative Transfers, and Permanent Transfers

Once the CQ permit is issued and the fishing season begins, the cooperatives may commence fishing activity associated with the new PCTC Program endorsement and it is their responsibility to adhere to all rules and regulations associated with the PCTC Program.

The PCTC Program cooperative managers would use eFish to transfer CQ, similar to existing catch share programs. CQ would be transferable from one cooperative to another using eFish (or a similar platform) which would generate an email alert notifying the receiving cooperative that they could then accept the transfer of CQ in eFish. Both cooperatives would get updated permits that show their CQ balances in eFish. These transactions can occur through the automated eFish process, similar to other catch share programs.

If a transfer (sale) of an LLP license occurs in the PCTC Program, the LLP license holder would fill out the existing LLP license transfer form.¹⁸⁰ The new LLP license holder designated by the transfer form would receive the LLP license with any associated endorsements and QS.

As for the processor-held harvester shares, FPPs are not currently transferable. If in the PCTC Program a processor decides to transfer their permit, NMFS would issue a new permit to PCTC processors who hold harvester QS. If NMFS decides to use the existing FPP and add a processing endorsement, only the endorsement would be transferable. Or they could issue a separate permit for the processors and that

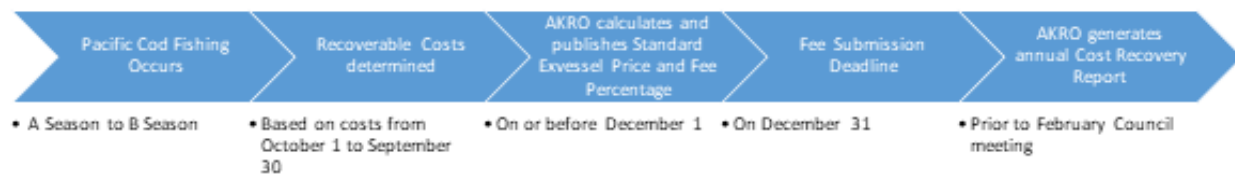
¹⁸⁰ <https://www.fisheries.noaa.gov/permit/alaska-license-limitation-program-applications-groundfish-and-crab>

processor can transfer that permit to another processor who holds an FPP. Processing history will always be traceable through the FPP.

At this time, much of the transfer process is handled by NMFS staff. In the future, NMFS is working on a comprehensive Integrated Fishing Application that will allow for more automation for all of the annual processes, including quota issuance and transfers.

Cost Recovery

As required by the MSA, a fee, not to exceed 3 percent of the ex-vessel value, would be applied to all PCTC Program landings to cover costs directly related to the management, data collection, and enforcement of the program (Element 13).



Cost recovery fees would be paid via eFish on or before December 31 of each year by the cooperatives. Any LLP license holder granted a limited access privilege would be responsible for cost recovery fees. Specifically, cost recovery fee regulations would require the cooperative documented on the PCTC Program CQ permit as the entity that must comply with the cost recovery requirements. Transfer of, or nonrenewal of CQ or QS, would not change the cost recovery requirements for the CQ permit holder.

For the PCTC program there would be two potential options for generating a standard ex-vessel price (standard price) for Pacific cod: either use existing Pacific cod ex-vessel volume and value reports or use CFEC gross earnings data to generate standard prices using a similar methodology as the AFA cost recovery program. NMFS currently calculates two annual standard prices for Pacific cod, one for fixed gear and one for trawl gear. The standard prices are calculated using volume and value data reported in the Pacific Cod Ex-Vessel Volume and Value Report, which includes data from January 1 through October 31. The fixed gear standard price is applied to CDQ fixed gear Pacific cod landings. The trawl gear standard price is applied to CDQ trawl gear Pacific cod landings and Amendment 80 Pacific cod landings. *NMFS recommends the standard prices are calculated using the Pacific Cod Ex-Vessel Volume and Value Report to maintain consistency across Pacific cod trawl standard prices, to prevent a one-year lag in the data, and to reduce staff time spent calculating standard prices.*

Cooperative Reports

Under Element 12, each cooperative shall annually produce a report for the Council describing its membership, cooperative management, and performance in the preceding year, including use of processor issued harvest shares, if applicable. Similar to the Rockfish Program, NMFS would not recommend additional cooperative reports to NMFS for management of the PCTC Program. However, the Council can request reports as an opportunity for cooperatives to report on their activity for the year.

Observer Program

Generally, implementation of this program would result in minor changes in workload for the Observer Program. Additional observers may need to be trained early in the fishing year to deploy on vessels fishing under the PCTC program but the number of observers trained annually fluctuates each year depending upon demand for observer services and observer providers would continue to coordinate with NMFS to enroll observers in training classes to meet industry demands.

Observer Program staff would coordinate with vessels during the implementation period to provide and install the ATLAS software prior to the start of fishing under the Program. Additionally, minor programming changes would be made to ODDS to ensure that vessels fishing under the PCTC Program would be removed from the partial coverage selection pool.

2.10.8. Effects on Safety

National Standard 10 states that “conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.” In response to National Standard 10, one of the stated goals of the PCTC Program is to improve safety at sea. Since fishing practices and seasons are likely to be different under the PCTC Program and limited access than under status quo (Alternative 1: No Action) conditions, repercussions associated with the management changes on human safety at sea may also differ (North Pacific Fishery Management Council, 2011).

The current BSAI trawl CV Pacific cod fishery requires vessel operators to compete for a share of the BSAI trawl CV sector apportionment of Pacific cod during a brief A season and to a lesser extent the brief B season and the C season. BSAI weather conditions during the A season (the end of January and beginning of February) can be unpredictable and dangerous, especially for smaller CVs. Storms can cause inclement weather that may cause unsafe fishing conditions.

Economic incentives are created when competing to catch a share of the sector’s apportionment. Under the No Action alternative, that may entice a vessel operator to go to sea or continue fishing in weather conditions that may pose a higher operating risk than they would be willing to accept if they were operating under the proposed PCTC Program. Each person will respond differently to these incentives depending on the level of risk they are willing to accept and the vulnerability of their vessel to those weather conditions. Since the fleet is composed of various sizes of trawl CVs ranging in size from less than 60 feet LOA to over 150 feet LOA, the relatively small trawl vessels may be more susceptible to adverse outcomes under poor weather conditions than larger trawl vessels.

Management of the BSAI trawl CV Pacific cod fishery under the PCTC Program (either Alternative 2a, Alternative 2b, or the PA) is expected to extend the A season from about 2-weeks at the end of January and early February to April. Effort during that time would be determined by when Pacific cod are aggregated to improve catch rates, weather conditions, and reducing conflicts with other fisheries. The B season (April 1 through June 10) and C season (under Alternative 2b) could also be timed to fish when weather is better. The C season (June 10 to November 1) would not be included under Alternative 2a or the PA of the PCTC Program, but effort during that season is relatively small and vessels could still time their fishing to avoid bad weather. Experience with other catch share programs would suggest that although a person’s allocation will not be jeopardized by decisions to delay fishing to reduce safety risks under any of the action alternatives, some incentives may still exist for persons to fish in inclement weather - including market opportunities and operational cost savings (North Pacific Fishery Management Council, 2011).

National Institute for Occupational Safety and Health (NIOSH) manages the CFID. CFID is a national surveillance system that contains information on work-related fatalities and vessel disasters in the U.S. fishing industry. For Alaska, CFID contains fatality data from 2000 through 2018 and vessel disaster data from 2000 through 2018. One limitation is that these data sources do not include incidents that could also be used as indicators of safety at sea including, for example, nonfatal injuries, vessel system failures not resulting in abandonment, and search-and-rescue missions. Study of these areas in the future could provide more insight into additional hazards. A second limitation is that do not cover the most recent fishing years.

NIOSH staff was provided a list of vessels that the AKFIN summary of CAS data indicated were active in the BSAI trawl CV Pacific cod fishery from 2004 through the 2020 A season. The list of vessels was matched with all fishing vessels that had been added to CFID as the result of:

1. one or more crewmember fatalities that occurred on or otherwise involved the vessel; or
2. if the vessel sunk, capsized, or sustained other damage that required the entire crew to abandon the vessel.

Based on vessel name, vessel official number, casualty date, and casualty location, it was determined that there was a single nonfatal vessel sinking and no crewmember fatalities among vessels actively participating in the BSAI trawl CV Pacific cod fishery during 2000-2018. Preliminarily identified cases of fatalities and vessel disasters occurring in 2019 through August 2020 that have not yet been added to CFID were reviewed by NIOSH staff and did not reveal any additional cases by vessels participating in the BSAI trawl CV Pacific cod fishery.

In addition, in the April 2018 US Coast Guard Report to the Council during the April meeting, it was noted that two crewmembers on a trawl CV vessel participating in the Pacific cod fishery Northwest of Cape Sarichef were knocked overboard by a wave (USCG, 2018). The crewmembers were recovered and did not need further assistance from the Coast Guard. It was reported by the public during the April Council meeting that a likely contributor to the accident was the crowding and duration of the A season Pacific cod fishery that caused vessel operators to race to catch a portion of the relatively small trawl CV apportionment.

2.10.9. Effects on Consumers

This section examines the effects of the PCTC Program alternatives on consumers. To allow an examination of the net benefits to the Nation, where possible, the effects on U.S. consumers are distinguished from the effects on consumers in other markets. The effects on consumers of the different PCTC Program alternatives are likely to be very similar. Because the impacts are expected to be similar, the discussion of those alternatives is consolidated into a discussion that applies to both Alternative 2a and Alternative 2b. A separate discussion of the Alternative 1 (No Action) is provided to compare its impact to the action alternatives.

2.10.9.1. Alternative 1: Status Quo (No Action)

Under the status quo management it is likely that trawl CV participants will continue to produce high quality H&G, fillet blocks, and individually frozen fillets, which are either individually quick-frozen or processed into shatterpack or layer pack. These product forms account for over 80 percent of total production annually. Some of the H&G Pacific cod is sent to the East Coast refresh market or is sold to grocery stores or food services as sticks, portions, or is breaded. Foreign consumers, especially China, Japan, and Europe, also purchase H&G Pacific cod for further processing, including the production of salt cod. Fillet production is primarily sold to the domestic market and marketed to the food service, home retail, and restaurants.

2.10.9.2. Alternatives 2a, 2b, and the PA

Changes may occur in the production of CV harvests to the benefit of consumers. Although production is typically high quality, it is believed that some improvements could be achieved through cooperative management, removing pressure to rapidly catch and process fish to maximize individual vessel catch rates. Although the BS shorebased sector is producing over 90 percent of the raw product into fillets, there could be some increases in the fillet production by processors located in the Adak, King Cove, and Sand Point areas. The slower pace of the fishery could result in some of these processors to have more time to process their deliveries to produce more labor intensive, but higher valued products.

Improvements would likely be limited to those in a cooperative. Improvements in consumer benefits arising from improved quality are likely to be realized, both in U.S. markets and international markets.

2.10.10. Effects on Environmental/Non-use Benefits

The effects on environmental/non-use benefits of the different PCTC Program alternatives are likely to be very similar. Because the impacts are expected to be similar, the discussion of those alternatives is consolidated into a discussion that applies to both Alternative 2a and Alternative 2b. A separate discussion of the Alternative 1 (No Action) is provided to compare its impact to the action alternatives.

Improvements in environmental conditions are valued by the public at large. For example, conservation, preservation, and enhancement of endangered species and their critical habitat are often considered to have significant economic, social, cultural, and symbolic value to the public. Although BSAI Pacific cod populations could be of lesser concern to the public than high visibility species such as bald eagles, it is likely that the public values conservation (in the sense of “wise use”) of this stock.

The utility gained from simply “knowing” that a stock is well maintained and sustainably managed in its natural habitat is commonly referred to as a passive-use value. In addition, the public may also value the careful stewardship of the resource. For example, even if fish stocks are well managed and catch is at a level that maintains acceptable stock sizes, the public may experience some welfare loss, say, if catch of BSAI Pacific cod from the PCTC Program are not well utilized (i.e., are wasted). No known studies of non-use values, within the context of the BSAI Pacific cod groundfish fishery, have been conducted to date, preventing any quantitative estimates of its potential value. This section, however, provides a qualitative analysis of these passive-use benefits.¹⁸¹

2.10.10.1. Alternative 1: Status quo/no action

In the current fishery, catch of BSAI trawl CV Pacific cod are limited either by TAC or by PSC limits. Managers monitor harvests inseason, closing the fishery when the total allowable catch for the sector is estimated to be taken. Managers have become quite adept in their estimate and have generally succeeded in maintaining catch below TAC. Occasionally, TAC is exceeded, but overages have not exceeded OFL, or threaten stocks. Public non-use benefits derived from the management of a health BSAI Pacific cod stock are likely to be sustained if current management is perpetuated.

In addition to total catch of BSAI Pacific cod being limited, Pacific cod is a full retention species so discarding is not permitted unless required by regulations if the Pacific cod directed fishery is closed and incidental catch of Pacific cod exceeds the MRA for the non-Pacific cod groundfish directed fishery. Additionally, other species are caught incidentally, some of which is discarded. Mortality of discards of incidental catch reduces the non-use values to the public that arise through productive use and stewardship of the resource.

2.10.10.2. Alternatives 2a, 2b, and 3 (PA)

Under these alternatives, catch of BSAI Pacific cod by the trawl CV sector will continue to be limited by TAC or PSC limits. These limits should be effectively maintained through the monitoring and management program, perpetuating the current non-use benefit derived from maintenance of healthy stocks.

NOAA Fisheries would issue annual, exclusive cooperative harvest privileges of the trawl CV allocation of BSAI Pacific cod under this program. The program would continue to require full retention requirement for BSAI Pacific cod allocated to the trawl CV cooperatives. These measures would effectively maintain full retention of BSAI Pacific cod, which in turn would continue to maintain the non-use benefits of this program. In addition, product outputs of the shorebased processors are likely to be of higher quality. These improvements could also provide non-use benefits to the public that values efficient production from the resourced (i.e., improved utilization).

¹⁸¹ This section intends to discuss only the potential public welfare benefits that may accrue from the environmental consequences of each alternative.

2.10.11. Effects on Net Benefits to the Nation

The greatest change in net benefits to the Nation would result from the Council selecting a version of the PCTC Program to replace the No Action alternative (Alternative 1). Net benefits are calculated by summing the consumer and producer surplus that are generated within the U.S. economy. Producer surplus is expected to be primarily generated at the first wholesale level for at-sea processors that produce primarily an H&G product that is often reprocessed outside the U.S. Shorebased and inshore floating processors that produce both an H&G product and fillets will also generate producer surplus at the first wholesale level and at other wholesale levels, since secondary processing of the H&G products does occur within the U.S. and fillets are sold through a food marketing and sales network. Secondary processing typically takes place outside the U.S. and has traditionally occurred in China where lower labor costs are available. Limited information is available on the destination of the fish after secondary processing. It is assumed that the majority of that product remains outside the U.S. but some unknown amount is reimported. Final products that either remain in or reenter the U.S. market may increase total consumer surplus. Based on the information that is available regarding the markets, most net benefits to the Nation are expected to be captured at the ex-vessel and first wholesale levels for the at-sea sector. Producer surplus will be captured at those levels for shorebased deliveries, but additional producer surplus will also be generated at other wholesale and retail levels.

Under the No Action alternative, vessels would compete to harvest a share of the BSAI Pacific cod trawl CV fishery when open to directed fishing. This is expected to result in higher costs of production and lower value for both harvesters and first processors of the harvested fish relative to the PCTC Program alternatives. Maintaining the status quo will result in producer surplus that is about the same as currently realized and will equate to lower net benefits to the Nation than the PCTC Program alternatives. Producer surplus is expected to increase under Alternative 3. Vessels and processors operating under the cooperative structure could develop working relationships that allow the fleet to work together within its cooperative and with its processor. That cooperation is expected to allow both to generate technical efficiencies. They could also adjust the timing of the fishery to allow both harvesters and processors to utilize their assets more effectively. This would allow both to operate in the BSAI trawl CV Pacific cod fishery over more of the A season when the fishery would likely have been closed to directed fishing under the No Action alternative.

Consumer surplus is realized for Pacific cod that stays in the U.S. economy. A higher quality product can result in greater consumer surplus. Product quality is directly related to the timing and handling of fish on the vessel and at the processor. Under a PCTC Program alternative, vessels can take shorter trips and handle the Pacific cod and fish in better weather conditions so there is less damage. The result is a fresher and higher quality fish delivered to the processor. Processors can work with their fleet to time deliveries, so the fish is on the boat for less time and once at the plant is processed quickly. This allows a better product to be produced.

In summary, it is expected that the PCTC Program alternative will result in greater net benefits to the Nation compared to Alternative 1. The increase in net benefits is a result of increases in both producer and consumer surplus.

2.10.12. Affected Small Entities

Section 603 of the Regulatory Flexibility Act (RFA) requires that an initial regulatory flexibility analysis (IRFA) be prepared to identify whether a proposed action will result in a disproportionate and/or significant adverse economic impact on the directly regulated small entities, and to consider any alternatives that would lessen this adverse economic impact to those small entities. NMFS prepares the IRFA in the classification section of the proposed rule for an action. Therefore, the preparation of a separate IRFA is not necessary for the Council to recommend a PA. This section provides information

about the directly regulated small entities that NMFS will use to prepare the IRFA for this action if the Council recommends regulatory amendments.

This section also identifies the general nature of the potential economic impacts on directly regulated small entities, specifically addressing whether the impacts may be adverse or beneficial. The exact nature of the costs and benefits of each alternative is addressed in the impact analysis sections of the RIR and is not repeated in this section, unless the costs and benefits described elsewhere in the RIR differs between small and large entities.

Identification of Directly Regulated Entities

The alternatives would directly regulate owners and operators of harvesters and processors that participate in the BSAI trawl CV Pacific cod fishery including 1) trawl CVs, 2) pot CVs, 3) shorebased processors, 4) floating processors, 5) trawl C/Ps acting as a mothership, and 6) small government jurisdictions in the Aleutian Islands. This action may also impact observer providers that support the BSAI trawl CV Pacific cod fishery, but they are indirectly impacted. Therefore, observer providers are considered directly regulated entities in the IRFA prepared for this action.

Count of Small, Directly Regulated Entities

The RFA recognizes and defines three kinds of small entities: 1) small businesses, 2) small non-profit organizations, and 3) small government jurisdictions. Small entities that might be directly regulated by this action would be harvesting or processing entities (LLP license owners and/or vessel owners) that fall into the “small business” category and small government jurisdictions.

A small business includes any firm that is independently owned and operated and not dominant in its field of operation. Businesses classified as primarily engaged in commercial fishing are considered small entities if they have \$11 million in annual gross receipts for all businesses in the commercial fishing industry (NAICS 11411). Based on that definition a total of 13 trawl CVs would be considered small entities this count includes five trawl CVs that are greater than 60’ LOA and eight CVs that are less than 60’ LOA with a transferable AI endorsement. All the C/Ps that are directed regulated by this action do not meet the SBAs definition of a small entity due to cooperative affiliation.

The SBA’s final rule (81 FR 4469, February 26, 2016) modified the size standard for “seafood product preparation and packaging” (NAICS code 311710) that applies to seafood processors. SBA’s final rule modified the definition of a small entity operating as a seafood processor to include all entities that are independently owned and operated, not dominant in their field of operation, and have a combined annual employment of fewer than 750 employees. Of the plants that took deliveries of Pacific cod from 2017 through 2019 that are currently in business, one firm would be considered a small entity.

The RFA defines "small governmental jurisdiction" as the government of a city, county, town, school district or special district with a population of less than 50,000. Two small governmental jurisdictions are directly regulated under the proposed action. Adak and Atka will be required to submit an intent to process application to NMFS to receive a portion of the set-aside of a defined amount of trawl CV directed AI Pacific cod A season fishery.

Impacts to Small, Directly Regulated Entities

The alternatives and associated costs and benefits are fully described and analyzed in the RIR. Based upon the best available scientific data, and consideration of the objectives of this action, it appears that there are no alternatives to the PA that have the potential to accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that have the potential to minimize any significant adverse economic impact of the proposed rule on small entities. Implementing the various elements in the PA are expected to provide benefits to small entities participating in the BSAI trawl CV harvest sector by providing allocation of QS to small entities and provide the eight small entities with a transferable AI trawl endorsement an opportunity to fish under the PCTC in years an AI shoreplant is

operational. The processor would receive an allocation of harvest shares based on their processing history and they would have the opportunity to use the CQ derived from those shares to attract deliveries. This action is expected to slightly increase the recordkeeping and reporting requirements of small entities participating in the PCTC and increase their monitoring and enforcement costs. Monitoring costs would increase because of additional observer coverage that would be required under the PCTC and enforcement costs would increase as a result of cost recovery fee. Benefits of the program are expected to outweigh any additional costs the small entities will incur as a direct result of the PCTC.

2.10.13. Summary of Effects of Alternatives

Table 2-191 Summary of effects of the Alternative 1 and action alternatives

Effects on Harvesters	
Alternative 1 (No Action)	<p>Harvest participation and fishing practices in the BSAI Pacific cod fishery for the trawl CV sector are likely to be similar to current participation and fishing practices.</p> <p>In total, 110 LLP licenses and 115 trawl CVs reported targeted BSAI Pacific cod landings during the 2004 - April 10, 2020. Of the total catch of BSAI Pacific cod during that period, 88% was from target while 12% was from incidental. The pollock fishery had the highest incidental catch of Pacific cod.</p> <p>BS contributed 76% of the target catch, while the AI contributed 24% of the target catch during the 2004 through April 10, 2020. In total, 32 LLP licenses and 57 trawl CVs reported targeted AI Pacific cod, while 107 LLP licenses and 105 trawl CVs reported targeted BS Pacific cod during the 2004 - April 10, 2020 period.</p> <p>Of the total target catch during the 2004- April 10, 2020 period, 89% was from the A season, 10% from the B season, and 2 percent from C season.</p> <p>The length of the BSAI Pacific cod fishery for the trawl CV sector has compressed in recent years.</p> <p>Of the TLAS halibut PSC limit during 2004-2020, both trawl CV sector and the AFA C/P sector utilized 56%, with trawl CV sector accounting for 97% and the AFA C/P sector accounting for 3%. Halibut PSC limits could constrain the TLAS Pacific cod fishery if a race for fish were to continue in the future.</p> <p>Crab PSC limits were generally not a constraint for the TLAS sectors during 2004-2020 and would likely not be constraining in the future.</p>
Alternative 2a	<p>Like Alternatives 2b and 3, cooperative harvest privileges under this alternative would be expected to result in an incentive to reduce the “race for fish” and to optimize harvest of CQ. But this alternative relative to the other alternatives has the largest reduction of halibut PSC limit (35%) which could inhibit cooperatives from harvesting all their CQ. This alternative, as well Alternative 3, requires a 35% reduction in the crab PSC limits. Of the reduced crab PSC limits, red king crab (Zone 1) likely has the greatest potential to inhibit cooperatives from harvesting all their CQ.</p> <p>The total number of qualified LLP licenses based on 1997 sideboard history and 2014-2019 A and B seasons catch history would be 119, with 33 qualifying from 1997 sideboard history and 86 qualifying from 2014-2019 history. Also qualifying are 5 LLP licenses that have transferable AI endorsements.</p> <p>Members of cooperatives would have the flexibility of delivering to multiple cooperatives, but likely established relationships with processors will have an important influence on harvester delivery choices. The 30% allocation of harvester shares to processors under this alternative would also provide a stronger negotiating position for processors since these shares could be used as an incentive for harvester deliveries.</p> <p>Since each of the 2 qualified C/Ps acting as motherships would be restricted by processor limits unique to that C/P, they would need to determine which CVs could deliver to them while staying under their limit thus they would likely prioritize deliveries by vessels using LLP license held by the C/P firm. By prioritizing their own LLP licenses, the C/Ps may not be able to provide a market for all CVs that are designed for offshore deliveries which could result in those CV operators leasing out their CQ.</p> <p>Not allocating C season as CQ may reduce the impacts of trawl CV harvesting more of their allocation in the BS thus benefitting those sectors fishing in the Pacific cod fishery later in the year.</p>

Effects on Harvesters	
	<p>However, requiring cooperatives to set aside 25% of their A season for AI shoreplants could negatively impact those sectors that historically fish Pacific cod in the AI greater than Alternative 3. Additionally, leaving C season as limited access fishery would likely result in some TAC and ICA being reallocated to other sectors later in the year.</p>
Alternative 2b	<p>Like Alternatives 2a and 3, cooperative harvest privileges are expected to result in less motivation to race for fish and to optimize harvest of CQ, but this alternative requires only a 10% reduction in the halibut PSC limit so the alternative likely provides the greatest opportunity for cooperatives to harvest all their CQ.</p> <p>No or minimal impact on cooperatives that could form that are similar in membership to AFA cooperatives. May negatively impact new LLP license holders that are unable to attract two additional LLP license to form a cooperative.</p> <p>Total qualified LLP licenses based on 2004-2019 history for all three seasons would be 108. Alternative requires a person to hold LLP licenses in aggregate at least 1% of total QS, so of the 108 LLP licenses eligible, 41 of those LLP licenses do not meet the 1% threshold leaving 67 LLP licenses qualified not including the 8 LLP licenses with transferable AI endorsements that would also qualify.</p> <p>Members of cooperatives would have the flexibility of delivering to multiple cooperatives, but it is likely that established relationships with processors would have an important influence on harvester delivery choices. Unlike Alternative 2a and Alternative 3, this alternative provides processors less influence and market power since it does allocate harvester shares to processors.</p> <p>10 LLP licenses are held by three firms could qualify CVs to deliver to 2 qualified C/Ps acting as motherships. These LLP licenses accounted for 15.3% of the qualifying catch during 2004-2019 all of which could be delivered to these C/Ps. The alternative would allow these C/Ps firms to have greater control over the CQ and/or CVs they own. Alternative does not address concerns by CV operators whose vessels are not designed to deliver shoreside and are not 75% owned by a qualified C/P firm. Owners of these CVs/LLP licenses would likely need to lease their CQ.</p> <p>This alternative likely provides greater opportunity for specialization amongst the different groundfish fisheries relative to Alternatives 2a and 3 since ownership and use cap is 10% and vessel cap is 5%.</p> <p>Any increase in effort in the BS relative to status quo could increase the possibility that the BS will close on TAC.</p> <p>Allocating all three seasons as CQ would likely result in a smaller portion of any remaining cooperative CQ and ICA being reallocated to other sectors later in the year.</p>
Alternative 3 (PA)	<p>Like Alternatives 2a and 2b, cooperative harvest privileges are expected to reduce motivation to race for fish and to optimize harvest of CQ, but the halibut PSC limit reduction (25%) for this alternative is more favorable to PCTC harvesters than Alternative 2a but less than Alternative 2b. As a result, this alternative relative to Alternative 2a could provide more potential for cooperatives to harvest all their CQ. This alternative, as well as Alternative 2a, have a 35% reduction in the crab PSC limits. Of the reduced crab PSC limits, red king crab (Zone 1) likely has the greatest potential to inhibit cooperatives from harvesting all their CQ.</p> <p>Minimal impact on cooperatives that could form that are similar in membership to AFA cooperatives. May negatively impact new LLP license holders that are unable to attract two additional LLP license to form a cooperative.</p> <p>Total qualified LLP licenses based on 2009 – 2019 A and B seasons history would be 92 not including 7 LLP licenses with transferable AI endorsements that would also qualify.</p> <p>Members of cooperatives will have the flexibility of delivering to multiple processors, but likely established relationships with processors will have an important influence on harvester delivery choices. An allocation of harvester shares to processors under this alternative will provide a stronger negotiating position for processors since these shares could be used as an incentive for harvester deliveries.</p> <p>The alternative would limit BSAI Pacific cod processing for eligible C/Ps acting as a mothership. The Council selected the limit of 125 percent of each eligible C/Ps processing during the qualifying period as part of its PA. The impact of that limit is expected to fall within the range described under Alternative 2a and Alternative 2b.</p>

Effects on Harvesters

Leaving C season as a limited access fishery may reduce impact of trawl CV harvesting more of their allocation in the BS and potentially allowing other sectors to fish their allocation in the BS. However, requiring cooperatives to set aside 10% of their A season CQ for delivery to AI shoreplants could negatively impacts those sectors that historically fish Pacific cod in the AI but less than Alternative 2a.

Additionally, leaving C season as limited access fishery would likely result in some TAC and ICA being reallocated to other sectors later in the year.

The PA would allow for greater predictability for fishery participants and would provide for increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions. This flexibility has the potential for decreasing vulnerability to adverse conditions and increasing resilience following adverse events or accompanying adverse trends, including adverse effects of climate change, for involved individuals, entities, and communities.

Effects on Processors

Alternative 1 (No Action) Processors will continue to compete for deliveries but will not have the capacity to offer markets to all CVs that may want to deliver because of the compressed fishing season and the large deliveries by their traditional fleet. There may be entry or exit into the fishery, but the vast majority of the processing is expected to take place in Akutan or Dutch Harbor/Unalaska.

Processors will be allowed to enter the fishery if they can attract CV deliveries. The only limit would be on C/Ps that are allowed to act as a mothership. Eligible C/Ps are not limited in the amount of Pacific cod they may process as a mothership or which CVs may deliver to them. The vast majority of processing is expected to take place in Akutan and Dutch Harbor/Unalaska. Shifts in processing locations are determined by the processors with consultation and negotiation with the communities' leaders where they operate. The hurried pace of processing will create economic conditions that favor processing quickly and producing more H&G products and relatively less fillets.

Production quality is expected to be less than under the PCTC Program due to harvesting and delivery pace and the rush to process high volumes of Pacific cod by the plants.

Cost of production in the Pacific cod fishery is higher than necessary due to the need to have high levels of capacity to process peak delivery amounts.

Shorter processing season results in need to have more processing crew to handle peak processing levels.

Compliance costs are assumed to be about the same as past years and are determined by current and future monitoring and enforcement requirements.

Consolidation could occur due to low or negative profit margins in the fishery caused by the market, biological, and regulatory conditions.

AI deliveries to an AI shoreplant are less likely to occur without a set-aside or allocation to the community.

Processors will compete for deliveries of Pacific cod. The processors will compete on price and delivery terms and conditions, but the past relationships between harvesters and processors, especially those in AFA cooperatives, are expected to play a role in where CV operators deliver Pacific cod in the future.

Effects on Processors

Alternative 2a

Creates greater stability for processors by ensuring they have a certain amount of quota, and it allows them to offer incentives to their fleet that will help maintain deliveries from the fleet that had delivered to them during the qualifying years.

Most of the impacts of these elements will be the same as the No Action alternative with the exception of the impacts of the C/P processing limits on the various processing sectors and communities.

The two eligible C/Ps processing of Pacific cod as a mothership would be limited to their aggregate Pacific cod processing as a MS as a ratio of all Pacific cod processing of qualifying trawl CV deliveries. If a C/Ps allocation of QS results in a greater percentage, they would be allowed to process up to 125% of their calculated limit based on processing history. The C/P processing limit would constrain C/P to an average of their history meaning that they would not be allowed to process as great a percentage of the BSAI Pacific cod trawl CV sector apportionment as they did some years during the qualifying period, but more than other years during the period. The PCTC would eliminate their operational advantage of being close to the fishing grounds and allowing CVs to make relatively quick deliveries without being required to bleed the cod on the CV.

The C/P firm that would receive a larger limit based on processing history as opposed to LLP license QS the firm is allocated (Alternative 2b) would benefit more from this PCTC option but be worse off, in terms of a processing limit, than the No Action alternative.

Processors would be allocated 30 percent of the PCTC harvest QS. The allocation should result in more stability for processor's Pacific cod operations relative to the No Action Alternative or Alternative 2b.

Processor would hold 30 percent of the QS as a result of Element 5.4 and would hold the underlying asset value of those shares.

Processors would still need to offer sufficient CQ, a competitive ex-vessel price, or better delivery terms to retain CVs, since CVs are allowed to move between cooperatives annually.

At a 30 percent allocation to processors, processors will have difficulty offering sufficient compensation to entice additional CVs to deliver to it. The CV may determine that they can maximize profits by delivering to the old processor.

Not allocating the C season will have a minimal impact on processors overall. Processors will continue to be allowed to take deliveries from CVs that want to fish during the C season under a limited access fishery.

Past relationships between harvesters and processors, especially those in AFA cooperatives, are expected to continue to impact where CV operators deliver Pacific cod.

The ownership and use caps will not have a substantial impact on processing firms if the grandfather provision is included. Processors will be limited to the level of participation in the Pacific cod fishery they realized on average during in the recent past. A facility limit of 25 percent would be based on the total amount of CQ issued. It would allow four or fewer plants to process the entire sector allocation.

There is no processing limit at the firm level in the current suite of alternatives, so it is not included under Alternative 2a, Alternative 2b, or the PA. Not implementing a limit could allow a firm that has multiple plants to increase their processing of Pacific cod beyond historical levels, but it would be necessary to utilize plants that may be less efficient or further from the fishing grounds because of the facility cap.

Effects on Processors

Alternative 2b	<p>Creates less stability for processors than the other alternatives in terms of Pacific cod deliveries. Processors will negotiate with harvesters and compete with each other for deliveries of Pacific cod. Harvesters, especially those with no ownership or affiliation linkage with their processor, will change cooperatives depending on who is able to offer the most attractive suite of benefits.</p> <p>This option would provide processors less market power than they would have relative to either the No Action Alternative or Alternative 2a. Processors will still be allowed to enter the fishery, but only eligible C/Ps are allowed to act as a mothership. Eligible C/Ps are limited by the QS they owned 75% of as of December 31, 2019. This would allow one of the C/Ps to process more QS than they could under Alternative 2a and the two C/Ps combined to process more Pacific cod as motherships, and the C/Ps would have separate limits under both Alternative 2a and Alternative 2b.</p> <p>Production quality is expected to be similar to Alternative 2a and the PA with shorebased processors focusing on fillet production for the domestic market. C/Ps will produce lower valued H&G or round products. Depending on the relative production costs the C/Ps acting as a MS may be less competitive on ex-vessel price than shorebased processors because of the lower first wholesale prices they receive. However, one firm would be unable to process all the Pacific cod CQ that is assigned to their LLP license and would not be in the market to attract additional deliveries. The other firm would hold CQ derived from LLP licenses they hold to attract deliveries.</p> <p>Compliance costs are assumed to be higher than the No Action Alternative but about the same as Alternative 2a and the PA.</p> <p>Processors would not be allocated QS based on their processing history. Some processors will be issued QS based on the LLP licenses they own. Ownership of LLP licenses varies by firm and ranges from firms owning no LLP licenses to owning up to the limit.</p> <p>This alternative will provide processors less stability than either Alternative 2a or the PA. Processors will not be able to use a processor allocation of CQ to compensate harvesters for staying with their cooperative. As a result, ex-vessel price and other market incentives are expected to play a greater role in retaining vessels. The AFA linkages are expected to impact a CVs decision to deliver to a processor. However, the annual ability to move between cooperatives will require that a processor offer similar compensation to CVs for their Pacific cod or risk having them move to a different PCTC cooperative the following year.</p> <p>AI shoreplants would have greater control over the use of a direct allocation of 10 percent of the CQ than a set-aside controlled by other cooperatives and would likely receive greater benefits. The requirement that CVs <60' LOA using a transferable AI endorsement harvest a minimum of 25 percent of the AI shoreplant allocation would reduce the benefits the plant receives from that portion of the allocation relative to allowing the plants to select the vessels that deliver.</p> <p>Processors would not be issued QS so they would not be subject to an ownership/use cap under Element 8.3. Processors that own LLP licenses would still be subject to the smallest CQ ownership cap (10 percent of harvester CQ) and largest processing facility use cap (30 percent). The relatively small CQ ownership cap would not have a substantial impact if the grandfather provision is included.</p> <p>The largest facility use cap would allow fewer and likely more efficient plants to process the deliveries to a single firm. Processors that operate a single plant would likely continue to take deliveries at that plant and not make arrangements for another plant to process Pacific cod harvested by members of the cooperative they are associated with unless the processors had or establish a close business relationship that would allow custom processing of their Pacific cod.</p>
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Effects on Processors

**Alternative 3
(PA)**

Any processors with an FPP or FFP take deliveries of CQ if they can attract CV deliveries, except C/Ps that are allowed to act as a mothership is limited under BSAI Amendment 120. The Council selected a processing limit of 125 percent of each C/Ps historical average during the qualifying period as part of its PA. The impact of that limit is expected to fall within the range described under Alternative 2a and Alternative 2b.

The Council selected 22.5 percent of harvest shares to be allocated to processors under its PA. The impact of allocating harvest shares to processors is expected to help provide stability to the harvesting and processing sectors and create incentives for both sectors to work together so they both benefit from the program. The allocation will grant the underlying long-term asset value of those QS to the processing sector. The CVs will still increase their underlying asset value based on the QS they are allocated as will the processors. Processors could use that asset value to obtain loans or to increase the value of their operation if they sell.

As discussed under Alternative 2a some processors will also benefit from owning LLP licenses that are assigned QS, but not all. Processors that do not hold LLP licenses may be more dependent on a processor allocation of harvest shares to compete with other processors. It may also create an incentive for greater vertical integration of firms as allowed under the MSA.

The percentage of QS allocated to processors will impact the ability of harvesters to be fully compensated for changing cooperatives. For example, if processors were compensating CVs at a percentage equal to the processor allocation, harvesters may be able to re-coop percent tied to a smaller processor allocation but have a more difficult time finding a processor that would make up the difference at the upper range considered. It may also be difficult for the new processor to make up that difference in ex-vessel price or cost saving.

The 30% allocation to processors would provide greater stability than the 5% allocation, but that stability could result from CVs having fewer options to move markets. The Council determined, based in part on an industry agreement, that 22.5 percent was the appropriate amount. The Council indicated its intent to monitor how well the program is meeting its objectives by requiring annual reports as well as the program reviews required under Section 303A of the MSA.

Larger percentage allocations of harvest shares to processors that have qualifying processing history may give them a market advantage relative to processors trying to enter the fishery. The relative size of the allocation will impact the extent of the barrier. The Council determined that the 22.5 percent allocation would not unduly limit entry.

The AI set-aside will benefit the AI shoreplant(s) during years the AI set-aside is in place if it (they) can offer a competitive ex-vessel price to attract deliveries from CVs associated with cooperatives formed around BS processors. If they are unable to compensate CVs to account for the higher costs of fishing in the AI, the CVs may choose not to deliver the CQ. However, because the set-aside covers both the A and B seasons, the CVs would need to forgo harvest of the CQ if they could not reach an agreement. Any deliveries to AI shoreplants will reduce the benefits of the program for the BS processors that are not associated with the AI shoreplants.

The ownership and use caps will not have a substantial impact on processing firms if the grandfather provision is included. Processors will be limited to the level of participation in the Pacific cod fishery they realized on average during in the recent past. However, a company limit of 20 percent, even with a grandfather provision, could prevent at least one firm from increasing their processing activity in the PCTC program. The PA would be more restrictive than Alternatives 2a or 2b, which considered the limits at the plant level.

Effects on Bycatch	
Alternative 1 (No Action)	<p>Halibut and crab PSC will continue to be apportioned at the TLAS level via regulations and at the fishery level during the harvest specification process.</p> <p>Given the importance of reducing halibut PSC, the trawl CV sector will likely continue to utilize halibut PSC avoidance measures in addition to continually seeking better ways to reduce halibut PSC.</p>
Alternative 2a	<p>96% of halibut PSC allocated to trawl CVs and 4% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 377 mt for Pacific cod, the C season limit would be 57 mt, while A and B seasons limit with the 35% reduction included would be 208 mt. The remaining 112 mt of halibut PSC would stay in the water. Despite the benefit of harvest specifications and the use of pot gear to reduce halibut PSC, there is a potential that a 35% halibut PSC reduction could limit cooperatives from harvesting all their CQ during periods of high TACs.</p> <p>Factoring in a 35% reduction for the red king crab (Zone 1) PSC limit would result in 1,479 animals for cooperative fishing during A and B seasons. The use of pot gear to harvest CQ could increase the risk of cooperatives being constrained by red king crab (Zone 1) PSC limit while fishing in Zone 1 crab savings area relative to 2b but the same as Alternative 3.</p> <p>The remaining crab PSC limits factoring in a 35% reduction are likely sufficient to not constrain cooperative fishing for Pacific cod in the associated crab savings areas.</p>
Alternative 2b	<p>97% of halibut PSC allocated to trawl CVs and 3% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 379 mt for Pacific cod, a 10% reduction would be 342 mt. The remaining 37 mt of halibut PSC would stay in the water. Under this alternative, relative to Alternatives 2a and 3, cooperatives are likely to adjust to the 10% reduction in halibut PSC using the benefits of cooperative management. However, there is some potential at very high Pacific cod TAC levels that the 10% reduction could constrain some cooperatives.</p> <p>Under this alternative, crab PSC limits would continue to be apportioned at the TLAS level and therefore would likely not constrain the BSAI Pacific cod fishery for the trawl CV sector or the AFA C/P sector.</p>
Alternative 3 (PA)	<p>98% of halibut PSC allocated to trawl CVs and 2% to AFA C/Ps.</p> <p>Assuming a trawl CV sector halibut PSC limit of 382 mt for Pacific cod, the C season limit would be 19 mt, while A and B seasons limit with the 25% reduction would be 272 mt. The remaining 91 mt of halibut PSC would stay in the water. Despite the benefit of harvest specifications and the use of pot gear to reduce halibut PSC, there is a potential that a 25% halibut PSC reduction could limit cooperatives from harvesting all their CQ during periods of high TACs.</p> <p>Factoring in a 35% reduction of red king crab (Zone 1) PSC would result in 1,652 animals for cooperative fishing during A and B seasons, which could constrain the sector to fish some portion of its CQ outside Zone 1 crab savings area but less than under Alternative 2a.</p> <p>The remaining crab PSC limits factoring in a 35% reduction are likely sufficient to not constrain cooperative fishing for Pacific cod in the associated crab savings areas.</p>

Effects on other groundfish fisheries

<p>Alternative 1 (No Action)</p>	<p>Sideboards are the primary management tool. Given the continued seasonal conflicts between BSAI Pacific cod fishery and the GOA groundfish fisheries. Given these continued seasonal conflicts, it is likely harvest of GOA AFA trawl CV sideboard fisheries would continue under this alternative.</p> <p>Harvest participation and fishing practices in the BSAI TLAS fisheries for the trawl CV sector are likely to be similar to current participation and fishing practices.</p>
<p>Alternatives 2a, 2b, 3 (PA)</p>	<p>Relatively to the existing GOA AFA sideboard limits, the revised GOA AFA sideboard limits for all three action alternatives are lower compared to the existing limits due to the limited fishing activity. Although not always the case, the narrower the set of years used to determine the revised sideboard limits the smaller the revised sideboard limit.</p> <p>The alternatives also prohibit AFA GOA sideboard exempt vessels and non-AFA vessels assigned to LLP licenses with QS from leasing their CQ on the condition from benefiting from GOA sideboard exemption unless the vessel did not fish in the GOA during the calendar year (except for the CGOA Rockfish Program). This provides greater flexibility for those GOA exempt vessels that are not designed to deliver Pacific cod shoreside and have a limited offshore market.</p> <p>An option is included to allow leasing of BSAI Pacific cod CQ for GOA exempt vessels assigned to LLP licenses with less than 200 mt of average annual qualifying BSAI Pacific cod catch history for Alternative 2a and less than 600 mt of average annual qualifying BSAI Pacific cod catch history for Alternative 2b. Alternative 3 would allow leasing if the LLP license has less than 300 mt average annual qualifying BSAI Pacific cod catch history. Under Alternative 2a, 8 GOA exempt vessels had LLP licenses with less than 200 mt of average annual qualifying BSAI Pacific cod catch history, while Alternative 2b had 23 GOA exempt vessels with less than 600 mt of average annual qualifying BSAI Pacific cod catch history. Alternative 3 had 18 GOA exempt vessels with less than 300 mt of average annual qualifying BSAI Pacific cod catch history. Note that the 1% minimum threshold option in Element 2.1 that is included in Alternative 2b would eliminate all 23 of the GOA exempt vessels with less than 600 mt of average annual qualifying BSAI Pacific cod catch history.</p> <p>For other TLAS fisheries, the yellowfin sole fishery was likely the only TLAS fishery that could be impacted from the PCTC Program. However, since AFA C/Ps are already cooperatively managed the 8 trawl CVs authorized to deliver BSAI yellowfin sole to C/Ps acting as motherships will be cooperatively managed once the PCTC Program is implemented, and there is no inshore yellowfin sole market at this time, sideboard limits for 8 PCTC Program qualified trawl CVs are likely not necessary.</p>

Effects on fishing communities

Alternative 1 (No Action)

Existing patterns of community engagement in and dependency on the fishery are unlikely to fundamentally change under this alternative.

LLP license and CV ownership would remain concentrated in the Seattle MSA, Newport, and Kodiak.

Shore-based processing would remain concentrated in Unalaska/Dutch Harbor and Akutan, given their proximity to the Bering Sea fishing grounds; in Adak (when a local shore-based processor is operating), given its proximity to the AI fishing grounds; and, in more limited amounts and in some years, in King Cove and Sand Point.

Private sector support services within the BSAI region itself would remain largely concentrated in Unalaska/Dutch Harbor.

Alternatives 2a, 2b, 3 (PA)

Consolidation of CV effort in the BSAI Pacific cod trawl fishery is expected to occur under any of the action alternatives, as not all vessels owned, operated, or controlled by cooperative members that fished during the historical qualification period would be needed to efficiently harvest the cooperative quota. It is likely, however, that consolidation of vessels themselves (that is, vessels exiting all commercial fishing) would be limited by catch history being attached to the LLP license and being non-severable under all three action alternatives. For a large majority of relevant CVs, BSAI Pacific cod represents a relatively modest proportion of their overall fishing portfolio and, from a community perspective, retention of active local vessels focused on other fisheries in their annual round portfolio would be a key to minimizing adverse effects of the consolidation of CV effort in the BSAI Pacific cod trawl fishery as crew would still be employed, fish would still be delivered, and support service businesses would still have those vessels as a part of their customer base. Harvester issued QS/CQ ownership and use caps and vessel use caps, included in each of the action alternatives, would also tend to reduce quota ownership and use consolidation across communities both in Alaska and in the Pacific Northwest. Alternatives 2a and Alternative 3 contain an option (2.2.4) and suboption (7.1.1), respectively, that would protect, at least in part, those CDQ entities with ownership interests in CVs that have as a practice leased their AFA sideboarded BSAI Pacific cod history during the respective qualification periods of these two alternatives.

An important distinction for several Alaska local community fleets between the action alternatives is that under Alternatives 2a and 3, which do not include C season allocations, reallocations from the BSAI Pacific cod trawl sector to the <60' HAL and pot sector would be more likely to continue, more likely to continue at higher levels, and would occur earlier in the year than would be the case under Alternative 2b. These reallocations have accounted for a substantial portion of total reallocations received by the < 60' HAL and Pot sector and these have been particularly important for the Unalaska/Dutch Harbor community fleet. Alternatives 2a and 3 would also potentially provide more new entry opportunities than Alternative 2b. Conversely, under Alternative 2b, which includes C season allocations, those individuals, entities, and communities in Alaska and the Pacific Northwest directly engaged in BSAI Pacific cod trawl CV sector would have a greater chance to realize more of the full potential value of the existing overall sector allocation than has historically been the case under status quo conditions.

Under Alternative 2a and Alternative 3, processors would be allocated a percentage of harvest shares based on their processing history that would function to promote stability for qualifying processors. For Unalaska/Dutch Harbor and Akutan, ownership and operation of the relevant plants have been relatively stable, so changes that may take place under a CV cooperative system at the plants in those communities would likely be minor (and beneficial) from the community perspective.

The community of Adak, with a more complicated history of local shore-based processing operational ownership (and intermittent operations) is more at risk of experiencing adverse community impacts from an allocation based strictly on processing history, absent AI processor provisions under Element 6 (variations of which are included in each action alternative) that could benefit Adak, Atka, or both in any given year. Trawl-caught deliveries of BSAI Pacific cod made to the Sand Point plant during the various historical qualifying periods have been characterized by company management as occurring in relatively small amounts and typically only when their Akutan plant was otherwise at maximum capacity during peak race-for-fish conditions, circumstances that are not expected to occur under any of the action alternatives. Given the minor contribution of trawl-caught BSAI Pacific cod deliveries to the overall operations of the Sand Point plant, no adverse community level impacts are anticipated for Sand Point under any action alternatives, aside from a minor decline in city raw seafood tax and shared state fisheries business tax revenues, even if local deliveries were to be discontinued. Processing of trawl-caught BSAI Pacific cod has varied

considerably from year to year during the historical qualifying periods, but in general the value of deliveries of trawl-caught BSAI Pacific cod were modest compared to other deliveries from other fisheries accepted at the King Cove plant. One of the potentially important differences between the action alternatives from the King Cove perspective, however, would be the “drop two years” feature of Alternative 2b, which would allow the dropping of 2010 and 2014, the only two years over the 2004-2019 span when no trawl-caught BSAI Pacific cod deliveries were made to the King Cove plant. The King Cove plant, unlike the Sand Point plant, is home base for one of the AFA cooperatives, which likely would provide additional impetus for the continuation of BSAI Pacific cod CV trawl landings in the community. There is no closed class of processors under any of the action alternatives and, while potential new entrants would likely be at a competitive disadvantage under Alternative 2a and Alternative 3, as qualifying processors would be allocated a percentage of harvest shares, under Alternative 2b there would be no initial allocation of harvest shares to processors. Interest has been expressed in recent years in increasing local fishery diversification into the BSAI Pacific cod fishery in multiple CDQ communities, including Atka, St. Paul, False Pass, Nome, and Savoonga in both local harvesting and processing sectors. These communities, to varying degrees, face a range of challenges to entry in the BSAI Pacific cod CV trawl shore-based processing sector unrelated to implementation of a BSAI trawl CV cooperative program and are at different stages in potentially addressing these challenges.

Fishery support service businesses could be adversely affected by CV and/or shore-based processor consolidation of effort under a cooperative system if vessels and/or processors formerly active in the BSAI Pacific cod CV trawl fishery do not increase their participation in alternate fisheries. While the amount of BSAI Pacific cod harvested would not be directly impacted, fewer vessels involved in the harvest and fewer plants involved in the processing would equate to a lower demand for some types of support services. Many support service suppliers are in the Seattle MSA as well as in and around Newport, Oregon, including suppliers of a range of services (and a scale of services) not available in Alaska. Support services in the BSAI region itself are largely concentrated in Unalaska/Dutch Harbor. Many of the same support service businesses in Unalaska/Dutch Harbor that support the BSAI Pacific cod trawl CV fleet also support the < 60' HAL/pot fleet and could experience adverse impacts from a loss of revenue by that fleet if reallocations from the trawl sector were to decrease in frequency or amount under a cooperative system. Similar decreases in service provision demand due to consolidation of the trawl fleet or adverse impacts to the < 60' HAL/pot fleet could impact municipalities through declines in sales tax revenues or usage fees for waterfront infrastructure-based services. Similarly, municipal harbor infrastructure fee-based public revenue may decline in relation to the fewer CVs participating in the BSAI Pacific cod trawl fishery but, like support service business private sector revenues in any given community, only to the extent that those vessels no longer active in the BSAI Pacific cod trawl CV fishery due to consolidation of harvesting effort within a cooperative system are not active in other fisheries in the same area.

Given the history-based nature of the initial allocations under each of the action alternatives, no substantial shifts in patterns of fishery landings between communities are anticipated, nor are substantial shifts in the accompanying patterns of revenue accruing to municipalities in Alaska from local raw fish taxes or shared state fishery business taxes. Overall, the management of the fishery under any of the action alternatives would allow for greater predictability for fishery participants and would provide for increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions. This flexibility has the potential for decreasing vulnerability to adverse conditions and increasing resilience following adverse events or accompanying adverse trends, including adverse effects of climate change, for involved individuals, entities, and communities.

Effects on crew	
Alternative 1 (No Action)	<p>Existing trends would continue. Short seasons on crowded fishing grounds under race-for-fish conditions would continue to yield variable results for fishing crew.</p> <p>Shore-based and floating processor crews are engaged in processing BSAI Pacific cod harvested by trawl CVs for a relatively short period of time at the end of January and the beginning of February. Because the BS Pacific cod fishery currently coincides with the BS pollock fishery, some plants must employ substantially larger crews that are juggled between lines/plants to process landings from both fisheries.</p> <p>Processing landings from non-rationalized fisheries hinder the ability of plants to develop employment schedules that require fewer processing crew being brought into Alaska communities for relatively short periods of time.</p>
Alternatives 2a, 2b, 3 (PA)	<p>Fewer vessels are expected to fish for Pacific cod and that would result in a decrease in captain and crew jobs in the BSAI Pacific cod trawl CV fishery, while those jobs that do remain are expected to result in more stable employment in the Pacific cod fishery at higher overall levels compensation per crew member per season than under status quo conditions. Vessels that leave the Pacific cod fishery would likely specialize in their other fisheries that they currently participate in during the year, especially the BS pollock and GOA fisheries.</p> <p>Crew would likely work longer seasons and crew compensation per unit effort could be negatively impacted if crew shares were adjusted to cover costs of leasing harvesting quota.</p> <p>The remaining crew jobs could feature better working conditions, be safer with a discontinuation of race-for-fish conditions, provide better season-to-season employment potential, and allow for compensation predictability.</p> <p>The non-severability of quota from the LLP licenses is expected to minimize overall crew job losses, especially aboard BSAI Pacific cod trawl CVs with Alaska ownership addresses, as those vessels are primarily focused on GOA fisheries.</p> <p>Crew members on Alaska ownership address vessels that no longer participate directly in the BSAI Pacific cod fishery may still participate in other fisheries in the GOA pursued by the vessels on which they work. These crew positions may also be perceived by a substantial portion of the crew as more desirable due to fishing closer to home.</p> <p>Although the Pacific cod fishery is a relatively small portion of the processing portfolio of most of the qualified processors, the cooperative program alternatives are likely to contribute to stability in processing crew employment. This increased stability could lead to fewer processing jobs at peak times, but the remaining jobs should provide more stable and consistent employment and allow workers to move between processing different species as needed. If similar hiring conditions remain in place after a cooperative program is implemented, overtime hours would likely continue to be available to processing workers.</p>

Effects on safety	
Alternative 1 (No Action)	<p>Current BSAI trawl CV Pacific cod fishery requires vessel operators to compete for a share of the BSAI trawl CV sector apportionment of Pacific cod during a brief A season and to a lesser extent the brief B season and the C season. This can result in vessel operators fishing when conditions are poor, if others are fishing, to avoid a reduction in harvest and income. BSAI weather conditions during the A season (the end of January and beginning of February) can be unpredictable and dangerous, especially for smaller CVs.</p>
Alternatives 2a, 2b, 3 (PA)	<p>Management of the BSAI trawl CV Pacific cod fishery under the PCTC Program is expected to extend the A season from about 2-weeks at the end of January and early February to fishing the second week in February through the end of March which could improve safety at-sea by allowing vessel operators to not fish in bad weather. The B season could also be selectively fished in better weather after the end of the A season. The C season will remain a limited access fishery, but the pace of that fishery has been slow and it should continue to allow vessel operators to avoid fishing during unsafe weather conditions.</p>

Effects on Monitoring and Enforcement

Alternatives 2a, 2b, 3 (PA)	See Table 2-185 in Section 2.10.7 for a summary of the types of impacts of monitoring and enforcement requirements to implement the proposed PCTC Program.
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Effects on net benefits to the Nation

Alternatives 2a, 2b, 3 (PA)	It is expected that any PCTC Program action alternative will result in greater net benefits to the Nation compared to Alternative 1. The increase in net benefits is a result of increases in both producer and consumer surplus (see Section 2.10.11).
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3 Environmental Assessment

There are four required components for an EA. The need for the proposed action is described in Section 2.2, and the alternatives in Section 2.4. The potential impacts of the proposed action and alternatives, including the Council’s preferred alternative (PA) are described in Section 2.10 (economic and social impacts) and this section, (environmental and ecological impacts). A list of agencies and persons consulted is included in Section 5.

This section evaluates the potential direct, indirect, and cumulative impacts of the alternatives and options on the various resource components. Recent and relevant information necessary to understand the affected environment for each resource component is summarized in the relevant subsection. For each resource component, the analysis identifies the potential impacts of each alternative, and uses criteria to evaluate the significance of these impacts. If significant impacts are likely to occur, preparation of an environmental impact statement (EIS) is required. Although an EA must evaluate economic and socioeconomic impacts that are interrelated with natural and physical environmental effects, economic and social impacts by themselves are not sufficient to require the preparation of an EIS (see 40 CFR 1508.14).

The National Environmental Policy Act (NEPA) of 1978, under which this EA is prepared, also requires an analysis of the potential cumulative effects of a proposed action and its alternatives. An EA must consider cumulative effects when determining whether an action significantly affects environmental quality. The Council on Environmental Quality (CEQ) regulations for implementing NEPA define cumulative effects as:

“the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

The cumulative effects analysis captures the total effects of many actions over time that would be missed if evaluating each action individually. Concurrently, the CEQ guidelines recognize that it is most practical to focus cumulative effects analysis on only those effects that are truly meaningful.¹⁸²

3.1. Methods

For biological and physical ecosystem components (target species stocks, non-target species, marine mammals), impacts of the alternatives were evaluated in a largely qualitative manner with key data presented to support conclusions.

The analyses presented in the sections below focus on Pacific cod (Section 3.2), incidental catch (3.4), Prohibited Species Catch (PSC) (Section 3.3), and marine mammals (Section 3.5). No significant effects are presumed for ecosystem component species, seabirds, habitat, or the ecosystem, because harvest limits (TACs), habitat protections (such as closed areas), and current or proposed fishing regulations as described in previous documents (NMFS 2005; NPFMC and NMFS 2017; NPFMC 2018) would not be changed by any of the alternatives.

¹⁸² This EA/RIR is being prepared using the 1978 CEQ NEPA Regulations. NEPA reviews initiated prior to the effective date of the 2020 CEQ regulations may be conducted using the 1978 version of the regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020. This review began in 2020 and the agency has decided to proceed under the 1978 regulations.

3.1.1. Documents Incorporated by Reference in this Analysis

This EA relies heavily on the information and evaluation contained in previous environmental analyses, and these documents are incorporated by reference. The documents listed below contain information about the fishery management areas, fisheries, marine resources, ecosystem, social, and economic elements of the groundfish fisheries. They also include comprehensive analysis of the effects of the fisheries on the human environment and are referenced in the analysis of impacts throughout this section.

Alaska Groundfish Harvest Specifications Final Environmental Impact Statement (NMFS 2007).

This EIS provides decision makers and the public an evaluation of the environmental, social, and economic effects of alternative harvest strategies for the federally managed groundfish fisheries in the GOA and the BSAI management areas and is referenced here for an understanding of the groundfish fishery. The EIS examines alternative harvest strategies that comply with Federal regulations, the Fishery Management Plan (FMP) for Groundfish of the GOA, the Fishery Management Plan (FMP) for Groundfish of the BSAI Management Area, and the Magnuson-Stevens Fishery Conservation and Management Act. These strategies are applied using the best available scientific information to derive the total allowable catch (TAC) estimates for the groundfish fisheries. The EIS evaluates the effects of different alternatives on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the groundfish fisheries. This document is available from <https://alaskafisheries.noaa.gov/fisheries/groundfish-harvest-specs-eis>.

Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the BSAI (NPFMC 2020).

Annual SAFE reports review recent research and provide estimates of the biomass of each species and other biological parameters. The SAFE report includes the acceptable biological catch (ABC) specifications used by NMFS in the annual harvest specifications. The SAFE report also summarizes available information on the ecosystems and the economic condition of the groundfish fisheries off Alaska. This document is available from https://archive.fisheries.noaa.gov/afsc/refm/stocks/plan_team/2020/BSAIntro.pdf.

Assessment of the Pacific Cod Stock in the Aleutian Islands (Spies et al. 2020)

Annual stock assessments are prepared each year but stock assessment authors from NMFS science centers. They incorporate human and environmental impacts on fish stocks and provide estimates of biomass of each species and other biological parameters. The stock assessments calculate biomass and the acceptable biological catch (ABC) used by NMFS in the annual harvest specifications. This document is available from https://archive.fisheries.noaa.gov/afsc/refm/stocks/plan_team/2020/AIpcod.pdf.

Assessment of the Pacific Cod Stock in the Eastern Bering Sea (Thompson et al. 2020)

Annual stock assessments are prepared each year but stock assessment authors from NMFS science centers. They incorporate human and environmental impacts on fish stocks and provide estimates of biomass of each species and other biological parameters. The stock assessments calculate biomass and the ABC used by NMFS in the annual harvest specifications. This document is available from https://archive.fisheries.noaa.gov/afsc/refm/stocks/plan_team/2020/EBSpcod.pdf.

Final Programmatic Supplemental Environmental Impact Statement (PSEIS) on the Alaska Groundfish Fisheries (NMFS 2004).

The PSEIS evaluates the Alaska groundfish fisheries management program as a whole and includes analysis of alternative management strategies for the GOA and BSAI groundfish fisheries. The EIS is a

comprehensive evaluation of the status of the environmental components and the effects of these components on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the groundfish fisheries. A Supplemental Information Report (NPFMC and NMFS 2015) considers and affirms that new information does not indicate that there is now a significant impact from the groundfish fisheries where the 2004 PSEIS concluded that the impact was insignificant. The PSEIS document is available from <https://alaskafisheries.noaa.gov/node/33552>, and the Supplemental Information Report from <https://alaskafisheries.noaa.gov/sites/default/files/sir-pseis1115.pdf>.

EA/RIR/IRFA for Amendment 85 to the FMP for Groundfish of the BSAI: Allocation of Pacific cod among harvesting sectors (NPFMC 2007).

This analysis proposed Amendment 85 to the BSAI Groundfish FMP, recommending separate apportionments of the BSAI Pacific cod ITAC among the fixed gear sectors (HAL catcher processors, ≥60’ HAL CVs, pot catcher processors, ≥60’ pot CVs, and pot/HAL vessels less than 60’ in length), jig sector, and trawl sectors based on recent sector catch histories

3.1.2. Resource Components Addressed in the Analysis

The alternatives have the potential to affect BSAI groundfish, prohibited species, marine mammals, and social and economic components. For groundfish, increased seasonal flexibility is not likely to increase overall fishing pressure. Even if there is a redistribution of effort, the fishery will likely remain within the established footprint of the trawl fishing grounds and within the existing sector allocation of TAC into A, B, and C seasons.

In general, rationalized fisheries have been shown to be beneficial to resource components by reducing the race for fish. TACs are set annually according to established process analyzed in 2004 PEIS and fishing would stop when reached. Consequently, these alternatives are not likely to result in adverse impacts to Pacific cod stocks. PSC rates may decrease slightly from the status quo if fishing effort moves away from periods with relatively high PSC rates or the fleet implements fishing practices that are known to reduce PSC rates (i.e., eliminating night fishing and using halibut escapement devices in the fishing nets). As compared to the status quo, alternatives that include an increase in pot gear usage may have potential impacts on a portion of the western and central DPS of humpback whales in the BSAI but not in a way that may be measurable or discernable separate from all the other variables that affect fishery operations and natural variation. The action is not expected to result in population-level impacts to humpback whales. This action is not expected to result in impacts to SSL (further discussion found in section 2.9.25) since seasons remain status quo. The socio-economic impacts of the proposed action are further discussed in Section 2.10.

Table 3-1 Resources potentially affected by the proposed action and alternatives.

Potentially affected resource component							
Groundfish	Incidental Catch	PSC	Marine Mammals	Seabirds	Habitat	Ecosystem	Social and economic
Y	Y	Y	Y	N	N	N	Y*

N = no impact anticipated by each alternative on the component.

Y = an impact is possible if each alternative is implemented.

* = see SIA

An evaluation of the effects of the BSAI groundfish fisheries on the ecosystem is discussed annually in the Ecosystem Considerations sections of each chapter of the SAFE report (NPFMC 2020). The analysis concluded that the current BSAI trawl fisheries do not produce population-level impacts to marine species or change ecosystem-level attributes beyond the range of natural variation. Consequently, Alternative 1 is not expected to have a significant impact on the ecosystem. Because the target fisheries are capped by

TACs, and PSC limits in place would not be increased by this action, the action alternatives are also not expected to produce population-level impacts to marine species or change ecosystem-level attributes beyond the range of natural variation.

Under the status quo, seabird disturbance and incidental take are at low levels and are mitigated by seasonal and spatial restrictions on the BSAI Pacific cod trawl fisheries. Under the action alternatives, disturbance or incidental take is not expected to increase to a level that would result in population level effects on seabirds.

Previous analyses have found no substantial adverse effects to habitat in the BSAI caused by fishing activities (NPFMC and NMFS 2016; NPFMC and NMFS 2017). The Council's selected PA did not include flexibility to use pot gear to harvest Pacific cod quota share. Any effects continue to be limited by the amount of the groundfish TACs and by the existing habitat conservation and protection measures. Overall, the combination of the direct, indirect, and cumulative effects on habitat complexity for both living and non-living substrates, benthic biodiversity, and habitat suitability is not likely to be significant under any of the alternatives.

The Council's selected PA remains within the scope of analysis for the previous suite of alternatives. No significant effects are presumed for ecosystem component species, seabirds, habitat, or the ecosystem because harvest limits (TACs), habitat protections (such as closed areas), and current or proposed fishing regulations as described in previous documents (NMFS 2005; NPFMC and NMFS 2017; NPFMC 2018) would not be changed by any of the alternatives. Specifically, the intensity of trawling would remain unchanged because current regulations define the methods that may be used, areas in which trawling is allowed, and restrict the maximum amount of trawling to TAC levels. The timing of the fishery is not expected to change. Therefore, *de minimis* effects are expected for other resources components. As a result, further analysis is included only for BSAI groundfish, prohibited species, incidental catch, marine mammals, and social and economic components, the only resource components which the proposed action may impact.

3.1.3. Cumulative Effects Analysis

This EA analyzes the cumulative effects of each alternative and the effects of past, present, and reasonably foreseeable future actions (RFFA). Based on the alternatives have the potential to affect BSAI groundfish, prohibited species, marine mammals, and social and economic components. For groundfish, increased seasonal flexibility is not likely to increase overall fishing pressure. Even if there is a redistribution of effort, the fishery will likely remain within the established footprint of the trawl fishing grounds and within the existing sector allocation of TAC into A, B, and C seasons.

In general, rationalized fisheries have been shown to be beneficial to resource components by reducing the race for fish. Consequently, these alternatives are not likely to result in adverse impacts to Pacific cod stocks, because the existing sector allocation will remain within the TAC set each year. PSC rates may decrease slightly from the status quo if fishing effort moves away from periods with relatively high PSC rates or the fleet implements fishing practices that are known to reduce PSC rates (i.e., eliminating night fishing and using halibut escapement devices in the fishing nets). As compared to the status quo, Alternatives 2a, 2b, and 3 (PA) may have potential impacts on a portion of the western and central DPS of humpback whales in the BSAI due to an increase in the use of pot gear as a result of Element 14, but not in a way that may be measurable or discernable separate from all the other variables that affect fishery operations and natural variation. The action is not expected to result in population-level impacts to humpback whales. The socio-economic impacts of the proposed action are further discussed in Section 2.10.

Shown in Table 3-1, the resources with potentially meaningful cumulative effects are Pacific cod, incidental catch, PSC (crab and Pacific halibut), and marine mammals (humpback whales). The cumulative effects on the other resources have been analyzed in numerous documents and the impacts of

this proposed action and alternatives on those resources is minimal, therefore there is no need to conduct an additional cumulative impacts analysis for those resources.

Relevant past and present actions are described in several documents and are incorporated by reference. These include the PSEIS (NMFS 2004), the EFH EIS (NMFS 2005), the harvest specifications EIS (NMFS 2007), and the EA/RIR/IRFA to implement Amendment 85 to the BSAI FMP (NPFMC 2007). This analysis provides a brief review of the RFFAs that may affect environmental quality and result in cumulative effects. Future effects include harvest of federally managed fish species and current habitat protection from federal fishery management measures, harvests from state managed fisheries and their associated protection measures, efforts to protect endangered species by other federal agencies, and other non-fishing activities and natural events.

In addition, the supplemental information report (SIR) NMFS prepares to annually review the latest information since the completion of the Alaska Groundfish Harvest Specifications EIS is incorporated by reference (NMFS 2007). SIRs have been developed since 2007 and are available on the NMFS Alaska Region website.¹⁸³ Each SIR describes changes to the groundfish fisheries and harvest specifications process, new information about environmental components that may be impacted by the groundfish fisheries, and new circumstances, including present and reasonably foreseeable future actions. NMFS reviews the RFFAs described in the Harvest Specifications EIS each year to determine whether they occurred and, if they did occur, whether they would change the analysis in the Harvest Specifications EIS of the impacts of the harvest strategy on the human environment. In addition, NMFS considered whether other actions not anticipated in the Harvest Specifications EIS occurred that have a bearing on the harvest strategy or its impacts. The SIRs provide the latest review of new information regarding Alaska groundfish fisheries management and the marine environment since the development of the Harvest Specifications EIS and provide cumulative effects information applicable to the alternatives analyzed in this EA.

RFFAs identified as applicable to this analysis are those that are likely to have an impact on a resource component within the action area and timeframe. The term “actions” in the analyses herein is confined to human actions (e.g., a regulatory change that rationalizes the BSAI Pacific cod trawl CV fishery), as distinguished from natural events (e.g., anomalous sea surface temperatures in the Bering Sea). CEQ regulations require consideration of actions, whether taken by a government or by private persons, which are reasonably foreseeable. This requirement is interpreted to indicate actions that are more than merely possible or speculative.

In addition to these actions, the cumulative effects analysis includes the effects of climate change. The effects of climate change on the BSAI ecosystem are annually and comprehensively assessed in the various SAFE reports and are taken into consideration during the TAC-setting processes, not action by action. This action is not increasing fishing effort or putting additional pressure on the Pacific cod stock beyond what is already occurring. Rather, this action simply provides a different method for this fishery to operate under while limiting new participation.

Actions are considered reasonably foreseeable if some concrete step has been taken toward implementation, such as a Council recommendation or NMFS’s publication of a proposed rule. Actions only “under consideration” have not generally been included, because they may change substantially or may not be adopted, and so cannot be reasonably described, predicted, or foreseen. Identification of actions likely to impact a resource component within this action’s area and time frame will allow the public and Council to make a reasoned choice among alternatives.

Ecosystem management and traditional management tools are likely to improve the protection and management of target and prohibited species, including targets of the Pacific cod trawl CV fleet, Pacific

¹⁸³ <https://www.fisheries.noaa.gov/resource/document/alaska-groundfish-harvest-specifications-environmental-impact-statement-eis>

halibut and crab, and are not likely to result in significant effects when combined with the direct and indirect effects of Alternatives 2a, 2b, and 3 (PA). Other government actions and private actions may increase pressure on the sustainability of target and prohibited fish stocks either through extraction or changes in the habitat or may decrease the market through aquaculture competition, but it is not clear that these would result in significant cumulative effects. Any increase in extraction of target species would likely be offset by Federal management. These are further discussed in Sections 4.1.3 and 7.3 of the Harvest Specifications EIS (NMFS 2007) and in the 2018 SIR (NMFS 2018).

Considering the direct and indirect impacts of the proposed alternatives when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the RFFAs listed above, the cumulative impacts of the proposed alternatives are determined to be not significant.

3.2. Pacific Cod

3.2.1. Status

Pacific cod (*Gadus macrocephalus*) is widely distributed over the eastern Bering Sea (EBS) as well as the AI areas, and occurs at depths from shoreline to 500 m. Although the resource in the combined EBS and AI (BSAI) region had been managed as a single unit from 1977 through 2013, separate harvest specifications have been set for the two areas since the 2014 season. Information on Pacific cod in this section is taken from Spies et al (2020) and Thompson et al. (2020).

Figure 2-1 illustrates the federal management of Pacific cod subareas of the BSAI. Historically, the great majority of the Pacific cod catch has come from the EBS management subarea. Table 3-2 provides a history of biomass estimates for the EBS and AI management areas, as well as harvest specifications and actual catch from vessel landings attributed to the federal fishery only. Catch data from vessel landings attributed to the GHL fisheries are not included in this table. That information, along with a description of the respective fisheries, is located in Section 2.8.4 of this document. Between 2014 and 2021, TAC averaged about 94% of ABC in the EBS and 66% of the ABC in the AI, while aggregate commercial catch averaged about 97% of TAC in the EBS and 84% of the TAC in the AI. During the same period, the EBS accounted for an average of about 95% of the total BSAI catch.

The stock assessment model for Pacific cod is configured to represent the portion of the Pacific cod population inhabiting the EBS and AI survey areas. Retained incidental catch of Pacific cod in the halibut IFQ fishery is accounted for in the model, but not Pacific cod used as bait in crab fisheries. From 2014 through 2021, the average biomass distribution was about 91% in the EBS and about 9% in the AI.

Table 3-2 EBS and AI Pacific cod biomass, catch, TAC, ABC, and OFL from 2014 through 2021.

Area	Year	Biomass	OFL	ABC	TAC	Catch*
Eastern Bering Sea	2014	1,095,270	299,000	255,000	246,897	230,713
	2015	1,109,115	346,000	255,000	240,000	224,830
	2016	986,013	390,000	255,000	238,680	231,531
	2017	643,953	284,000	239,000	223,704	222,802
	2018	506,943	238,000	201,000	188,136	186,692
	2019	516,910	216,000	181,000	166,475	164,098
	2020	824,000	191,386	155,873	141,799	141,565
	2021	694,700	147,949	123,805	111,380	36,586
Aleutian Islands	2014	71,694	20,100	15,100	6,997	6,152
	2015	75,519	23,400	17,600	9,422	9,056
	2016	79,548	23,400	17,600	12,839	12,364
	2017	80,120	28,700	21,500	15,695	12,257
	2018	80,696	28,700	21,500	15,695	14,719
	2019	81,272	27,400	20,600	14,214	12,941
	2020	80,700	27,400	20,600	14,214	7,484
	2021	80,700	27,400	20,600	13,796	1,243

Note: Biomass values for the EBS are from trawl surveys in the EBS. Biomass values for the AI are modeled in Thompson et al. 2020. All values are in tons.

Source: CAS; queried on March 1st, 2021.

* catch data does not include catch attributed to the GHL fishery

The authors of the 2019 EBS Pacific cod stock assessment (Thompson and Thorson 2019) noted some concerns about the recent decline in biomass in the EBS. The authors offered several possible explanations for this decline including a northward range shift into the northern Bering Sea and poor recruitment from the 2014 – 2017 year classes. However, as detailed in the 2020 SAFE report (NMFS 2020), the EBS stock of Pacific cod is not being subject to overfishing, is not overfished, and is not approaching an overfished condition. For the AI stock of Pacific cod, the 2020 SAFE report determined that the stock is not being subjected to overfishing. However, because the stock is managed as a Tier 5 stock, no determination can be made with respect to overfished status. A stock’s Tier status refers to the type and amount of information that is available to estimate the condition and maximum sustainable yield (MSY) of the stock. A Tier 5 stock refers to a stock with insufficient information to estimate the MSY stock level. Therefore, no determination can be made of overfished status or approaching overfish status.

The BSAI Pacific cod TAC is allocated by regulation according to gear type; however, typically as the harvest year progresses, it becomes apparent that one or more gear types will be unable to harvest their full allotment by the end of the year. This is addressed by reallocating TAC between gear types in the second half of each year, typically October through December. Most often, such reallocations shift TAC to the HAL/pot CV less than 60’ sector and the HAL C/P sector. Further information on these allocations and reallocations is provided in Section 2.6.2.

Major trends in the most important prey or predator species of Pacific cod could be expected to affect the dynamics of the species to some extent. Small Pacific cod feed mostly on invertebrates, while large Pacific cod are mainly piscivorous. Pacific cod prey on polychaetes, amphipods, crangonid shrimp, walleye pollock, fishery offal, yellowfin sole, and crustaceans. Predators of Pacific cod include Pacific cod, halibut, salmon shark, northern fur seals, Seller sea lions, harbor porpoises, various whale species, and tufted puffin.

3.2.2. Effects of the Alternatives

Alternative 1

The effects of the BSAI Pacific cod fishery on the EBS and AI Pacific cod stocks is assessed annually in the BSAI SAFE report (NMFS 2020) and was also evaluated in the Alaska Groundfish Fisheries Harvest Specifications EIS (NMFS 2007a). Table 3-3 describes the criteria used to determine whether the impacts on target fish stocks are likely to be significant. The effects of the BSAI trawl fisheries on fish that are

caught incidentally have been comprehensively analyzed in the Alaska Groundfish Fisheries Harvest Specifications EIS (NMFS 2007). These analyses concluded that under the status quo, neither the level of mortality nor the spatial and temporal impacts of fishing on fish species or prey availability are likely to jeopardize the sustainability of the target and ecosystem component fish populations. As a result, impacts on Pacific cod under the status quo alternative are determined not to be significant.

Table 3-3 Criteria used to determine significance of effects on Pacific cod.

Effect	Criteria			
	Significantly Negative	Insignificant	Significantly Positive	Unknown
Fishing mortality	Changes in fishing mortality are expected to jeopardize the ability of the stock to sustain itself at or above its MSST (minimum stock size threshold)	Changes in fishing mortality are expected to maintain the stock's ability to sustain itself above MSST	Changes in fishing mortality are expected to enhance the stock's ability to sustain itself at or above its MSST	Magnitude and/or direction of effects are unknown
Stock Biomass: potential for increasing and reducing stock size	Reasonably expected to jeopardize the capacity of the stock to yield sustainable biomass on a continuing basis.	Reasonably expected not to jeopardize the capacity of the stock to yield sustainable biomass on a continuing basis.	Action allows the stock to return to its unfished biomass.	Magnitude and/or direction of effects are unknown
Spatial or temporal distribution	Reasonably expected to adversely affect the distribution of harvested stocks either spatially or temporally such that it jeopardizes the ability of the stock to sustain itself.	Unlikely to affect the distribution of harvested stocks either spatially or temporally such that it has an effect on the ability of the stock to sustain itself.	Reasonably expected to positively affect the harvested stocks through spatial or temporal increases in abundance such that it enhances the ability of the stock to sustain itself.	Magnitude and/or direction of effects are unknown

Alternatives 2a, 2b, and 3 (PA)

These alternatives each propose a series of options for establishing and managing a limited access privilege program for vessels participating in the BSAI Pacific cod trawl CV sector. Since fishing effort under the alternatives, including the PA, will remain relatively consistent with current fishing patterns, these actions are not likely to substantially alter fishing patterns and the current effects of fishing on Pacific cod.

The overall amount of effort in the fisheries will remain the same as under Alternative 1, as the overall Pacific cod TAC is not affected under either alternative. Shifts in the location or timing of fishing may occur as a result of the PA. However, there is already considerable interannual variability in the patterns of fishing across the BSAI groundfish sectors, as environmental conditions and avoidance of PSC species have caused vessels to adjust their fishing patterns. Any shift in fishing is unlikely to occur outside of the existing footprint of the groundfish fishery in the BSAI. As a result, the PA is not expected to jeopardize the sustainability of Pacific cod, and thus will not result in a significant impact.

Cumulative Effects on Target Species

Considering the direct and indirect impacts of the Council's recommended PA when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the reasonably foreseeable future actions listed above, the cumulative impacts of the proposed action are determined to be not significant.

3.3. Prohibited Species Catch in the Pacific Cod Target Fishery

3.3.1. Status

Incidental catch of prohibited species by the Pacific cod trawl and pot fisheries, halibut and crab, is described in Section 2.8.7 and Section 2.9.14. There are also various ESA-listed salmon and steelhead that may range into the BSAI groundfish management area. Catch of salmon and herring by the Pacific cod fisheries is very slight, however. Prohibited species catch limits for halibut (HAL and trawl) and crab (trawl and pot) constrain incidental catch, and attainment of these seasonal limits closes the target fisheries. Bycatch in the Pacific cod fishery is accounted for in species stock assessments.

As discussed in Section 2.9.3.1 of this document, Amendment 111 to the BSAI FMP established the current halibut PSC limits in the BSAI groundfish fisheries. Halibut PSC assigned to the TLAS, which is composed of the trawl CV sector and the AFA C/P sector, is further divided by fishery, with 391 mt (52.5 percent) of the TLAS allocation designated for use in the BSAI Pacific cod fishery (see Table 2-102 for complete breakdown of halibut PSC limits for the BSAI TLAS).

Table 2-104 provides the halibut PSC limit apportioned for the BSAI Pacific cod fishery for all trawl sectors from 2004 through 2007 and to the BSAI Pacific cod fishery for the TLAS from 2008 through 2020. Table 2-104 also provides reported halibut mortality in the BSAI Pacific cod target fishery for the trawl CV sector and the AFA C/P sector. As seen from Table 2-83, the trawl CV sector accounted for 98 percent of the total halibut mortality utilized by the trawl CV and AFA C/P sectors in the BSAI Pacific cod target fishery from 2004 through 2020, while the AFA C/P sector accounted for 3 percent of the halibut mortality¹⁸⁴.

For crab PSC, which includes red king crab (Zone 1), *C. opilio* Bycatch Limitation Zone (COBLZ), and *C. bairdi* (Zone 1 and Zone 2), PSC limits are established for the TLAS (see Figure 2-7 and Figure 2-8). Like halibut, crab PSC limits are further apportioned by directed fishery. If a specific crab bycatch cap is reached by the TLAS in any fishery, the vessels subject to that limit would be required to move out of the applicable crab savings area when participating in a fishery subject to that PSC limit.

Section 2.9.3.1 of this document also provides a detailed description of crab PSC in the BSAI Pacific cod trawl fishery. Table 2-105, Table 2-106, Table 2-107, and Table 2-108 provide the crab PSC limit apportioned to the Pacific cod fishery for all trawl sectors from 2004 through 2007 and the TLAS from 2008 through 2019. These tables also provide reported crab mortality in the BSAI Pacific cod target fishery for the trawl CV sector and the AFA C/P sector. Overall, the combined annual crab mortality for both trawl CV and AFA C/P sectors is significantly lower than the crab PSC limits for the BSAI Pacific cod TLAS.

Element 14 of the Council's motion includes a provision that would allow some portion of the BSAI Pacific cod trawl CV CQ to be fished by vessels using pot gear. Unlike the trawl fishery which generally encounters low levels of crab PSC; the pot fishery has historically taken more crab PSC in the BSAI. Section 2.8.7.5 of this document provides a detailed description of the crab PSC in the BSAI Pacific cod pot CV \geq 60 ft fishery. Table 2-36 provides the crab PSC limit and crab mortality in the BSAI Pacific cod pot CV \geq 60 ft fishery from 2004-2021. The following sections describes the plausible impacts of Element 14 on PSC species in the BSAI. **Ultimately, the Council recommended a PA that did not include gear conversion, however analysts kept the discussion of the suite of alternatives intact.**

3.3.2. Effects of the Alternatives

Alternative 1

¹⁸⁴ The calculated percentages were 97.5 percent CV and 2.5 percent C/P. As a result of rounding to the nearest whole number, the two numbers sum to 101 percent.

Prohibited species catch limits for halibut were analyzed in the analysis for Amendment 111 BSAI FMP (NMFS 2016). Further, annual halibut and crab PSC limits are evaluated annually through the Council's harvest specifications process. These analyses concluded that the status quo fishery does not have a significant impact on these species. Further, the Groundfish PSEIS (NOAA 2004), and the Harvest Specifications Environmental Assessment (NMFS 2007) both conclude that these species are at sustainable population levels and are unlikely to be subject to overfishing under the current, risk-averse management program. As a result, impacts on these species under Alternative 1, status quo, are not significant. However, Alternative 1 does not meet the Council's stated purpose and need for this action. Further, PSC limits would remain unchanged under Alternative 1 while all other alternatives considered under this action would result in an overall reduction in PSC limits for one or more species. That being the case, while impacts on PSC species under Alternative 1 are not significant, Alternative 1 is likely the least beneficial to PSC species relative to the suite of alternatives.

Alternative 2a

Alternative 2a proposes a series of options for establishing and managing a limited access privilege program for vessels participating in the BSAI Pacific cod trawl CV sector. Under Alternative 2a - Element 3, the annual halibut PSC available to the BSAI trawl CV Pacific cod limited access sector would 1) establish trawl CV cod halibut PSC apportionment based on historic use of halibut by the trawl CV sector and AFA C/P sector using the 2014-2019 qualifying years, 2) establish trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV and the AFA C/P sectors, 3) reduce halibut and crab PSC apportionment to BSAI trawl CV Pacific cod sector by 35%, and 4) establish a separate C season halibut and crab PSC apportionment at 15% before applying PSC limit reduction.

Under Alternative 2a - Element 14, Pacific cod CQ associated with trawl CV LLP licenses may be fished annually by a CV using pot gear. Pot CVs harvesting CQ would be subject to 100% coverage and PSC used would be deducted from the PSC allocated to the cooperatives.

Section 2.8.14 describes a range of PSC rate changes that may arise as a result of the gear conversion provision laid out under Element 14. Table 2-162, Table 2-163, and Table 2-165 show that while the use of pot gear may help reduce take of halibut PSC, pot gear has historically resulted in large amounts of crab mortality in total and the crab bycatch rate in the BSAI Pacific cod fishery using pot gear is higher relative to non-pelagic trawl gear. Based on the information presented in those tables, using pot gear to harvest BSAI Pacific cod CQ could result in lower amounts of halibut PSC but higher amounts of crab PSC relative to trawl gear harvesting the same amount of CQ.

To understand the potential impacts of this alternative on PSC species, we compared the trawl CV sector PSC composition from 2015 to 2020 with that of the BSAI Pacific cod pot CV ≥ 60 ft sector with several caveats to assess what the potential increase in effort using pot gear would look like under Element 14:

- We chose to focus on the pot CV ≥ 60 ft sector because of the requirement that any vessel participating in the PCTC Program would be subject to monitoring provisions, including 100% observer coverage. Following that logic, analysts made an assumption that smaller vessels would be less likely to participate in the PCTC Program because they may have difficulty accommodating an observer onboard.
- In the paragraphs below, we talk about allocation changes between the trawl CV sector and pot CV ≥ 60 ft sector. We do this only for the purpose of illustrating how PSC catch could change as a result of the gear conversion provision. None of the alternatives being considered would change the allocations of Pacific cod for the trawl CV or pot CV sectors.
- We assumed that as more CQ is used to fish with pot gear; we would see a proportional decrease in the catch of PSC species with trawl gear. Table 3-4 shows a range of PSC scenarios which show how PSC could decrease in the trawl CV fishery as more CQ is fished with pot gear. For

more information please refer to Table 2-17 in Section 2.8.7.1 which shows the BSAI Pacific cod trawl CV sector PSC.

Table 3-4 PSC in the BSAI Pacific cod trawl CV sector as a result of a range of trawl CQ conversion (by percentage) to pot gear harvest. Values are based off of the 2015 to 2020 average PSC catch shown in Table 2-17. Halibut values are in MT while crab and salmon values are in individuals.

PSC Species	PSC catch in trawl CV sector after CQ reduction				
	0.5%	1%	5%	10%	20%
Halibut mortality (mt)	240.1	238.9	229.3	217.2	193.1
Red King crab (Zone 1)	328.4	326.7	313.5	297.0	264.0
<i>C. bairdi</i> (Zone 1)	4,365.4	4,343.5	4,168.0	3,948.6	3,509.9
<i>C. bairdi</i> (Zone 2)	1,699.1	1,690.6	1,622.3	1,536.9	1,366.1
<i>C. opilio</i> PSC (COBLZ)	699.8	696.3	668.2	633.0	562.7
Chinook	1,042.1	1,036.9	995.0	942.6	837.9
Non-chinook	111.3	110.7	106.2	100.7	89.5

Subtracting the 2015 to 2020 average PSC catch (Table 2-17) from the values in Table 3-4 provides the actual decrease in PSC catch that results from each scenario (Table 3-5).

Table 3-5 Resulting decrease in PSC in the BSAI Pacific cod trawl CV sector as a result of a range of trawl CQ conversion to pot gear harvest. Halibut values are in MT while crab and salmon values are in individuals.

PSC Species	Decrease in PSC in trawl CV sector				
	0.5%	1%	5%	10%	20%
Halibut mortality (mt)	-1.21	-2.41	-12.07	-24.13	-48.27
Red King crab (Zone 1)	-1.65	-3.30	-16.50	-33.00	-66.00
<i>C. bairdi</i> (Zone 1)	-21.94	-43.87	-219.37	-438.73	-877.47
<i>C. bairdi</i> (Zone 2)	-8.54	-17.08	-85.38	-170.77	-341.53
<i>C. opilio</i> PSC (COBLZ)	-3.52	-7.03	-35.17	-70.33	-140.67
Chinook	-5.24	-10.47	-52.37	-104.73	-209.47
Non-chinook	-0.56	-1.12	-5.59	-11.18	-22.37

Table 2-37 in Section 2.7.7.5 shows PSC species harvested in the BSAI Pacific cod pot CV \geq 60 ft fishery from 2004 to 2021. We assumed that as more CQ is used to fish with pot gear; we would see a proportional increase in the catch of PSC species with pot gear. We assumed that vessels using trawl CQ to fish with pot gear would choose to fish under the existing footprint of the BSAI Pacific cod pot CV \geq 60 ft sector (i.e., same location and timing). To understand the resulting increase in PSC under this alternative, we proportionally increased PSC from the Pacific cod CV \geq 60 ft fishery using the range of scenarios provided above under the trawl CV fishery. We also point out the difference in the relative contribution of sector allocations between the trawl CV and pot CV sectors: Because the annual harvest allocation of Pacific cod for the trawl CV sector (37,761 mt used as the 2015 to 2020 average) is larger than the allocation for the pot CV \geq 60 ft sector (13,038 mt used as the 2015 to 2020 average) any transfer of CQ from the trawl sector will disproportionately increase the amount of harvest effort available to the pot CV \geq 60 ft sector, which would subsequently increase mortality of PSC species in the pot sector. For example, if 1% of the trawl CV sector allocation was used to fish with pot gear that would be the equivalent of an increase of 2.9% in allocation for the pot CV \geq 60 ft sector. Again, the analysts understand that this action will not actually change the allocations of Pacific cod for any sector. We are

only describing it this way to be illustrative of potential impacts for purposes of the Environmental Assessment. In addition to constraints by PSC, there are several other factors to consider when making assumptions about the potential impacts of Element 14 and the inclusion of pot gear into the PCTC Program:

- A list of both trawl and pot CVs eligible to harvest a portion of the cooperative’s CQ must be identified in the annual cooperative application. If a pot vessel is not included in the cooperative application list, the vessel cannot harvest cooperative CQ. Members can change cooperatives and the vessels used to harvest CQ annually can also change cooperatives. If PCTC Program participants experience very high levels of PSC due to pot gear, cooperatives may consider decreasing the rate of effort by pot vessels.
- If halibut PSC mortality limits are reached at the sector level, the PCTC Program would be closed for the season and all cooperatives would lose their ability to fish their CQ for the remainder of the season. If a cooperative reaches its halibut mortality limit, the vessels in that cooperative would be prohibited from fishing CQ unless they obtained available halibut PSC from another PCTC cooperative. If crab PSC limits are reached, the cooperative or sector would be prohibited from fishing inside the area closed by the PSC limit, depending on whether crab is allocated to cooperatives or remains a program level limit.

Table 3-6 shows a range of PSC scenarios which show how PSC could increase in the pot CV \geq 60 ft sector, holding all other factors constant.

Table 3-6 PSC in the BSAI Pacific cod pot CV \geq 60 ft sector as a result of a range of trawl CQ conversion to pot gear harvest. Values are based off of the 2015 to 2020 average PSC shown in Table 2-17. Halibut values are in MT while crab and salmon values are in individuals. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV \geq 60 ft sector).

PSC Species	PSC in pot CV \geq 60 ft sector after CQ reduction				
	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	0.6	0.6	0.6	0.7	0.9
Red King crab (Zone 1)	11,628	11,800	13,130	14,792	18,106
<i>C. bairdi</i> (Zone 1)	70,183	71,221	79,250	89,286	109,289
<i>C. bairdi</i> (Zone 2)	12,458	12,643	14,068	15,849	19,400
<i>C. opilio</i> PSC (COBLZ)	240.1	243.7	271.2	305.5	374.0
Chinook	0.0	0.0	0.0	0.0	0.0
Non-chinook	0.0	0.0	0.0	0.0	0.0

Subtracting the 2015 to 2020 average PSC catch (Table 2-36) from the values in Table 3-6 provides the actual increase in PSC that results from each scenario (Table 3-7). We did not include the red king crab (Zone 1) PSC from 2018.¹⁸⁵ We have included summary tables similar to those shown below that do include the red king crab (Zone 1) PSC catch from 2018 in Appendix 8.5.

¹⁸⁵ During 2018, several Pacific cod pot fishing vessels encountered anomalously high numbers of red king crab over the course of several hauls and when extrapolated to the fleet, resulted in a very high PSC amount in 2018. We treated this “lightning strike” event as an outlier and did not include 2018 when we averaged red King crab (Zone 1) PSC.

Table 3-7 Resulting increase in PSC in the BSAI Pacific cod pot CV ≥ 60 ft sector as a result of a range of trawl CQ conversion to pot gear harvest. Halibut values are in MT while crab and salmon values are in individuals. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

PSC Species	Increase in PSC catch in pot cod CV ≥ 60 ft CV sector				
	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	0.01	0.02	0.08	0.16	0.32
Red King crab (Zone 1)	161	333	1,663	3,325	6,639
<i>C. bairdi</i> (Zone 1)	969	2,007	10,036	20,072	40,075
<i>C. bairdi</i> (Zone 2)	172	356	1,782	3,563	7,114
<i>C. opilio</i> PSC (COBLZ)	3	7	34	69	137
Chinook	0.00	0.00	0.00	0.00	0.00
Non-chinook	0.00	0.00	0.00	0.00	0.00

By adding together the values in Table 3-5 and Table 3-7 we arrive at an estimation of PSC that would accrue against the BSAI Pacific cod trawl PSC limit (Table 3-8).

Table 3-8 Total hypothetical PSC harvest by the BSAI Pacific cod trawl CV sector as a result of the gear conversion scenarios. Halibut values are in MT while crab and salmon values are in individuals. Values are generated by added the values of Table 3-5 to the values of Table 3-7. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

PSC Species	BSAI Trawl CV Sector PSC as a result of gear conversion scenarios.				
	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	-1.20	-2.40	-11.99	-23.97	-47.94
Red King crab (Zone 1)	159	329	1,647	3,295	6,578
<i>C. bairdi</i> (Zone 1)	938	1,945	9,723	19,447	38,824
<i>C. bairdi</i> (Zone 2)	168	348	1,739	3,477	6,942
<i>C. opilio</i> PSC (COBLZ)	-0.20	-0.17	-0.83	-1.65	-3.54
Chinook	-5.24	-10.47	-52.37	-104.73	-209.47
Non-chinook	-0.56	-1.12	-5.59	-11.18	-22.37

PSC limits for the BSAI Pacific cod trawl CV sector are listed in Table 2-101. Under Alternative 2a, halibut and crab PSC limits would be reduced by 35% resulting in the PSC limits shown in Table 3-9. Looking at Table 3-8, the trawl CV sector would exceed its red king crab (Zone 1) PSC limit if approximately 5% (4.5% specifically) of the CQ was fished with pot gear, which would result in the closure of the area (Zone 1) to fishing. While some crab PSC take may increase, Table 3-8 shows that halibut and salmon PSC could decrease. While the number of vessels that will ultimately use the gear conversion provision, if any, is unknown; if the crab or halibut PSC limit is reached, the area/fishery would be closed. Because this alternative would decrease PSC limits relative to status quo, and the fishery would be forced to move out of Zone 1 if that limit was exceeded, the effects of Alternative 2a on PSC species are not likely to be significant.

The analysts point out that had we included the red king crab (Zone 1) PSC from 2018, the PSC limit would have been exceeded if approximately 1% (1.1% specifically) of the CQ was fished with pot gear. Throughout the rest of the EA, we use a threshold of 4.5% (average without 2018 data) to analyze the possible impacts of this action on the environment to err on the side of conservation.

Table 3-9 Halibut and crab PSC limits specified for the BSAI Pacific cod trawl CV sector for 2021 and the resulting PSC limits as a result of the 35% reduction proposed under Alternative 2a. Halibut values are in MT while crab and salmon values are in individuals.

PSC Species	2021 PSC Limit	Alternative 2a Limits
Halibut mortality (mt)	288	159
Red King crab (Zone 1)	2,675	1,478
<i>C. bairdi</i> (Zone 1)	54,342	30,024
<i>C. bairdi</i> (Zone 2)	45,285	25,020
<i>C. opilio</i> PSC (COBLZ)	75,118	41,503

Alternative 2b

Alternative 2b proposes a series of options for establishing and managing a limited access privilege program for vessels participating in the BSAI Pacific cod trawl CV sector. Under Alternative 2b – Element 3, halibut and crab PSC would 1) be apportioned based on historic use of halibut by the trawl CV sector and AFA C/P sector using the 2004-2019 qualifying years, 2) crab PSC would be maintained at the BSAI TLAS level and 3) halibut PSC apportionment to BSAI trawl CV cod sector would be reduced by 10%. Under Alternative 2b, gear conversion (Element 14) would remain prohibited.

Under this alternative, the halibut PSC limit would be reduced relative to status quo, while crab PSC would remain unchanged. The BSAI Pacific cod trawl CV sector and AFA C/P sector have remained within their PSC apportionment during the years that are being considered. As such, the average usage that is calculated for this timeframe will not exceed the current PSC limits for the sector. The choice to reduce the halibut PSC limit for the BSAI Pacific cod trawl CV sector by 10 percent may put increased pressure on vessels operating in the fishery but will likely have a beneficial impact on halibut owing to reduced halibut mortality. As a result, impacts on halibut under Alternative 2b are not expected to be significant.

Alternative 3 (PA)

Alternative 3 (PA) proposes a series of options for establishing and managing a limited access privilege program for vessels participating in the BSAI Pacific cod trawl CV sector. Under Alternative 3 - Element 3, the annual halibut PSC available to the BSAI trawl CV Pacific cod limited access sector would 1) establish trawl CV cod halibut PSC apportionment based on historic use of halibut by the trawl CV sector and AFA C/P sector using the 2014-2019 qualifying years, 2) establish trawl crab PSC apportionment based on the proportion of BSAI Pacific cod allocated to the trawl CV and the AFA C/P sectors, 3) reduce halibut and crab PSC apportionment to BSAI trawl CV Pacific cod sector by 25% and 35%, respectively, and 4) Establish a separate C season halibut and crab PSC apportionment at 5% before applying PSC limit reduction.

Under Alternative 3 - Element 14 was not selected. Pacific cod CQ associated with trawl CV LLP licenses may not be fished annually by a CV using pot gear.

Generally, rationalized fisheries have generally produced less bycatch and take of PSC species when compared to fisheries that are not rationalized. The rationale being that removing the “race to fish” incentive allows vessels flexibility to fish when chances of encounters with PSC species is lower. The scenario we present in this section should be viewed as a “worst case” scenario when assessing possible impacts on PSC species as a result of this action for these reasons:

- The PCTC Program is in both the BS and AI. Most of the PSC limits are from areas in the BS, meaning that vessels may fish in the AI, providing more flexibility to avoid hotspots or areas of concerns for PSC species.
- Similar to other catch share programs, cooperatives would conduct fishing activities to avoid any closures due to PSC limit overages and have the tools to coordinate with their fleet to avoid these scenarios. Cooperative management and monitoring provisions have proven to be an excellent way to manage fishing activity and avoid hitting PSC limits in real time. Vessels have time to react and communicate with the rest of the cooperative.
- Within Element 3, the PA specifies an eventual reduction in crab PSC limits, which could in turn limit the amount of vessels using pot gear.

Cumulative Effects on PSC

Based on the preceding analysis, the impacts of this proposed action and the PA, that were analyzed, on all resources are either non-existent or de minimus; therefore, there is no need to conduct an additional cumulative impact analysis.

3.4. Incidental Catch in the Pacific Cod Target Fishery

3.4.1. Status

In Table 3-10, distribution of catch by trawl vessels is shown by season and species. Trawl vessels have a higher rate of incidental catch, of which some is retained.

Table 3-10 Incidental species in the BSAI Pacific cod trawl fishery, 2015-20

	2015			2016			2017			2018			2019			2020		
	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch	Retained Catch (MT)	Total Catch (MT)	Retained Catch as % of Total Catch
GROUNDFISH (NOT TARGETED)	940.7	1,983.2	47%	881.1	2,283.9	39%	910.4	1,636.7	56%	750.3	1,902.8	39%	1,168.6	2,174.1	54%	555.0	1,079.0	51%
Arrowtooth Flounder	3.8	139.8	3%	39.6	174.9	23%	10.1	64.5	16%	24.8	106.4	23%	128.2	197.0	65%	7.7	34.1	23%
Atka Mackerel	0.0	3.7	1%	3.3	89.6	4%	154.8	156.4	99%	0.4	3.4	11%	0.1	0.5	21%	-	-	-
BSAI Alaska Plaice	1.6	2.1	77%	4.1	8.1	51%	8.2	12.0	69%	0.8	6.0	13%	49.4	55.6	89%	9.5	12.0	79%
BSAI Kamchatka Flounder	0.0	5.4	0%	1.1	1.9	57%	1.0	3.3	29%	0.2	5.3	4%	6.4	16.2	39%	0.0	0.5	0%
BSAI Other Flatfish	0.8	91.0	1%	14.5	134.7	11%	10.1	43.0	23%	13.2	65.7	20%	11.8	138.9	9%	9.2	87.6	11%
BSAI Rougheye Rockfish	-	-	-	-	-	-	0.0	0.0	86%	0.0	0.1	0%	-	-	-	0.0	0.1	0%
BSAI Skate	27.6	168.3	16%	23.5	237.1	10%	73.0	299.8	24%	124.9	285.3	44%	53.6	237.5	23%	32.2	204.0	16%
Flathead Sole	9.1	102.2	9%	27.3	124.6	22%	17.1	103.8	17%	43.0	100.5	43%	83.1	148.4	56%	37.8	85.2	44%
Greenland Turbot	0.0	0.3	0%	0.0	0.1	0%	-	-	-	0.0	3.7	0%	2.0	2.0	99%	0.0	0.2	0%
Northern Rockfish	0.2	4.7	3%	3.8	7.1	54%	1.7	15.2	11%	1.2	9.9	12%	7.3	26.7	27%	-	-	-
Octopus	3.4	5.6	61%	0.5	0.7	63%	0.1	10.8	1%	0.5	14.2	4%	0.1	0.6	15%	0.1	0.6	15%
Other Rockfish	0.2	5.7	4%	0.9	4.5	21%	0.4	0.4	100%	0.0	2.0	2%	0.2	8.3	2%	-	-	-
Pacific Ocean Perch	0.1	4.1	3%	4.2	6.5	65%	6.3	7.4	85%	0.2	2.1	10%	0.1	0.9	8%	-	-	-
Pollock	753.5	1,000.7	75%	535.3	854.5	63%	323.9	426.7	76%	389.8	830.0	47%	548.6	796.9	69%	299.7	394.4	76%
Rock Sole	136.2	441.5	31%	211.6	623.4	34%	268.3	439.5	61%	147.1	450.7	33%	169.2	407.4	42%	83.3	125.6	66%
Sablefish	0.0	0.1	0%	0.0	0.0	100%	0.0	1.2	2%	0.0	2.8	1%	0.0	1.4	0%	0.1	3.0	3%
Shark	0.0	0.5	1%	0.0	0.0	100%	0.0	1.2	2%	0.0	0.0	100%	0.0	0.6	1%	-	-	-
Yellowfin Sole	4.2	7.7	55%	11.2	16.0	70%	35.2	51.4	69%	4.0	14.6	28%	108.6	135.3	80%	74.0	79.0	94%
ECOSYSTEM & NONTARGET OTH	1.5	359.0	1%	4.0	500.5	1%	3.0	224.6	2%	2.8	294.9	1%	3.1	189.2	2%	1.4	62.3	2%
INCIDENTAL CATCH SUMMARY	942.2	2,342.2	48%	885.1	2,784.4	40%	913.4	1,861.4	57%	753.1	2,197.7	41%	1,171.8	2,363.3	56%	556.4	1,141.3	49%

Source: NMFS Catch Accounting System

Note: Nontarget other and ecosystem components including misc. crabs, bivalves, seastars, jellyfish, squid, and sculpins, etc.

As described above, Element 14 of the Council's motion includes a provision that would allow some portion of the BSAI Pacific cod trawl CV CQ to be fished by vessels using pot gear. In this section we will provide an analysis similar to that done for the incidental take of PSC species in Section 3.3. As such, here we provide the distribution of catch by BSAI Pacific cod pot CV \geq 60 ft vessel by year and species (Table 3-11).

Generally, vessels targeting Pacific cod in the BSAI catch non-targeted groundfish, ecosystem species, and forage fish incidentally. Typically, incidental harvest in a directed fishery are limited by MRAs, which are discussed in Section 2.9.2.7.

Table 3-11 Incidental species in the BSAI Pacific cod pot CV ≥ 60 ft fishery, 2015-20

	2015			2016			2017			2018			2019			2020		
	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total	Retained Catch (MT)	Total Catch (MT)	Catch as % of Total
GROUNDFISH (NOT TARGETED)	55.2	429.6	13%	70.1	639.0	11%	43.8	352.9	12%	196.4	592.1	33%	92.5	790.2	12%	61.3	334.7	18%
Arrowtooth Flounder	0.0	0.3	1.3%	0.0	1.1	2%	0.0	1.2	0%	0.0	0.5	1%	10.5	12.4		0.0	0.3	0%
Atka Mackerel	0.1	6.3	1.0%	0.7	8.9	8%	0.1	2.1	4%	0.2	12.8	2%	0.3	5.2	7%	0.9	2.2	43%
BSAI Kamchatka Flounder	0.0	0.0	0.0%	-	-	-	0.0	0.0	0%	0.0	0.1	0%	0.0	0.0	0%	0.0	0.1	0%
BSAI Other Flatfish	0.0	0.1	0.0%	0.0	2.6	1%	0.2	19.3	1%	2.2	2.9	77%	7.3	44.3	16%	0.0	37.3	0%
BSAI Shortraker Rockfish	-	-	-	-	-	-	-	-	-	-	-	-	0.0	0.1	0%	-	-	-
BSAI Skate	-	-	-	-	-	-	-	-	-	0.0	0.0	0%	-	-	-	-	-	-
Flathead Sole	0.1	0.1	57.0%	0.3	0.7	45%	0.7	0.7	100%	1.1	1.1	94%	2.3	3.0	78%	2.9	2.9	99%
Northern Rockfish	0.2	0.4	45.2%	0.0	0.1	0%	0.0	0.1	0%	0.0	0.2	0%	0.0	0.1	0%	0.0	0.1	0%
Octopus	47.7	267.0	17.9%	63.2	409.8	15%	38.6	164.2	23%	119.8	160.6	75%	55.9	108.4	52%	42.0	102.9	41%
Other Rockfish	0.4	2.2	16.7%	0.0	2.2	2%	0.2	1.9	8%	3.6	4.7	77%	0.0	2.3	0%	0.0	0.6	6%
Pacific Ocean Perch	0.0	0.0	0.0%	0.0	0.1	0%	0.0	0.0	5%	0.0	0.2	1%	0.0	0.3	1%	0.0	0.0	0%
Pollock	4.9	20.9	23.5%	1.8	13.3	13%	0.3	1.6	17%	0.3	1.6	18%	0.2	4.2	5%	0.4	9.0	5%
Rock Sole	0.1	0.5	11.6%	0.0	2.3	1%	0.1	0.4	34%	0.0	0.1	31%	0.1	3.8	3%	0.0	0.3	3%
Sablefish	-	-	-	0.0	0.4	0%	0.0	2.0	0%	0.0	10.9	0%	0.0	6.1	0%	0.1	0.1	77%
Sculpin	1.4	129.5	1.1%	3.2	187.2	2%	2.9	129.9	2%	1.5	111.1	1%	0.8	143.0	1%	2.4	50.9	5%
Yellowfin Sole	0.4	2.2	19.7%	0.8	10.3	8%	0.9	29.7	3%	67.7	285.4	24%	15.1	456.9	3%	12.5	128.1	10%
ECOSYSTEM & NONTARGET OTHER	22	-	-	38.0	-	-	46.0	-	-	22.0	-	-	84.0	-	-	42.0	-	-
INCIDENTAL CATCH SUMMARY	76.9	429.6	13%	108.1	639.0	11%	89.8	352.9	12%	218.4	592.1	33%	176.5	790.2	12%	103.3	334.7	31%

Source: NMFS Catch Accounting System

Note: Nontarget other and ecosystem components including misc. crabs, bivalves, seastars, jellyfish, squid, and sculpins, etc.

3.4.2. Effects of the Alternatives

Alternative 1

The fish species that are caught incidentally in the Pacific cod fisheries are described in the section above. The target groundfish are assessed annually and are managed using conservative catch quotas. Catch of prohibited species is low for herring and salmon and is constrained for crab and halibut (see Section 3.3 above). Minimal interaction occurs between the Pacific cod fisheries and forage fish or non-specified species.

The Groundfish PSEIS (NOAA 2004a), and the Harvest Specifications Environmental Assessment (NMFS 2005d) both conclude that these species are at sustainable population levels and are unlikely to be subject to overfishing under the current, risk-averse management program. As a result, impacts on these species under Alternative 1 are not significant.

Alternative 2a

Under Alternative 2a, Pacific cod CQ associated with trawl CV LLP licenses may be fished annually by a CV using pot gear. Pot CVs harvesting CQ would be subject to 100% coverage and PSC used would be deducted from the PSC allocated to the cooperatives/PCTC program. Using an approach similar to the one described in Section 3.3, we assessed the change in incidental take species composition that may result from this action under a range of gear conversion scenarios (the same range applied to PSC species). We used the 2015 to 2020 average catch of each incidental species from Table 3-10 and Table 3-11. Table 3-12 shows the resulting incidental catch composition in the trawl CV sector, while Table 3-13 shows the incidental catch composition in the cod pot CV ≥ 60 ft sector.

Table 3-12 Resulting decrease in incidental catch in the BSAI Pacific cod trawl CV sector as a result of a range of trawl CQ conversion to pot gear harvest. Values are based off of the 2015 to 2020 average incidental catch shown in Table 3-10.

	Decrease in incidental take species in the trawl CV sector									
	0.5		1%		5%		10%		20%	
	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)
GROUND FISH (NOT TARGETED)	863.3	1,834.1	859.0	1,824.9	824.3	1,751.1	780.9	1,659.0	694.1	1,474.6
Arrowtooth Flounder	35.5	118.9	35.4	118.3	33.9	113.5	32.1	107.5	28.6	95.6
Atka Mackerel	31.5	50.5	31.4	50.2	30.1	48.2	28.5	45.7	25.4	40.6
BSAI Alaska Plaice	12.2	15.9	12.2	15.8	11.7	15.2	11.0	14.4	9.8	12.8
BSAI Kamchatka Flounder	1.4	5.4	1.4	5.4	1.4	5.2	1.3	4.9	1.1	4.3
BSAI Other Flatfish	9.9	93.0	9.8	92.5	9.4	88.8	8.9	84.1	7.9	74.8
BSAI Roughey Rockfish	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
BSAI Skate	55.5	237.5	55.2	236.3	53.0	226.7	50.2	214.8	44.6	190.9
Flathead Sole	36.1	110.2	35.9	109.7	34.4	105.2	32.6	99.7	29.0	88.6
Greenland Turbot	0.4	1.3	0.4	1.3	0.4	1.2	0.4	1.1	0.3	1.0
Northern Rockfish	2.8	12.7	2.8	12.6	2.7	12.1	2.5	11.5	2.3	10.2
Octopus	0.8	5.4	0.8	5.4	0.7	5.1	0.7	4.9	0.6	4.3
Other Rockfish	0.4	4.2	0.4	4.1	0.3	4.0	0.3	3.8	0.3	3.3
Pacific Ocean Perch	2.2	4.2	2.2	4.2	2.1	4.0	2.0	3.8	1.8	3.4
Pollock	472.8	713.6	470.4	710.0	451.4	681.3	427.6	645.5	380.1	573.8
Rock Sole	168.4	412.6	167.6	410.5	160.8	394.0	152.4	373.2	135.4	331.8
Sablefish	0.0	1.4	0.0	1.4	0.0	1.3	0.0	1.3	0.0	1.1
Shark	0.0	0.5	0.0	0.5	0.0	0.4	0.0	0.4	0.0	0.4
Yellowfin Sole	39.3	50.4	39.1	50.1	37.6	48.1	35.6	45.6	31.6	40.5
ECOSYSTEM & NONTARGET OTHER	2.6	270.4	2.6	269.0	2.5	258.2	2.4	244.6	2.1	217.4
INCIDENTAL CATCH SUMMARY	866.0	2,104.5	861.6	2,093.9	826.8	2,009.3	783.3	1,903.5	696.3	1,692.0
Reduction in catch	-4.4	-10.6	-8.7	-21.2	-43.5	-105.8	-87.0	-211.5	-174.1	-423.0

Table 3-13 Resulting increase in PSC catch in the BSAI Pacific cod pot CV ≥ 60 ft sector as a result of a range of trawl CQ conversion to pot gear harvest. Values are based off of the 2015 to 2020 average incidental catch shown in Table 3-11. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

	Increase in incidental take species in the pot cod CV ≥ 60 ft sector									
	0.5% (1.3%)		1% (2.6%)		5% (13.2%)		10% (26.3%)		20% (52.6%)	
	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)
GROUND FISH (NOT TARGETED)	87.7	529.9	88.8	536.7	98.0	592.1	109.3	660.7	132.1	798.2
Arrowtooth Flounder	1.8	2.6	1.8	2.7	2.0	3.0	2.2	3.3	2.7	4.0
Atka Mackerel	0.4	6.3	0.4	6.4	0.4	7.1	0.5	7.9	0.6	9.5
BSAI Kamchatka Flounder	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
BSAI Other Flatfish	1.6	18.0	1.7	18.2	1.8	20.1	2.1	22.4	2.5	27.1
BSAI Shortraker Rockfish	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
BSAI Skate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flathead Sole	1.2	1.4	1.3	1.5	1.4	1.6	1.5	1.8	1.9	2.2
Northern Rockfish	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2	0.0	0.2
Octopus	62.0	204.8	62.8	207.4	69.3	228.8	77.3	255.3	93.4	308.5
Other Rockfish	0.7	2.3	0.7	2.4	0.8	2.6	0.9	2.9	1.1	3.5
Pacific Ocean Perch	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
Pollock	1.3	8.6	1.3	8.7	1.5	9.6	1.7	10.7	2.0	12.9
Rock Sole	0.1	1.2	0.1	1.3	0.1	1.4	0.1	1.6	0.1	1.9
Sablefish	0.0	3.9	0.0	4.0	0.0	4.4	0.0	4.9	0.0	5.9
Sculpin	2.0	126.9	2.1	128.5	2.3	141.8	2.6	158.2	3.1	191.1
Yellowfin Sole	16.4	154.1	16.6	156.1	18.4	172.2	20.5	192.1	24.7	232.1
ECOSYSTEM & NONTARGET OTHER	42.8	-	43.4	-	47.9	-	53.4	-	64.5	-
INCIDENTAL CATCH SUMMARY	130.5	529.9	132.2	536.7	145.9	592.1	162.7	660.7	196.6	798.2
INCREASE IN CATCH	1.7	6.8	3.3	13.6	17.0	69.0	33.9	137.6	67.8	275.1

Similar to PSC catch, as more CQ is used to fish with pot gear; we see a proportional decrease in the catch of incidental species with trawl gear. Conversely, as more CQ is used to fish with pot gear, we see a disproportionate increase in the catch of incidental species with pot gear.

By adding together the values in Table 3-12 and Table 3-13 we arrive at an estimation of the combined incidental catch in the BSAI Pacific cod trawl CV fishery and pot CV \geq 60 ft fishery (Table 3-14). While the composition of the incidental catch from pot gear in the BSAI Pacific cod pot sector differs from that of the trawl CV sector, because of differences in fishing gear logistics we actually see an overall reduction in the amount of incidental take. The exceptions to this are for octopus and sculpins. However, this action will not change the MRAs currently in place for these species and these fisheries are currently well below existing MRA levels. Additionally, beginning in 2021, sculpins are now defined in the ecosystem component category of the Groundfish FMPs, and directed fishing for them is prohibited and few are retained as bycatch (85 FR 41427; July 10, 2020). Because this action will not change existing MRAs for octopus or sculpins, and because the overall incidental catch would actually decrease as more pot gear is used, the gear conversion provisions under Element 14 in Alternatives 2a and 3 (Preliminary Preferred Alternative) should not substantially alter the sustainability of the incidental catch in the Pacific cod target fishery.

Alternative 2b and 3 (PA)

Alternatives 2b and 3 (PA) would not permit the gear conversion provisions described under Element 14 which would not result in an increase in the use of pot gear in these fisheries.

Since fishing effort under Alternatives 2b, and 3 (PA) will remain relatively consistent with current fishing patterns, this action is not likely to substantially alter fishing patterns and the current effects of fishing on incidental catch in the Pacific cod target fishery. Recent analyses, described above, conclude that species caught incidentally in the Pacific cod fisheries are at sustainable population levels. As a result, the potential allocations are not substantially modified from Alternative 1, and impacts are not expected to be significant.

The potential for the composition of incidental take in this fishery may change from status quo and will be dependent on the options selected by the Council (e.g., gear conversion). While shifts in the location or timing of fishing may occur as a result of Alternatives 2b, and 3 (PA), there is already considerable interannual variability in the patterns of fishing across the BSAI groundfish sectors, as environmental conditions and avoidance of PSC species have caused vessels to adjust their fishing patterns. Pacific cod harvests will continue to be constrained by the current seasonal limits, so overall shifts in the timing of the fishery will not change across season but small change could occur within seasons. Any shift in fishing is unlikely to occur outside of the existing footprint of the groundfish fishery in the BSAI. As a result, Alternatives 2b, and 3 (PA) are not expected to sustainability alter incidental catch in the Pacific cod target fishery, and thus will not result in a significant impact.

Table 3-14 Total hypothetical incidental catch by the BSAI Pacific cod trawl CV and pot cod ≥ 60 ft sectors as a result of the gear conversion scenarios. Values are generated by added the values of Table 3-12 to the values of Table 3-13. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

	BSAI Trawl and Pot CV Sector Incidental Catch as a result of gear conversion scenarios.									
	0.5% (1.3%)		1% (2.6%)		5% (13.2%)		10% (26.3%)		20% (52.6%)	
	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)	Retained Catch (MT)	Total Catch (MT)
GROUND FISH (NOT TARGETED)	951.0	2,364.0	947.8	2,361.6	922.3	2,343.3	890.2	2,319.6	826.2	2,272.9
Arrowtooth Flounder	37.3	121.5	37.2	120.9	35.9	116.4	34.4	110.8	31.3	99.5
Atka Mackerel	31.9	56.8	31.8	56.6	30.6	55.3	29.0	53.6	26.0	50.1
BSAI Alaska Plaice	12.2	15.9	12.2	15.8	11.7	15.2	11.0	14.4	9.8	12.8
BSAI Kamchatka Flounder	1.4	5.4	1.4	5.4	1.4	5.2	1.3	4.9	1.1	4.4
BSAI Other Flatfish	11.5	111.0	11.5	110.8	11.3	108.9	11.0	106.5	10.4	101.9
BSAI Rougheye Rockfish	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1
BSAI Shortraker Rockfish	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.2
BSAI Skate	55.5	237.5	55.2	236.3	53.0	226.7	50.2	214.8	44.6	191.0
Flathead Sole	37.3	111.7	37.1	111.1	35.8	106.8	34.2	101.5	30.9	90.8
Greenland Turbot	0.4	1.3	0.4	1.3	0.4	1.2	0.4	1.1	0.3	1.0
Northern Rockfish	2.8	12.8	2.8	12.8	2.7	12.3	2.6	11.7	2.3	10.4
Octopus	62.8	210.2	63.6	212.8	70.0	234.0	78.0	260.2	94.0	312.8
Other Rockfish	1.1	6.5	1.1	6.5	1.1	6.6	1.2	6.7	1.4	6.9
Pacific Ocean Perch	2.2	4.3	2.2	4.3	2.1	4.1	2.0	3.9	1.8	3.5
Pollock	474.1	722.2	471.7	718.7	452.9	690.9	429.3	656.2	382.1	586.7
Rock Sole	168.5	413.9	167.6	411.8	160.9	395.4	152.4	374.8	135.5	333.6
Sablefish	0.0	5.3	0.0	5.4	0.0	5.7	0.0	6.2	0.0	7.1
Sculpin	2.0	126.9	2.1	128.5	2.3	141.8	2.6	158.2	3.1	191.1
Shark	0.0	0.5	0.0	0.5	0.0	0.4	0.0	0.4	0.0	0.4
Yellowfin Sole	55.8	204.5	55.8	206.2	55.9	220.3	56.1	237.7	56.4	272.6
ECOSYSTEM & NONTARGET OT	45.5	270.4	46.0	269.0	50.4	258.2	55.8	244.6	66.7	217.4
INCIDENTAL CATCH SUMMARY	867.7	2,111.3	865.0	2,107.5	843.8	2,078.3	817.2	2,041.1	764.0	1,967.2
DECREASE IN CATCH	-2.7	-3.8	-5.4	-7.6	-26.5	-36.7	-53.1	-73.9	-106.3	-147.9

Cumulative Effects on Non-Target Species

None of the alternatives the Council considered, including the recommended PA, would substantially change incidental catch for the BSAI Pacific cod trawl CV fishery. Considering the direct and indirect impacts of the proposed action when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the reasonably foreseeable future actions listed above, the cumulative impacts of the proposed action are determined to be not significant.

3.5. Marine Mammals

3.5.1. Status

Alaska supports one of the richest assemblages of marine mammals in the world. Twenty-two species are present from the order Carnivora, superfamilies Pinnipedia (seals, sea lions, and walrus), Ursoidea (polar bears), and Musteloidea (sea otters), and from the order Artiodactyla, infraorder Cetacea (whales, dolphins, and porpoises). Some marine mammal species are resident in waters off Alaska throughout the year, while others migrate into or out of Alaska fisheries management areas. Marine mammals occur in diverse habitats, including deep oceanic waters, the continental slope, and the continental shelf, including inshore waters. NMFS maintains management authority for all marine mammal species in Alaska, while the U.S. Fish and Wildlife Service (USFWS) is the designated management authority for northern polar bears, Pacific walrus, and northern sea otter.

The Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), and the Fur Seal Act are the relevant statutes for managing marine mammal interactions with human activities, including commercial fishing operations. The MMPA was enacted in 1972 with the ideal of ensuring that marine mammal populations continue to be functioning elements of the ecosystems of which they are a part. One of the incentives for enacting the MMPA was to reduce take of marine mammals incidental to commercial fishing operations. While marine mammals may be lawfully taken incidentally in the course of commercial fishing operations, the 1994 MMPA Amendments established a requirement for commercial fishing operations to reduce incidental mortalities and serious injuries (M/SI) of marine mammals to insignificant levels approaching a zero rate, commonly referred to as the Zero Mortality Rate Goal (ZMRG). ZMRG is considered to be met for a marine mammal stock when the M/SI level from all commercial fisheries is 10 percent or below the Potential Biological Removal level (PBR) of that marine mammal stock (69 FR 43338, July 20, 2004). Likewise, the Endangered Species Act (ESA) was enacted to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve such conservation. In practice, the ESA outlines a program to protect endangered species on the brink of extinction and threatened species that are likely to be on the brink of extinction in the near future and pursue their recovery. The ESA also requires designation of any habitat of endangered or threatened species, which is then considered to have physical or biological features essential to the conservation of the species and which may require special management considerations or protection.

Under the MMPA a “population stock” is the fundamental unit of legally-mandated conservation and is defined as “a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, which interbreed when mature.” Stocks are identified in a manner consistent with the management goals of the MMPA which include 1) preventing stocks from diminishing such that they cease to be a significant functioning element in the ecosystem of which they are a part or below their optimum sustainable population keeping the carrying capacity of the habitat in mind; and 2) maintaining the health and stability of the marine ecosystem. Therefore, a stock is also recognized as being a management unit that identifies a demographically isolated biological population. While many types of information can be used to identify stocks of a species, it is recognized that some identified stocks may fall short of that threshold due to a lack of information.

Marine mammal Stock Assessment Reports (SARs) are published annually under the authority of the MMPA for all stocks that occur in state and federal waters of the Alaska region [NMFS2016]. Individual SARs provide information on each stock's geographic distribution, population estimates, population trends, and estimates of the potential biological removal (PBR) levels for each stock. The SARs identify sources of human-caused mortality, including serious injury and mortality in commercial fishery operations, by fishery, and whether the stock has met ZMRG for all fisheries. The SARs also include the stock's ESA listing status and MMPA depleted and strategic designations. Strategic stock SARs are updated annually (Steller sea lions, northern fur seals, bearded seals, ringed seals, Cook Inlet beluga whales, AT1 Transient killer whales, harbor porpoise, sperm whales, humpback whales, fin whales, North Pacific right whales, and bowhead whales). SARs for non-strategic stocks are updated every three years or when significant new information is available.

Under the ESA species, subspecies, and distinct population segments (DPS) are eligible for listing as a threatened or endangered species. The ESA defines a species as “any subspecies of fish or wildlife or plants, and any DPS of any species of vertebrate fish or wildlife which interbreeds when mature.” The joint USFWS /NMFS DPS policy (61 FR 4722; February 7, 1996) establishes two criteria that must be met for a population or group of populations to be considered a DPS: (1) The population segment must be discrete in relation to the remainder of the species (or subspecies) to which it belongs; and (2) the population segment must be significant to the remainder of the species (or subspecies) to which it belongs.

A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions: 1) it is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; or 2) it is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the ESA. Significance determinations are made using available scientific evidence of the population's biological and ecological importance to the taxon to which it belongs. This may include, but is not limited to, one or more of the following: 1) Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon; 2) evidence that loss of the discrete population segment would result in a significant gap in the range of the taxon; 3) evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range; or 4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics. It is important to note that the MMPA stock designations and ESA DPS designations for a given species do not necessarily overlap due to differences in the defining criteria for each.

Marine mammals have been given various levels of protection under the current fishery management plans of the Council, and several species are the subjects of continuing research and monitoring to further define the nature and extent of fishery impacts on them. A number of conservation concerns and/or management determinations may be related to marine mammals and the potential impacts of fishing. For individual species, these concerns or determinations may include—

- Protection under the ESA:
 - listed as endangered or threatened
 - placed on NMFS' list of “species of concern” or designated as a “candidate species” for ESA listings;
- Protection under the MMPA:
 - designated as depleted or strategic;
 - focus of a Take Reduction Plan;
- Other:
 - declining or depressed populations in a manner of concern to State or Federal agencies;

- large bycatch or other mortality related to fishing activities; or
- vulnerability to direct or indirect adverse effects from some fishing activities.

The Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004) provides descriptions of the range, habitat, and diet for marine mammals found in waters off Alaska. The 2015 PSEIS Supplemental Information Report (NMFS 2015) provides updates on changes to marine mammal stock or species-related management and status, as well as new information regarding impacts on marine mammal stocks and new methods to assess impacts. The information from the PSEIS and the SARs is incorporated by reference.

Marine mammal stocks, including those currently listed as endangered or threatened under the ESA or depleted or strategic under the MMPA that may be present in the action area are listed Table 3-15. ESA section 7 formal and informal consultations with respect to the actions of the Federal groundfish fisheries have been completed for all of the ESA-listed species, either individually or in groups (NMFS 2010 and NMFS 2014a). Of the species listed under the ESA or stocks designated as depleted or strategic under the MMPA and present in the action area, several species may be more vulnerable than others to being adversely affected by commercial groundfish fishing. These include Steller sea lions, bearded seals, humpback whales, fin whales, and sperm whales. Stocks designated as depleted or strategic under the MMPA, but not listed as threatened or endangered under the ESA, that may be vulnerable to being adversely affected by commercial groundfish fishing include northern fur seals and harbor porpoise.

Table 3-15 Marine mammals known to occur in the Bering Sea and Aleutian Islands

Infraorder or Superfamily	Species	MMPA Stock	ESA or MMPA Status	ZMRG Status (all fisheries)
Pinnipedia	Steller sea lion (<i>Eumatopias jubatus</i>)	Western U.S.	Endangered, Depleted, Strategic	Not Met
	Northern fur seal (<i>Callorhinus ursinus</i>)	Eastern Pacific	Depleted, Strategic	Met
	Harbor seal (<i>Phoca vitulina</i>)	Pribilof Islands	None	Unknown**
		Bristol Bay	None	Unknown**
	Ribbon seal (<i>Phoca fasciata</i>)	Alaska	None	Met
	Bearded seal (<i>Erignathus barbatus nauticus</i>)	Alaska	Threatened, depleted, strategic©	Unknown*
	Spotted seal (<i>Phoca largha</i>)	Alaska	None#	Met
	Ringed seal (<i>Phoca hispida</i>)	Alaska	None¥	Unknown*
	Pacific Walrus (<i>Odobenus rosmarus divergens</i>)	Alaska	Strategic§	Met
Cetacea	Killer whale (<i>Orcinus orca</i>)	Eastern North Pacific Alaska Resident	None	Met
		Eastern North Pacific GOA, Aleutian Islands, and Bering Sea transient	None	Met
		Offshore***	None	Unknown*
	Pacific White-sided dolphin (<i>Lagenorhynchus obliquidens</i>)	North Pacific	None	Unknown*
	Harbor porpoise (<i>Phocoena phocaena</i>)	Bering Sea	Strategic	Unknown*
	Dall's porpoise (<i>Phocoenoides dalli</i>)	Alaska	None	Unknown*
	Beluga whale (<i>Delphinapterus leucas</i>)	Beaufort Sea	None	Met
		Eastern Chukchi Sea	None	Met
		Eastern Bering Sea	None	Unknown*
		Bristol Bay		Unknown**
	Baird's beaked whale (<i>Berardius bairdii</i>)	Alaska	None	Unknown*
	Cuvier's beaked whale (<i>Ziphius cavirostris</i>)	Alaska	None	Unknown*
	Stejneger's beaked whale (<i>Mesoplodon stejnegeri</i>)	Alaska	None	Unknown*
	Sperm whale (<i>Physeter macrocephalus</i>)	North Pacific	Endangered, Depleted, Strategic	Unknown*
	Bowhead whale (<i>Balaena mysticetus</i>)	Western Arctic (Also known as Bering-Chukchi-Beaufort stock)	Endangered, Depleted, Strategic	Met
	Humpback whale (<i>Megaptera novaeangliae</i>) †	Western North Pacific‡	Endangered, Depleted, Strategic	Not Met
		Central North Pacific ‡‡	Mexico DPS-Threatened, Depleted, Strategic Hawaii DPS - None	Not Met
	Fin whale (<i>Balaenoptera physalus</i>)	Northeast Pacific	Endangered, Depleted, Strategic	Unknown*
	Minke whale (<i>Balaenoptera acutorostrata</i>)	Alaska	None	Unknown*
	North Pacific right whale (<i>Eubalaena japonica</i>)	Eastern North Pacific	Endangered, Depleted, Strategic	Met****
Blue whale (<i>Balaenoptera musculus</i>)	Eastern North Pacific***	Endangered, Depleted, Strategic	Met	
Sei whale (<i>Balaenoptera borealis</i>)	Eastern North Pacific***	Endangered, Depleted, Strategic	Met	
Mustelidae	Northern sea otter (<i>Enhydra lutris</i>)	Southwest Alaska	Threatened, Depleted, Strategic	Met
Ursoidea	Polar Bear (<i>Ursus maritimus</i>)	Chukchi/Bering Sea	Threatened, Depleted, Strategic	Met

Sources: Muto et al 2019; List of Fisheries for 2020 (April 16, 2020 85 FR 21079)

* Unknown due to unknown abundance estimate and PBR.

** Unknown due to inadequate observer coverage or unreliable SI/M estimate.

*** This stock is found in the Pacific, rather than in the Alaska, SAR.

**** The PBR for the North Pacific right whale is calculated but considered unreliable. However, there are no known fishery-related SI/M.

† On September 8, 2016, NMFS published a final decision revising the status of humpback whales under the ESA (81 FR 62259), effective October 11, 2016. In the 2016 decision, NMFS recognized the existence of 14 DPSs, classified several as endangered and one as threatened, and determined that the remaining DPSs do not warrant protection under the ESA. Three DPSs of humpback whales occur in waters off the coast of Alaska: the Asia/2nd Western North Pacific (WNP) DPS, which is endangered, the Mexico DPS, which is threatened, and the Hawaii DPS, which is not protected under the ESA. Whales from these three DPSs overlap to some extent on feeding grounds off Alaska. As of October 2016, the MMPA stock designations of humpback whales found in Alaska have not been updated to reflect the newly-designated DPSs.

‡ Corresponds to the new Asia/ 2nd WDPS (endangered).

‡‡ Includes the new Mexico (threatened) and Hawaii DPSs (not protected under the ESA).

Spotted seals: Three DPSs are identified, but only the Bering DPS occurs in US waters. Therefore, the Alaska stock identified under the MMPA SAR consists entirely of the Bering DPS.

© Bearded seals: Two DPSs are identified for this subspecies, but only the Beringia DPS occurs in US waters. Therefore, the Alaska stock identified under the MMPA SAR consists entirely of the Beringia DPS. The Beringia DPS was listed as threatened under the ESA in December 2012. In July 2014 the U.S. District Court vacated the listing. In October 2016 the US Court of Appeals for the 9th Circuit reversed the July 2014 decision returning the Beringia DPS to a threatened status under the ESA.

¥ Ringed seals were listed as threatened under the ESA in December 2012. In March 2016 the U.S. District Court vacated the listing. In May 2016 NMFS appealed the March 2016 decision.

§ Walrus – A petition to list walrus under the ESA was determined to be warranted, but precluded by higher priorities (76 FR 7634, February 10, 2011). The USFWS is under court order to make a decision on the listing in 2017.

The Alaska Groundfish Harvest Specifications EIS provides information on the effects of the groundfish fisheries on marine mammals (NMFS 2007) and has been updated with Supplemental Information Reports (SIRs) (NMFS 2015). These documents are also incorporated by reference. Direct and indirect interactions between marine mammals and groundfish fishing vessels may occur due to overlap in the size and species of groundfish harvested in the fisheries that are also important marine mammal prey, and due to temporal and spatial overlap in marine mammal occurrence and commercial fishing activities. This discussion focuses on those marine mammals that may interact with or be affected by the BSAI Pacific cod trawl and pot fisheries passed on the most recent List of Fisheries assessment (April 16, 2020 85 FR 21079; Table 3-15 and Table 3-17).

Table 3-16 Status of Pinnipedia and Carnivora stocks potentially affected by the action

Pinnipedia and Carnivora species and stock	Status under the ESA	Status under the MMPA	Population trends	Distribution in action area
Steller sea lion –Western (W) and Eastern (E) Distinct Population Segment (DPS)	Endangered (W)	Depleted & a strategic stock	For the WDPS, regional increases in counts in trend sites of some areas have been offset by decreased counts in other areas so that the overall population of the WDPS appears to have stabilized (NMFS 2010a). The EDPS is steadily increasing and is delisted.	WDPS inhabits Alaska waters from Prince William Sound westward to the end of the Aleutian Island chain and into Russian waters. EDPS inhabit waters east of Prince William Sound to Dixon Entrance. Occur throughout AK waters, terrestrial haulouts and rookeries on Pribilof Islands, Aleutian Islands, St. Lawrence Island, and off the mainland. Use marine areas for foraging. Critical habitat designated around major rookeries, haulouts, and foraging areas.
Harbor seal – Aleutian Is, Bristol Bay	None	None	Bristol Bay – approx. 2.5 % increase per year over 8 years; Aleutian Is – approx. 2% per year decrease over eight years;	Bristol Bay– range from Nunivak Island south to the west coast of Unimak Island and extending inland (east) to Kvichak Bay and Lake Iliamna; Aleutian Is - entire Aleutian chain from Attu Island to Ugamak Island;
Bearded Seal - Alaska	Threatened	Depleted & a strategic stock	Reliable data on trends in population abundance for the Alaska stock of bearded seals are unavailable.	Widely dispersed throughout the Bering Sea and Aleutian Islands in the summer and fall. Associated with ice in spring and winter and may be associated with ice in summer and fall.
Ribbon Seal - Alaska	None	None	Reliable data on population trends are unavailable.	Widely dispersed throughout the Bering Sea and Aleutian Islands in the summer and fall. Associated with ice in spring and winter and may be associated with ice in summer and fall.

Sources: Muto et al, 2020; List of Fisheries for 2020 (April 16, 2020 85 FR 21079).

Table 3-17 Status of Cetacea stocks potentially affected by the action

Cetacea species/stock	Population trends	Distribution in action area
Humpback whale - Western North Pacific (primarily Western DPS)	Using the SPLASH population estimate (N) of 1,107 and an assumed conservative CV(N) of 0.300 would result in an Nmin for this humpback whale stock of 865. The SPLASH abundance estimate for Asia/2 nd western N Pacific population represents a 6.7% annual rate of increase over the 1991-1993 abundance estimate (Calambokidis et al. 2008). However, the 1991-1993 estimate was for Ogasawara and Okinawa breeding grounds only, whereas the SPLASH estimate includes the Philippines, so the annual rate of increase is biased high to an unknown degree.	The winter distribution of humpback whales in the Western stock includes several island chains in the western North Pacific, including the Ogasawara Islands, the Okinawa region, and in the Philippines. Humpback whales are reported to also occur in the South China Sea north of the Philippines near Taiwan, and east of Ogasawara in the Marshall and Mariana Islands. Humpback whales are increasingly seen north of the Bering Strait into the northeastern Chukchi Sea, with some indication that more humpback whales are seen on the Russian side north of the Bering Strait. A large area of overlap with the western North Pacific stock in the summer occurs in Southcentral Alaska and along the Aleutian Islands to about Umnak Island, as well as in Southwestern Alaska and Bristol Bay to approximately Cape Newenham.
Humpback whale - Central North Pacific (primarily Mexico and Hawaii DPS)	The best minimum population estimate for the population is 7,891. Overall, the abundance trend is increasing and from SPLASH estimates the North Pacific represents an annual increase of 4.9% since 1991–1993. SPLASH abundance estimates for Hawaii show annual increases of 5.5% to 6.0% since 1991–1993 (Calambokidis et al. 2008). Reliable trend information for the Mexico DPS, part of which constitutes a part of the Central North Pacific stock, is not available at this time due to variability in the estimates from the early 1990s. A 6.9% increase might be indicated across the entire Mexico DPS. However the Mexico DPS is listed as threatened due to a low abundance estimate and the ongoing threat of entanglement in fishing gear.	The winter distribution of the Central North Pacific stock is primarily in the Hawaiian archipelago and a smaller percentage along the Pacific Mexican coast of mainland Mexico, the Baja Peninsula, and the Revillagigedo Islands. In summer, the majority of whales from the Central North Pacific stock are found in the Aleutian Islands, Bering Sea, Gulf of Alaska, and Southeast Alaska/northern British Columbia. A large area of overlap with the western North Pacific stock in the summer occurs in Southcentral Alaska and along the Aleutian Islands to about Umnak Island, as well as in Southwestern Alaska and Bristol Bay to approximately Cape Newenham.

Sources: Allen and Angliss 2014; List of Fisheries for 2020 (April 16, 2020 85 FR 21079))

Although this action focuses on the BSAI Pacific cod trawl fishery, none of the alternatives considered are likely to result in an increase in interactions (that may lead to incidental take or prey removal) between the trawl fishery and marine mammals in the BSAI (this is described in more detail below). However, Element 14 (gear conversion) would allow BSAI Pacific cod trawl CV sector with BSAI Pacific cod QS to fish with pot gear. As noted above, marine mammals may become entangled or caught on pot gear. If this provision results in an increase use of pot gear, that may increase the likelihood of gear interactions with marine mammals. Therefore, the focus of this discussion is based around potential impacts to marine mammal stocks from the BSAI Pacific cod pot fishery (Table 3-17) since data collected from this fishery provides the best scientific evidence to inform our understanding of possible impacts to marine mammals as a result of this action. **Ultimately, the Council recommended a PA that did not include gear conversion. Therefore there is not an anticipated increase in gear interactions with marine mammals that could result in increased incidental takes.**

Table 3-18 Reported mortalities between the BSAI Pacific cod pot fishery in BSAI and marine mammals from 2013-2017. (Source: 2019 List of Fisheries, Muto et al. 2019, and Delean et al. 2020)

Marine Mammal	Year	Observed mortality in that year	Extrapolated mortality in that year	Estimated Mean annual Mortality
Harbor Seal	2014	2 (+2) ^a	12 (+2) ^b	2.4 (+0.4) ^c
Humpback Whale	2015 ^d	1	None	0.2
	2017 ^d	1	None	

^a Total mortality and serious injury observed in 2014: 2 harbor seals in sampled hauls + 2 harbor seals in unsampled hauls.

^b Total estimate of mortality and serious injury in 2014: 12 harbor seals (extrapolated estimate from 2 harbor seals observed in sampled hauls) + 2 harbor seals (2 harbor seals observed in unsampled hauls).

^c Mean annual mortality and serious injury for fishery: 2.4 harbor seals (mean of extrapolated estimates from sampled hauls) + 0.4 harbor seals (mean of number observed in unsampled hauls).

^d Mortality and serious injury assigned to both the Central North Pacific (CNP) and Western North Pacific (WNP) stocks

Humpback Whale Stock Status

Humpback whales were initially listed in 1969 with the Endangered Species Conservation Act, and maintained in the status of endangered when the ESA passed into law in 1973. A Recovery Plan for Humpback whales was also adopted in 1991 (NMFS 1991). On September 8, 2016, NMFS published a final rule that revised the listing of humpback whales under the ESA by removing the original, taxonomic-level species listing, and in its place listing four DPSs as endangered and one DPS as threatened (81 FR 62260). Although the ESA was later amended to require the designation of critical habitat for listed species, when humpback whales were originally listed, there was no statutory requirement to designate critical habitat for this species. Section 4(a)(3)(A) of the ESA now requires that, to the maximum extent prudent and determinable, critical habitat be designated at the time of listing (16 U.S.C. 1533(a)(3)(A)). Thus, the listing of DPSs of humpback whales under the ESA in 2016 triggered the requirement to designate critical habitat, to the maximum extent prudent and determinable, for those DPSs occurring in areas under U.S. jurisdiction, including the Western North Pacific, Mexico, Hawaii and Central America DPSs. The critical habitat that has been proposed for humpback whales overlaps with the sablefish IFQ fishery (84 FR 54354, October 9, 2019). The historic summering range in the North Pacific encompasses coastal and inland waters around the Pacific Rim from Point Conception, California, north to the GOA and the Bering Sea, and west along the Aleutian Islands to the Kamchatka Peninsula and into the Sea of Okhotsk. The humpback whale population in much of this range was considerably reduced as a result of intensive commercial exploitation during this century.

Based on an analysis of migration between winter mating/calving areas and summer feeding areas using photo-identification, it was concluded that whales feeding in Alaskan waters belong primarily to the Hawaii DPS (not listed), with small numbers from the Western North Pacific DPS (endangered) and Mexico DPS (threatened) (Wade et al. 2016). For the area that comprised the action area Figure 3-1 (humpback whales from the Hawaii DPS comprise a majority of the whales present, followed by whales from the Mexico DPS and then the Western North Pacific DPS (Wade et al. 2016) (Figure 3-2 and Figure 3-1). However, as there is overlap in the feeding range for these three stocks of humpbacks, it is nearly impossible to distinguish an individual from one stock from another.

Figure 3-1. Approximate distribution of Western North Pacific humpback whales

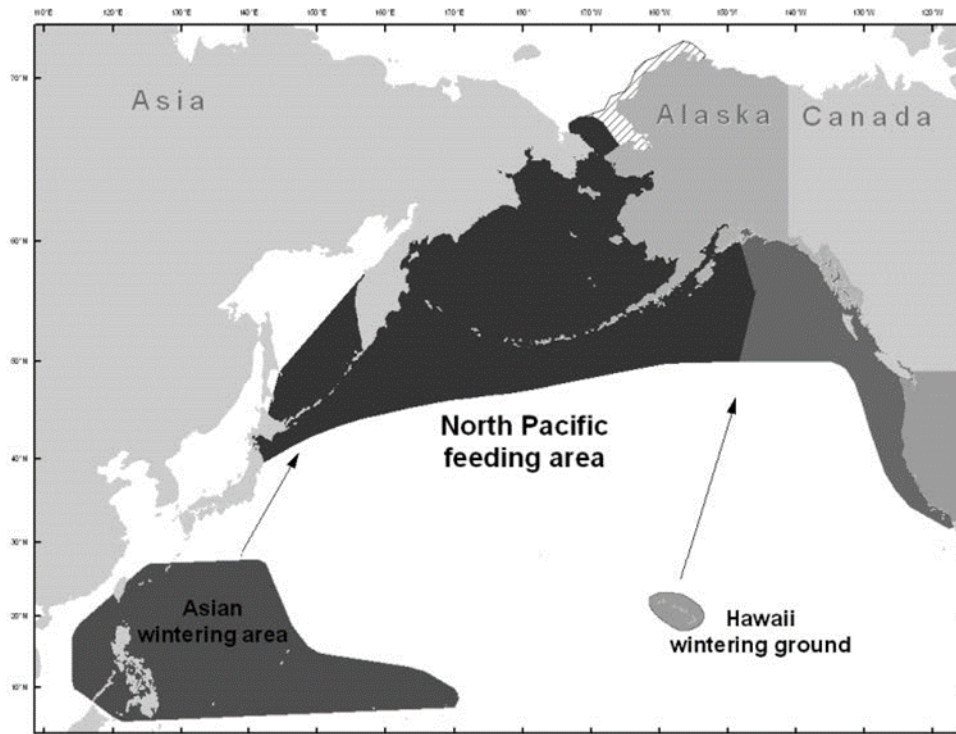
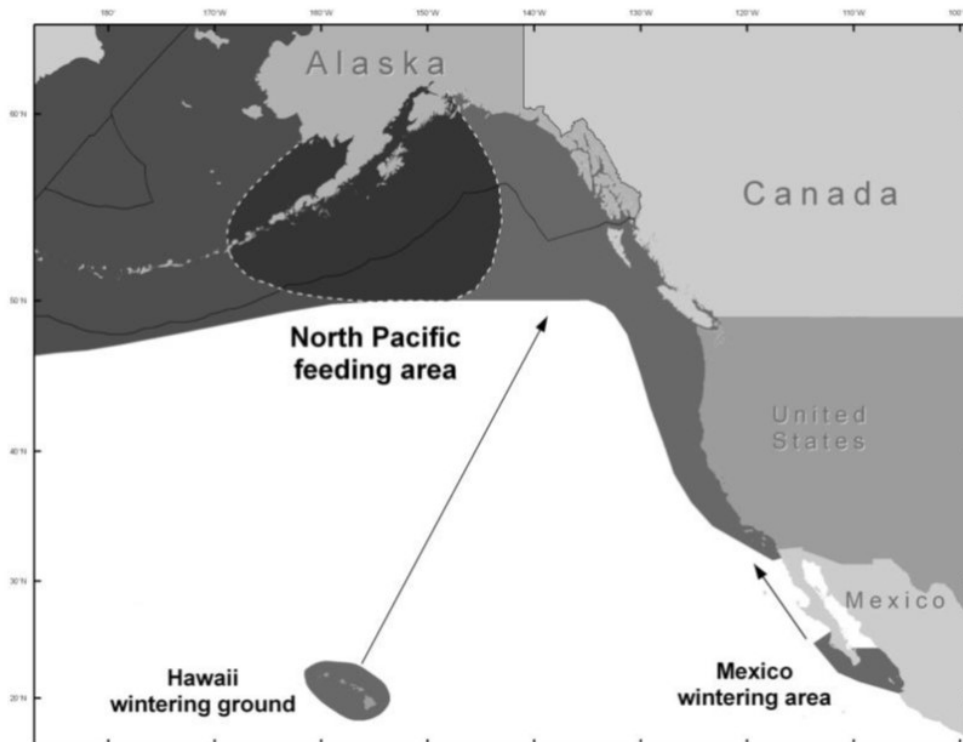


Figure 3-2 Approximate distribution of Western North Pacific humpback whales



These three DPS of humpback whales migrate to Alaska to feed. While humpbacks may be present at any time of the year in Alaska, they are most prevalent in the summer. Humpback whales forage at the sea surface to depths of ~200m (Goldbogen et al. 2008) and are limited to very short durations despite their large body size (Croll et al., 2005; Panigada et al., 1999), due to the energetic cost of lunge feeding (Acevedo-Gutierrez et al., 2002). Humpback whales primarily feed on euphausiids, such as krill, small forage fish such as herring, capelin and sand lance and occasionally juvenile salmon (Dolphin 1987; Witteveen et al. 2012; Chenoweth et al. 2017). Recent population estimates for humpback whales place the Central North Pacific stock (primarily Hawaii and Mexico DPS) at 7,891 individuals and the Western North Pacific stock (primarily Western North Pacific DPS) at 865 individuals, for a total of 8,756 humpbacks potentially feeding in Alaskan waters (Muto et al. 2020).

NMFS has determined that for humpback whales, the mortality and serious injury incidental to commercial fishing operations will have a negligible impact (60 FR 45399; August 31, 1995). A 'negligible impact' is defined as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through an effect on annual rates of recruitment or survival. Section 7 consultation was completed in 2010 and included issuance of an incidental take Statement for humpback whales for commercial fishing operations of an average annual incidental mortality and serious injury in commercial fishery of up to 2 humpback whales from the Central North Pacific stock and 1 humpback whale from the Western North Pacific stock per year (NMFS 2010). All humpback whale stocks that range into Alaska have increasing populations (Muto et al. 2020).

Harbor Seal Stock Status

Harbor seals inhabit coastal and estuarine waters off Baja California, north along the western coasts of the United States, British Columbia, and Southeast Alaska, west through the Gulf of Alaska and Aleutian Islands, and in the Bering Sea north to Cape Newenham and the Pribilof Islands. They haul out on rocks, reefs, beaches, and drifting glacial ice and feed in marine, estuarine, and occasionally fresh waters. Harbor seals generally are non-migratory, with local movements associated with such factors as tides, weather, season, food availability, and reproduction (Scheffer and Slipp 1944; Fisher 1952; Bigg 1969, 1981; Hastings et al. 2004). The results of past and recent satellite tagging studies in Southeast Alaska, Prince William Sound, Kodiak Island, and Cook Inlet are also consistent with the conclusion that harbor seals are non-migratory (Swain et al. 1996, Lowry et al. 2001, Small et al. 2003, Boveng et al. 2012). Strong fidelity of individuals for haul-out sites during the breeding season has been documented in several populations (Härkönen and Harding 2001), including some regions in Alaska such as Kodiak Island, Prince William Sound, Glacier Bay/Icy Strait, and Cook Inlet (Pitcher and McAllister 1981, Small et al. 2005, Boveng et al. 2012, Womble 2012, Womble and Gende 2013).

Westlake and O’Corry-Crowe’s (2002) analysis of genetic information from 881 samples across 181 sites revealed population subdivisions on a scale of 600-820 km. These results suggest that genetic differences within Alaska, and most likely over their entire North Pacific range, increase with increasing geographic distance. New information revealed substantial genetic differences indicating that female dispersal occurs at region specific spatial scales of 150-540 km. This research identified 12 demographically independent clusters within the range of Alaska harbor seals; however, significant geographic areas within the Alaska harbor seal range remain unsampled (O’Corry-Crowe et al. 2003). In 2010, NMFS and their co-management partners, the Alaska Native Harbor Seal Commission, identified 12 separate stocks of harbor seals based largely on genetic structure; this represented a significant increase in the number of harbor seal stocks from the three stocks (Bering Sea, Gulf of Alaska, Southeast Alaska) previously recognized. Given the genetic samples were not obtained continuously throughout the range, a total evidence approach was used to consider additional factors such as population trends, observed harbor seal movements, and traditional Alaska Native use areas in the final designation of stock boundaries. Of the 12 stocks of harbor seals currently identified in Alaska, only two are identified in the List of Fisheries as

being potentially impacted by this action (Muto et al. 2020). Those are 1) the Aleutian Islands stock – occurring along the entire Aleutian chain from Attu Island to Ugamak Island, and 2) the Bristol Bay stock – ranging from Nunivak Island south to the west coast of Unimak Island and extending inland to Kvichak Bay and Lake Iliamna; the Trinity Islands, Tugidak Island, Sitkinak Island, Sundstrom Island, Aiaktalik Island, Geese Islands, Two Headed Island, Sitkalidak Island, Ugak Island, and Long Island. These individual stock distributions can be seen in Figure 3-3Figure 3-4.

Figure 3-3 Approximate distribution of the Aleutian Islands stock of harbor seals.

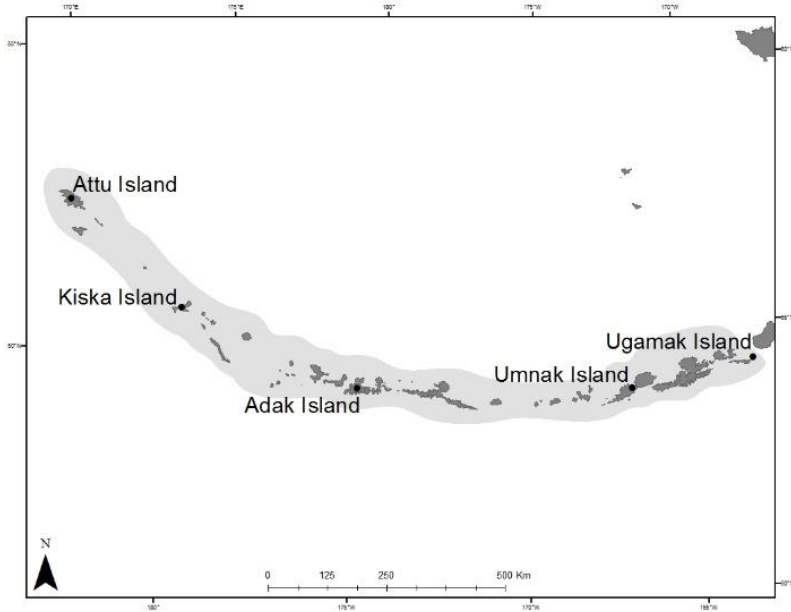
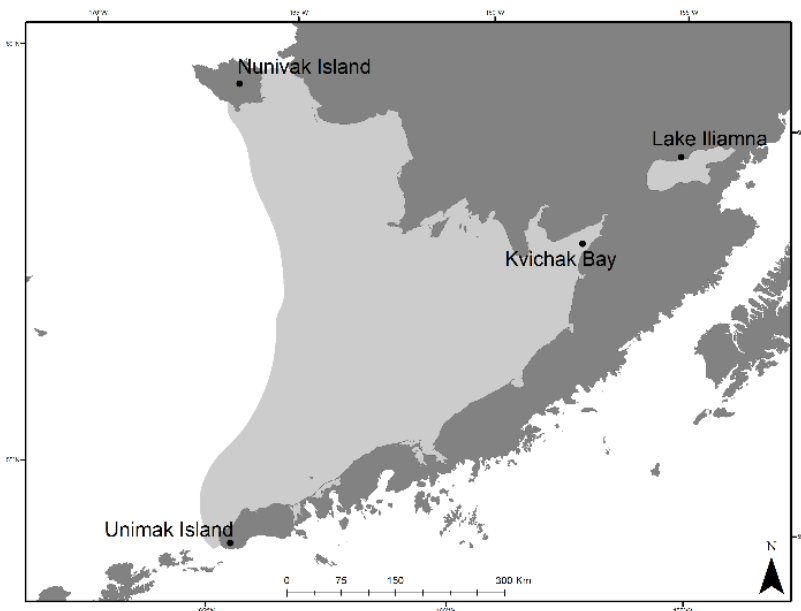


Figure 3-4 Approximate distribution of the Bristol Bay stock of harbor seals.



Local or regional trends in harbor seal numbers have been monitored at various time intervals since the 1970s, revealing diverse spatial patterns in apparent population trends. Where declines have been observed, they seem, generally, to have been strongest in the late 1970s or early 1980s to the 1990s. For example, in the Aleutian Islands, counts declined by 67% between the early 1980s and 1999, with declines of about 86% in the western Aleutians (Small et al. 2008). These areas of localized declines in

harbor seals contrast strongly with other large regions of Alaska where harbor seal numbers have remained stable or increased over the same period: trend monitoring regions around Ketchikan and the Kodiak area increased significantly in the 1980s and 1990s and regions around Sitka and Bristol Bay were stable (Small et al. 2003). Differences in trend across the various regions of Alaska suggest some level of independent population dynamics (O’Corry-Crowe et al. 2003, O’Corry-Crowe 2012).

No harbor seal stocks in Alaska are designated as depleted under the MMPA or listed as threatened or endangered under the Endangered Species Act, and the minimum estimate of the mean annual level of human-caused mortality and serious injury does not exceed PBR for any of the stocks; therefore, none of the stocks are strategic. At present, mean annual mortality and serious injury rates incidental to U.S. commercial fisheries that are less than 10% of PBR can be considered insignificant and approaching a zero mortality and serious injury rate. For the Aleutian Islands and Bristol Bay stocks of harbor seals, mean annual mortality and serious injury rates incidental to U.S. commercial fisheries are less than 10% of each stocks respective PBR.

The current statewide abundance estimate for Alaska harbor seals is 243,938 (Boveng et al. 2019), based on aerial survey data collected from 1996 to 2018 (Boveng et al. 2019).

3.5.2. Effects on Marine Mammals

Incidental Take

Marine mammals can be taken in groundfish fisheries by entanglement in gear (e.g., trawl, longline, and pot) and, rarely, by ship strikes for some cetaceans. The effects of the status quo fisheries on incidental takes of marine mammals are detailed in the 2007 harvest specifications EIS (NMFS 2007) and Allen et al. (2014). The annual Stock Assessment Report lists the species of marine mammals taken in the BSAI groundfish fisheries using observer data (Muto et al. 2020). In addition, the List of Fisheries for 2020 (85 FR 21079, April 16, 2020), describes known incidental takes of marine mammals in the groundfish fisheries. The BSAI Pacific cod trawl fisheries are listed as Tier II, Category III fisheries, based on the criterion that the fishery interacts with marine mammal stocks with annual mortality and serious injury less than or equal to 1 percent of the marine mammal’s potential biological removal (PBR) level. Based on the annual stock assessment reports, the potential take of marine mammals in the BSAI Pacific cod trawl fisheries is well below the PBRs or a very small portion of the overall human caused mortality for those species for which a PBR has not been determined (Allen and Angliss 2014). Therefore, the incidental takes under Alternative 1 have an insignificant effect on marine mammals.

Under Alternative 2a, Element 14 (gear conversion) would allow BSAI Pacific cod trawl CV sector with BSAI Pacific cod QS to fish with pot gear. The BSAI Pacific cod trawl fisheries are listed as Tier II, Category II fisheries, based on the criterion that the fishery interacts with marine mammal stocks with annual mortality and serious injury that are greater than 1 percent and less than 50 percent of the marine mammal’s potential biological removal (PBR) level. As noted above, marine mammals may become entangled or caught on pot gear. If this provision results in an increase use of pot gear, that may increase the likelihood of gear interactions with marine mammals.

Element 14 (gear conversion) was not included in either Alternatives 2b or 3. **Ultimately, the Council recommended Alternative 3 as the PA.** Since the use of pot gear under Alternatives 2b or 3(PA) would remain the same as under Alternative 1 (status quo), incidental takes under the PA have an insignificant effect on marine mammals.

Humpback Whales

Humpback whales traversing areas where pot gear is fished could be negatively impacted under Alternative 2a.. From 2013 to 2017 the estimated annual serious injury and mortality rate for humpback whales in commercial Pacific cod pot gear fisheries in the BSAI is 0.4 (Muto et al. 2020). This mortality rate is based on two reported interactions between humpback whales and commercial Pacific cod pot gear

fisheries in the BSAI; one in the BSAI Pacific cod pot CV sector and one in the Alaska State-managed Pacific cod pot gear parallel fishery (Muto et al. 2020). As discussed in Section 3.3, Alternatives 2a could result in up to 10% more CQ being allocated for use by pot gear fishing vessels¹⁸⁶ (without increasing crab PSC usage to a level that would impact the other participants of the PCTC Program). Therefore, a potential maximum effect to humpback whales over a five-year period (2013 to 2017) would be the existing effect of commercial Pacific cod pot gear fisheries in the BSAI (0.4 estimated annual serious injury or mortality), plus a 10% increase of the current effect ($0.4 + (0.4 * 10\%) = 0.44$). This would be considered a maximum for any potential additional effect, since it assumes that any increase in the use of pot gear fishing effort would directly result in a parallel increase in encounters with humpback whales. Given the rarity of interactions between humpback whales and these fisheries; that result is unlikely. Even with an increase in the potential effect to humpback whales, an increase to the annual serious injury or mortality rate of humpback whales of 0.04 still results in a rate well below the PBRs of humpback whale stocks. While Alternative 2a could result in more interactions with humpback whales, these are not likely to rise to a level that would significantly affect humpback whale stocks in the BSAI.

The PA would not permit the gear conversion provisions described under Element 14 which would not result in an increase in the use of pot gear in these fisheries.

Harbor Seals

The only other species known to interact (potentially leading to incidental take) with this fishery is harbor seals, where two [SI/M or interactions] were documented in 2014. No harbor seal stocks in Alaska are designated as depleted under the MMPA or listed as threatened or endangered under the Endangered Species Act, and the minimum estimate of the mean annual level of human-caused mortality and serious injury does not exceed PBR for any of the stocks; therefore, none of the stocks are strategic. At present, mean annual mortality and serious injury rates incidental to U.S. commercial fisheries that are less than 10% of PBR can be considered insignificant and approaching a zero mortality and serious injury rate. For the Aleutian Islands and Bristol Bay stocks of harbor seals, mean annual mortality and serious injury rates incidental to U.S. commercial fisheries are less than 10% of each stocks respective PBR.

The overall amount of effort in the fisheries will remain the same as under Alternative 1, as the overall Pacific cod TAC is not affected under any alternative. Shifts in the location or timing of fishing may occur as a result of Alternatives 2a, 2b, and 3 (PA). However, there is already considerable interannual variability in the patterns of fishing across the BSAI groundfish sectors, as environmental conditions and avoidance of PSC species have caused vessels to adjust their fishing patterns. Any shift in fishing is unlikely to occur outside of the existing footprint of the groundfish fishery in the BSAI.

The potential for incidental take of marine mammals may change from status quo and will be dependent on the options selected by the Council (e.g., gear conversion). However, the fisheries are unlikely to increase their take of marine mammals above the PBR, because they are currently well below that level in BSAI groundfish fisheries, and no options under Alternative 2a, 2b, or 3 (PA) are expected to result in significant increases in total fishing effort in the BSAI Pacific cod pot and trawl CV fisheries. Therefore, the incidental takes under Alternatives 2a, 2b, and 3 (PA) would not have a significant effect on marine mammals.

Prey Availability Effects

¹⁸⁶ A value of 10% was selected based on the analysis in section 3.3.2 that showed a 4.5% increase in pot gear harvested CQ would result in a closure of Zone 1 for the BSAI Pacific cod trawl CV sector. Although fishing could continue elsewhere, the threat of a closure for Zone 1 would likely impact other participants in the fishery and put pressure on the co-op(s) to limit the use of the pot gear conversion provision. We chose to analyze a potential increase in pot gear used to harvest 10% of the CQ to represent what is likely a “worst case” scenario, and unlikely a “realistic” scenario.

Harvests of marine mammal prey species in the BSAI groundfish fisheries may limit foraging success through localized depletion, overall reduction in prey biomass, and dispersion of prey, making it more energetically costly for foraging marine mammals to obtain necessary prey. Overall reduction in prey biomass may be caused by removal of prey or disturbance of prey habitat. The timing and location of fisheries relative to foraging patterns of marine mammals and the abundance of prey species may be a more relevant management concern than total prey removals.

The interaction of the BSAI groundfish fisheries, including the Pacific cod trawl CV fishery, with Steller sea lions, which potentially compete for prey, is comprehensively addressed in the Final Environmental Impact Statement for Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area (2014 Steller Sea Lion Protection Measures FEIS; NMFS 2014b.). The BSAI groundfish fisheries may impact availability of key prey species of Steller sea lions, harbor seals, northern fur seals, ribbon seals; and fin, minke, humpback, beluga, and resident killer whales. Animals with more varied diets (humpback whales) are less likely to be impacted than those that eat primarily pollock and salmon, such as northern fur seals. Table 3-18 shows the BSAI marine mammal species and their prey species that may be impacted by BSAI groundfish fisheries. Ultimately, season dates and allocations did not change, therefore there is no change from status on the effects to SSL.

Table 3-19 Prey species used by BSAI marine mammals that may be impacted by this action.

Species	Prey
Humpback whale	Zooplankton, schooling fish (pollock, herring, capelin, saffron, cod, sand lance, Arctic cod, and salmon)
Ribbon seal	Cod, pollock, capelin, eelpout, sculpin, flatfish, crustaceans, and cephalopods.
Harbor seal	Crustaceans, squid, fish (including salmon), and mollusks
Steller sea lion	Pollock, Atka mackerel, Pacific herring, Capelin, Pacific sand lance, Pacific cod, and salmon

Prey availability for several marine mammals may be impacted indirectly by any effects that fishing gear may have on benthic habitat. Table 3-19 lists marine mammals that may depend on benthic prey and known depths of diving. Diving activity may be associated with foraging. The essential fish habitat (EFH) EIS provides a description of the effects of groundfish fishing on benthic habitat (NMFS 2005). In the BSAI, estimated reductions of epifaunal and infaunal prey due to fishing are less than 1 percent for all substrate types. For living structure, overall impacts ranged between 3 percent and 7 percent depending on the substrate. In some local areas where pollock aggregate, effects are greater.

Prey availability for harbor seals and sea otters is not likely to be affected under any of the alternatives due to impacts to the benthic habitat, because they occur primarily along the coast where fishing is not conducted. Cook Inlet beluga whales also are not likely to have benthic habitat supporting prey species affected by the groundfish fishery because they do not range outside of Cook Inlet and do not overlap spatially with the trawl fisheries.

Table 3-20 Benthic dependent BSAI marine mammals, foraging locations, and diving depths

Species	Depth of diving and location
Ribbon seal	Mostly dive < 150 m on shelf, deeper off shore. Primarily in shelf and slope areas.
Harbor seal	Up to 183 m. Generally coastal.
Sperm whale	Up to 1,000 m, but generally in waters > 600 m.
Northern sea otter	Rocky nearshore < 75 m
Gray whale	Benthic invertebrates

Sources: Allen and Angliss 2010; Burns et al. 1981; <http://www.adfg.state.ak.us/pubs/notebook/marine/rib-seal.php>; http://www.afsc.noaa.gov/nmml/species/species_ribbon.php; <http://www.adfg.state.ak.us/pubs/notebook/marine/harseal.php>; <http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/spermwhale.htm>

The Harvest Specifications EIS determined that competition for key prey species under the status quo fishery is not likely to constrain the foraging success of marine mammals or cause population declines (NMFS 2007). The 2014 Steller Sea Lion Protection Measures FEIS (NMFS 2014b) provided an updated

review of BSAI groundfish fishery interactions with respect to prey availability. Based on a review of marine mammal diets, and an evaluation of the status quo harvests of potential prey species in the BSAI groundfish fishery, the effects of Alternative 1 on prey availability for marine mammals are not likely to cause population level effects.

The overall amount of effort in the fisheries will remain the same as under Alternative 1, as the overall Pacific cod TAC is not affected under any alternative. Shifts in the location or timing of fishing may occur as a result of Alternatives 2a, 2b and 3 (PA). However, there is already considerable interannual variability in the patterns of fishing across the BSAI groundfish sectors, as environmental conditions and avoidance of PSC species have caused vessels to adjust their fishing patterns. Any spatial or temporal shift in fishing is unlikely to occur outside of the existing spatial or temporal footprint of the trawl CV sector as none of the proposed alternatives alter the number of fishery participants or propose changing the location or timing of the fishery. Therefore, it is unlikely that Alternatives 2a, 2b or 3 (PA) would introduce a shift in fishing patterns to such an extent that it would constrain the availability of prey to marine mammals in such a way as to cause a population-level decline or impede recovery for more vulnerable populations. Any shift in fishing is unlikely to occur outside of the existing footprint of the groundfish fishery in the BSAI.

Disturbance Effects

The Harvest Specifications EIS contains a detailed description of the disturbance of marine mammals by the groundfish fisheries (NMFS 2007). The interaction of the BSAI groundfish fisheries, including the Pacific cod trawl CV sector, with Steller sea lions, which potentially compete for prey, is comprehensively addressed in the Steller Sea Lion Protection Measures EIS (NMFS 2014b). The EISs concluded that the status quo fishery does not cause disturbance to marine mammals at a level that may cause population level effects. Fishery closures limit the potential interaction between fishing vessels and marine mammals (e.g., 3-nm no groundfish fishing areas around Steller sea lion rookeries and walrus protection areas). Because disturbances to marine mammals under the status quo fishery are not likely to cause population level effects, the impacts of Alternative 1 are not significant.

The effects of the proposed establishment of a limited access privilege program for vessels participating in the BSAI Pacific cod trawl CV sector under Alternatives 2a, 2b and 3 (PA) on disturbance of marine mammals would be similar to the effects on incidental takes. Since fishing effort under any alternative will remain relatively consistent with current fishing patterns, this action is not likely to result in increased disturbance of marine mammals. None of the disturbance effects on other marine mammals under the alternatives being considered are expected to result in population level effects on marine mammals. Disturbance effects are likely to be localized and limited to a small portion of any particular marine mammal population. The potential disturbances to marine mammals under Alternatives 2a, 2b, and 3 (PA) are not likely to result in population level effects.

Cumulative Effects on Marine Mammals

Based on the preceding analysis, the impacts of this proposed action and alternatives on marine mammals are either non-existent or *de minimus*; therefore, there is no need to conduct an additional cumulative impact analysis.

4 Magnuson-Stevens Act and FMP Considerations

4.1. Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and a brief discussion of how the preferred alternative is consistent with the National Standards, where applicable. In recommending the preferred alternative, the Council has considered how to balance the national standards.

National Standard 1 — *Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.*

The PCTC Program would prevent overfishing, as under the current management system. The preferred alternative would result in allocations to cooperatives. Eligible LLP license holders would be required to join a cooperative to harvest the CQ in a rationalized manner. When harvesting the sector's BSAI Pacific cod allocation, members would be constrained by the cooperative's allocation. NMFS would hold members of the cooperative responsible for staying within their allocation of CQ. The program also allows NMFS to reallocate unharvested BSAI Pacific cod allocations and any remaining ICA to other sectors. Harvests under this program will ensure that the groundfish fisheries continue to achieve optimum yield without overfishing BSAI Pacific cod.

National Standard 2 — *Conservation and management measures shall be based upon the best scientific information available.*

Information in this analysis represents the most current, comprehensive set of information available, recognizing that some information (such as operational costs) is unavailable. Information previously developed on the BSAI trawl fisheries, as well as the most recent information available, has been incorporated into this analysis. It represents the best scientific information available. Additionally, expanded observer coverage under the preferred alternative would result in more precise estimates of PSC and incidentally caught species, which would provide additional information for future conservation and management measure analyses.

National Standard 3 — *To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.*

Section 3.2 describes the range of BSAI Pacific cod stock and the analysis considers effects throughout the range of the stock. BSAI Pacific cod, like all groundfish species are assessed at the scale of the BSAI FMP (Section 3.1), which is the geographic scope of the proposed action. These groundfish stocks would continue to be managed as single stocks throughout their range under the proposed program.

National Standard 4 — *Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be: (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.*

The PCTC Program does not discriminate against residents of different states or consider state residence in making allocations. The allocations that would occur under the preferred alternative would occur from within the already established overall BSAI Pacific cod trawl CV sector allocation. To be fair and equitable, initial allocations would be made in proportion to the level of engagement in the fishery during the qualification period, which captures both historical and recent participants. The PCTC Program will

promote conservation through use of tools available under a cooperative system that are not available to individual entities under the status quo, promoting wise use of the resource through stable harvests that eliminate the race for fish. In addition, the program will reduce the use of halibut and crab PSC for program participants. Ownership and use caps have been designed into the program to prevent individuals, corporations, or other entities from acquiring or controlling an excessive share of the fishery.

National Standard 5 — *Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.*

The PCTC Program would likely improve the efficiency of utilizing the BSAI Pacific cod resource allocated to the trawl CV sector. Under the current race for fish in the BSAI trawl CV Pacific cod fishery, it is generally understood that both the harvest and processing sectors may operate in an inefficient manner in comparison to a cooperatively managed fishery. While the allocation of quota under the preferred alternative would have economic consequences, the primary goals are to maintain or increase efficiency and equitably distribute interests in the BSAI Pacific cod trawl CV fishery. Benefits would be realized through the direct allocation of catch of the BSAI Pacific cod that is allocated to the trawl CV sector. No discards of BSAI Pacific cod that is allocated to the trawl CV sector would be permitted, which should have the effect of allowing more precise management of catch and could contribute to further reductions in bycatch and discards. The Aleutian Islands processor provisions under Option 6.1 in the preferred alternative would provide management flexibility and would increase efficiency by not risking stranding cod in years when no shoreplants are operating in the Aleutian Islands.

National Standard 6 — *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

Under the PCTC Program, changes in the availability of the BSAI Pacific cod fishery, BSAI halibut, and BSAI crab resources utilized by the trawl CV sector each year would be addressed through changes in the annual allocations and harvest specification process. These changes in allocations would be used to ensure conservation of the resource in the future.

In addition, the Program would allow portions of the BSAI Pacific cod trawl CV allocations that could go unharvested by the trawl CV sector to be reallocated to other sectors later in the fishing year. The preferred alternative would allocate only A and B season BSAI Pacific cod as CQ and likely provides a greater opportunity for reallocation of BSAI Pacific cod from the trawl CV sector to other sectors. Allocating only A and B season BSAI Pacific as CQ for cooperative fishing recognizes the historical fishing behavior for both the trawl CV sector in only harvesting a small percentage of its C season BSAI Pacific cod allocation and other sectors that routinely harvest and benefit from historical reallocations of BSAI Pacific cod from the trawl CV sector. With respect to contingencies, management of the fishery would allow for increased operational, spatial, and temporal flexibility in response to a range of potential changes in short- and long-term fishery conditions, decreasing vulnerability to adverse conditions and increasing resilience following adverse events for involved individuals, entities, and communities.

National Standard 7 — *Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

Cooperative agreements are likely to help provide flexibility and avoid duplicative and inefficient regulations. The PCTC Program would, in general, continue the existing allocation of BSAI Pacific cod TAC, halibut PSC limits, crab PSC limits, and GOA AFA non-exempt sideboard limits (with some changes to the calculations of PSC limits and sideboards). Using the existing mechanisms for allocations, PSC limits, and sideboard limits would avoid unnecessary duplication of existing management measures, which would help minimize costs of the program. For new conservation and management measures, the

analysis details, where relevant, the need for these new various management measures to ensure conservation of resources. In addition, the preferred alternative would establish management measures for ensuring adequate monitoring and enforcement that are consistent with the measures for other programs (i.e., CGOA Rockfish Program, Amendment 80 Program, and AFA Program).

National Standard 8 — *Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.*

To provide for the sustained participation of fishing communities (i.e., those communities substantially engaged in and/or dependent on the fishery), the PCTC Program features a history-based approach for initial allocation of quota shares that would be made in proportion to historical qualifying period levels of participation in the fishery. After initial allocation, decisions made by those receiving initial allocations have the potential to impact patterns of community engagement in or dependency on the fishery in several ways. However, several of the elements would function to minimize adverse impacts on fishing communities, including: a non-severability provision that could serve to limit consolidation of local fleets as vessels would be less likely to be tied up at the dock if not actively harvesting CQ; Gulf of Alaska Sideboards, which could serve to protect Gulf community fleets from increased competition resulting from rationalization of the BSAI Pacific cod fishery; Processor and Community Provisions, which could serve to stabilize landings in communities in proportion to historical qualifying period levels of BSAI Pacific cod processing; Aleutian Islands Processor Provisions, which could potentially have beneficial impacts to communities in the western Aleutian Islands region, including Adak, which has had an intermittent history of participating in the fishery; Transferability, which through the inability to sever catch histories from LLP licenses could serve to help limit consolidation of catch history associated quota between communities; and Ownership and Use Caps, which could potentially help limit future aggregation of harvesting and processing activity away from some communities and toward others.

National Standard 9 — *Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.*

Ending the race for fish under the preferred alternative would allow participants to harvest Pacific cod when catch rates are high and bycatch rates are low, which would serve to minimize bycatch. The PCTC Program would reduce halibut and crab bycatch for the trawl CV sector in the BSAI Pacific cod fishery by reducing PSC limits and through the ability of cooperatives to slow the fishery down to allow changes in fishing behavior to reduce bycatch of halibut and crab PSC and minimize the mortality of such bycatch. Since the Program would allocate targeted BSAI Pacific cod CQ to cooperatives, groundfish bycatch in the Pacific cod fishery and Pacific cod in other groundfish fisheries would be managed by NMFS using traditional bycatch management tools like an ICA and MRAs.

National Standard 10 — *Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

The PCTC Program would result in a reduction in the number of vessels on the fishing grounds and in a change of the timing of when vessels could choose to fish, which, in turn, could result in improved fishery safety. Under status quo conditions, economic incentives are created when competing under race-for-fish conditions to catch a share of the sector's apportionment that may entice a vessel operator to go to sea or continue fishing in weather conditions that may pose a higher operating risk than they would be willing to accept if they were operating under a cooperative system.

Management of the BSAI trawl CV Pacific cod fishery under the PCTC Program is expected to extend the A season from about 2-weeks in late January and early February to fishing through February and into March. The actual timing of effort during the A season would be influenced by multiple factors, including when Pacific cod are aggregated to improve catch rates, improving weather conditions, and desire to reduce conflicts with other fisheries, among others. The timing of B season effort (within the overall April 1 through June 10 timeframe) could also be influenced by improving weather conditions.

Although a person's allocation would not be jeopardized by decisions to delay fishing to reduce safety risks, some incentives may still exist for persons to fish in inclement weather - including market opportunities and operational cost savings.

4.2. Section 303(a)(9) Fisheries Impact Statement

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP or FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The RIR/EA prepared for this plan amendment constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the RIR/EA. The effects on participants in the fisheries and fishing communities are analyzed in the RIR chapter of the analysis (Section 2). The effects of the proposed action on safety of human life at sea are evaluated in Section 2.10.8 and under National Standard 10 in Section 4.1. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the FMP.

The preferred alternative affects the groundfish fisheries in the EEZ off Alaska, which are under the jurisdiction of the North Pacific Fishery Management Council. Impacts on participants in fisheries conducted in adjacent areas under the jurisdiction of other Councils are not anticipated to result from implementation of the preferred alternative.

4.3. Council's Ecosystem Vision Statement

In February 2014, the Council adopted, as Council policy, the following:

Ecosystem Approach for the North Pacific Fishery Management Council

Value Statement

The Gulf of Alaska, Bering Sea, and Aleutian Islands are some of the most biologically productive and unique marine ecosystems in the world, supporting globally significant populations of marine mammals, seabirds, fish, and shellfish. This region produces over half the nation's seafood and supports robust fishing communities, recreational fisheries, and a subsistence way of life. The Arctic ecosystem is a dynamic environment that is experiencing an unprecedented rate of loss of sea ice and other effects of climate change, resulting in elevated levels of risk and uncertainty. The North Pacific Fishery Management Council has an important stewardship responsibility for these resources, their productivity, and their sustainability for future generations.

Vision Statement

The Council envisions sustainable fisheries that provide benefits for harvesters, processors, recreational and subsistence users, and fishing communities, which (1) are

maintained by healthy, productive, biodiverse, resilient marine ecosystems that support a range of services; (2) support robust populations of marine species at all trophic levels, including marine mammals and seabirds; and (3) are managed using a precautionary, transparent, and inclusive process that allows for analyses of tradeoffs, accounts for changing conditions, and mitigates threats.

Implementation Strategy

The Council intends that fishery management explicitly take into account environmental variability and uncertainty, changes and trends in climate and oceanographic conditions, fluctuations in productivity for managed species and associated ecosystem components, such as habitats and non-managed species, and relationships between marine species. Implementation will be responsive to changes in the ecosystem and our understanding of those dynamics, incorporate the best available science (including local and traditional knowledge), and engage scientists, managers, and the public.

The vision statement shall be given effect through all of the Council's work, including long-term planning initiatives, fishery management actions, and science planning to support ecosystem-based fishery management.

In considering this action, the Council is being consistent with its ecosystem approach policy. This action expands the tools available for appropriate and conservation monitoring of fishing activities associated with the BSAI Pacific cod trawl CV fishery to include species caught incidentally. This is directly supportive of the Council's intention to provide best data possible for scientists, managers, and the public to ensure sustainable fisheries for managed species and their effects on associated ecosystem components.

5 Paperwork Reduction Act

This section provides a summary of the estimated costs and time burdens required to complete new and revised data submissions for the proposed PCTC program as well as a summary of the information needed to complete the submissions. Each of the listed data collections will require a new OMB approval for the burden on the public or revising an existing OMB burden approval as required under the PRA.

Data that are collected by NMFS to complete cooperative applications, issue QS, and collect cost recovery fees do not fall under an exemption to the PRA, the agency must comply with the PRA requirements when collecting these data.

The PRA requires that agencies estimate burden to understand what is involved for the public to comply with an information collection. Burden includes the value of both the time and the effort required to fulfill an information collection along with the financial cost. Some common burden activities include:

- Reviewing instructions,
- Compiling materials necessary for collection,
- Acquiring, installing, and utilizing technology and systems,
- Adjusting existing ways to comply with previous instructions and requirements,
- Searching data sources,
- Completing and reviewing collected information, and
- Compiling and sending information.

The agency is required to include the number of respondents, the frequency of response, and the total number of burden hours per year. To value all personnel burden hours, labor is supposed to be grouped by clerical and other unskilled workers, skilled-labor (including craft-labor and other technical workers), professionals and managers, and executives. All wages for these groupings must reflect the full cost of labor, including benefits. The Bureau of Labor Statistics' wage data will be used as the estimate unless better information is available to value those hours. The estimates will also be consistent with other current data submissions that collect similar data. For example, it is anticipated that the time and costs to comply with logbook submissions will be similar to other PRA time and costs estimates in place for other similarly situated sectors completing logbooks.

Data collections that fall under the PRA requirements in the PCTC program may be grouped into two classes. The first is new data collections that result directly from the Council's PCTC program. The second is modification of existing data collections that are currently approved under the PRA requirements.

Two electronic reporting systems that are used in Alaska fisheries are eFISH and eLandings. eFISH is a public web application that provides information and services to harvesters and processors in the following management programs or groups: IFQ, Crab Rationalization, CDQ Groundfish, GOA Rockfish, A80, AFA, and if implemented PCTC. It maintains information such as quota account balances and helps facilitate quota transfers; eLandings provides industry with the ability to submit landing reports, which in turn generates fish tickets that document IFQ fishermen/processor quota harvest, and processor production information from a single application. Both of these web-based applications are anticipated to be used to implement and manage the PCTC program.

Table 5-1 Summary table of preliminary PCTC Program data collections

<i>Data Collection</i>	<i>Collection Instrument</i>	<i>Respondent</i>	<i>Number of Respondents</i>	<i>Annual # of Responses</i>	<i>Total # of Annual Responses</i> <i>(c) = (a) x (b)</i>	<i>Burden Hrs. per Response</i>	<i>Total Annual Burden Hours</i>	<i>Cost per Hour</i>	<i>Total Annual Wage Burden Cost</i>
Application for PCTC Quota Shares	PCTC	LLP owner or processor representative	109	1	109	2	218	\$24.31	\$5,299.58
QS Appeals	PCTC	LLP owner or processor representative	5	1	5	4	20	\$24.31	\$486.20
90-day window QS transfer application	PCTC	QS holder	93	1	93	2	186	\$24.31	\$4,521.66
C/P limit application	PCTC	C/P Representative	2	1	2	2	4	\$45	\$180.00
PCTC Annual Cooperative Application	PCTC	Cooperative manager	10	1	10	2	20	\$75	\$1,500.00
LLP License Transfers	334	LLP license holder	5	1	5	1	5	\$24.31	\$131.55
Processor QS Transfer Application	PCTC	Processing QS holder	1	1	1	2	2	\$24.31	\$48.62
AI Pacific cod intent to Process	PCTC	Community Representative	2	1	2	16	32	\$54.86 (pollock intent to process currently \$37)	\$1,755.52
Inter-cooperative Transfers	PCTC	Same estimates as AFA inter-cooperative transfers	10	3	30	0.167	5	\$75	\$375.00
	711		10	1	10	0.02	0.17	\$75	\$12.50

Cost Recovery		Cooperative manager							
PCTC Annual Cooperative Reports	678	Cooperative manager	10	1	10	18	180	\$75	\$13,500.00
Shoreside Processor LR	515	Processor representative	10	30	300	0.5	150	24.31	\$5,146.50
Mothership LR	515	Mothership Rep	2	10	20	0.2	4	24.31	\$97.24
Observer Program	318	CV or Processor rep	10	2	20	0	0	\$0.00	\$0.00
eLogbooks	515	<60 ft CVs, added to existing estimate	7	3	21	0.25	5.25	\$24.31	\$127.63
Total					638		831.42		\$31,662.00

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Chris Oliver, American Seafoods
Brent Paine, UCB
Landry Price, YDFDA
Matt Robinson, BBEDC
Susan Robinson, Ocean Peace, Inc.
Chad See, Freezer Longline Coalition
Rebecca Skinner, Alaska Whitefish Trawlers Association
Rudy Tsukada, CVRF
Jeff Welbourn, Trident Seafoods
Paul Wilkins, CVRF
Sinclair Wilt, Westward Seafoods

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8 Appendices

8.1. Final October 2021 Council Motion

Council Motion

C-4 BSAI Pacific cod Trawl Catcher Vessel LAPP

October 13, 2021

This motion includes the staff recommended changes in Section 8.6 of the analysis to improve consistency to the language included in the Council’s purpose and need statement, elements, and options as adopted by the Council at its June 2021 meeting. This revised language is intended to improve consistency in terminology and language that would be used for implementing the Council’s recommendation and is not intended to substantively modify the elements or options.

Purpose and Need:

Over the last several years, total allowable catch for Pacific cod in the Bering Sea Aleutian Islands (BSAI) has steadily decreased. The pace of the fishery has contributed to an increasingly compressed season, resulting in decreased ability to maximize the value of the fishery, and negatively impacting all fishery participants (catcher vessels, motherships, shoreside processors, and communities). This race for fish also discourages fishing practices that can minimize bycatch and threatens the sustained viability of the fishery. The Council is considering the development of a cooperative-based program to improve the prosecution of the fishery, with the intent of promoting safety and stability in the harvesting and processing sectors, increasing the value of the fishery, minimizing bycatch to the extent practicable, providing for the sustained participation of fishery dependent communities, and ensuring the sustainability and viability of the resource.

Element 1. Cooperative Style System

Voluntary harvester cooperatives.

Holders of qualified trawl catcher vessel (CV) License Limitation Program (LLP) licenses under Element 2 must join a cooperative annually in association with an eligible licensed processor (Federal Fisheries Permit (FFP) or Federal Processing Permit (FPP) to harvest their trawl CV Pacific cod cooperative quota (CQ). Harvesters may change cooperatives and cooperative associations may change annually without penalty.

No limitation on the number of LLP license holders or qualifying catch history (legal landings) needed to form a cooperative.

No limitation on the number of cooperatives that may form.

Inter-cooperative formation is allowed.

Option: A minimum of three LLP licenses are needed to form a cooperative.

Element 2: Initial Allocation to LLP Licenses

Catch history to determine initial quota share (QS) allocations under this management action will not be considered beyond December 31, 2019.

2.1. Eligibility – Any LLP license assigned to a vessel that made qualifying catch history (legal landings) of targeted trawl CV BSAI Pacific cod during the qualifying years (or an LLP license as of December 31,

2019, assigned to an American Fisheries Act (AFA) trawl CV that had BSAI Pacific cod catch in 1997) and any transferable Aleutian Islands (AI) endorsement is eligible to receive QS.

2.2. Harvester Allocations – Eligible LLP licenses must be assigned to a cooperative for the cooperative to receive annual Pacific cod CQ. The initial allocation of QS will be made to eligible LLP licenses or transferable AI endorsements, with each LLP license's or transferable AI endorsement's QS based on the Pacific cod qualifying catch history (legal landings) of targeted BSAI Pacific cod authorized by that LLP license or a transferable AI endorsement¹⁸⁷ during the following qualifying years:

Option 2.2.2: 2009 – 2019

Suboption 2.2.1. Drop 1 Year

2.3. For the initial allocation of QS, qualifying catch history is attached to the LLP license at the time of harvest. If multiple LLP licenses authorized catch by a vessel, in the absence of an agreement provided by the LLP license holder at the time of application, qualifying catch history will be:

Option 2.3.2: assigned to an LLP license by the owner of the vessel that made the catch.

2.4. Annual CQ will be issued to each cooperative by NMFS based on the aggregate QS attached to LLP licenses that are assigned to the cooperative. NMFS will issue CQ by season and rely on the cooperatives to ensure the seasonal limits are not exceeded. Unused A season CQ may be rolled over to the B season. QS will not be designated for harvest in a management area (i.e., BS or AI) but may be harvested from either area.

2.5. Option to allocate A and B season BSAI trawl CV Pacific cod only:

A and B season trawl CV Pacific cod sector allocations (after deduction of the ICAs) will be allocated to cooperatives as CQ. Annual CQ attributable to each LLP license will be that LLP license's proportional share of the total QS.

The C season trawl CV Pacific cod allocation will remain 15 percent and remain a limited access trawl CV fishery and will be available to any trawl CV with an eligible groundfish LLP license with an applicable area endorsement. The C season limited access fishery will be managed as currently by NMFS, including management of incidental catches of Pacific cod in other directed fisheries. C season trawl CV sector apportionments (including A and B season ICAs and CQ remaining after June 10) that NMFS projects to go unused are subject to reallocation to other sectors under current reallocation rules.

2.6. All groundfish species not allocated to cooperatives will be managed by maximum retainable amounts (MRAs), as under current management.

2.7 The BSAI Pacific cod sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is removed for the A and B season upon implementation of this program. The BSAI Pacific cod sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(3)(ii) is maintained for the C season upon implementation of this program.

The BSAI halibut PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 40 is removed upon implementation of this program.

The BSAI crab PSC sideboard limit for AFA trawl CVs at 50 CFR 679.64(b)(4)(i) and Table 41 is maintained upon implementation of this program.

¹⁸⁷ Landings of targeted AI Pacific cod in the parallel fishery prior to receiving a transferable AI endorsement (2004 through September 13, 2009) in addition to legal landings of targeted Pacific cod in the parallel and federal fishery after receiving a transferable AI endorsement would qualify under the Council's criteria for catch history.

Element 3. Prohibited Species Catch Limits

The annual crab and halibut PSC limits available to the BSAI trawl CV Pacific cod sector will be established through the annual specification process as follows:

Option 3.2: Establish separate PSC limits for the BSAI trawl CV Pacific cod sector. Halibut PSC limit will be apportioned based on historical use (using qualifying years selected under Element 2) between the trawl CV sector and the AFA catcher processor (C/P) sector. Crab PSC limits will be apportioned based on the proportion of BSAI Pacific cod allocated to the trawl CV sector and the AFA C/P sector.

Option 3.3: Reduce PSC limit to BSAI trawl CV Pacific cod sector.

Suboption 3.3.1: Reduce halibut PSC limit by 25%.

Suboption 3.3.2: Reduce crab PSC limits by: 35%.

Red king crab Zone 1: (80% reduction from 2019 limit)

C. opilio Bycatch Limitation Zone: (69% reduction from 2019 limit)

C. bairdi Zone 1 and Zone 2: (48% reduction from 2019 limit)

Suboption 3.3.3: Phase in halibut PSC limit reduction over 2 years. One-half of the total halibut PSC limit reduction is implemented each year.

Option 3.4: Establish separate C season halibut and crab PSC apportionments (5%) before applying PSC limit reductions for the PCTC program.

Each cooperative will receive annual CQ of Pacific cod and apportionments of PSC limits based on members' qualifying catch histories (and processing histories, if applicable) to be harvested in accordance with the harvest cooperative agreement. The sector's PSC limits will be apportioned to cooperatives in proportion to its initial Pacific cod CQ apportionment and will be monitored at the cooperative level, resulting in a prohibition on directed fishing for Pacific cod (halibut PSC limit) or a prohibition on directed fishing for Pacific cod in a specified area (crab PSC limits) by that cooperative if the cooperative PSC limit apportionment is reached. PSC limits are transferable between cooperatives based on the same rules established for Pacific cod CQ.

Element 4: Gulf of Alaska (GOA) Sideboards

Option 4.1: All GOA non-exempt AFA CVs and AFA LLP licenses will be sideboarded (in aggregate for all GOA groundfish fishing activity) and for halibut PSC (on the annual amount of the total trawl halibut PSC limit), except for vessels when participating in the Central GOA Rockfish Program, based on their GOA catch history during the BSAI Pacific cod qualifying period.

Prohibit directed fishing in regulations for the GOA non-exempt AFA CVs and LLPs for Southeast Outside pollock, Western shallow-water flatfish, and both Central and Eastern deep-water flatfish, and Eastern Pacific Ocean perch.

Option 4.2: AFA GOA-exempt and non-AFA CVs assigned to LLP licenses and CVs assigned to under 60' LLP licenses with AI transferable endorsements that receive annual BSAI Pacific cod CQ will not be permitted to lease their BSAI Pacific cod CQ as a condition of benefiting from a GOA sideboard exemption. If the vessel assigned to the qualified GOA exempt LLP license does not fish the GOA during the calendar year, except for the Central GOA Rockfish Program, the BSAI Pacific cod CQ generated by the LLP license can be leased that calendar year. Cooperatives will be required

to monitor GOA AFA exempt and non-AFA vessels and vessels assigned to under 60' LLP licenses with AI transferrable endorsements to ensure they do not lease their BSAI Pacific cod CQ and implement a penalty structure for violations. Cooperatives will be required to report leasing activities and penalties issued in the BSAI Pacific cod cooperative annual report.

Suboption 4.2.1: AFA GOA-exempt, non-AFA CVs, and CVs assigned to under 60' LLP licenses with AI transferable endorsements with LLP licenses of less than 300 mt of average annual qualifying BSAI Pacific cod history may lease their BSAI Pacific cod CQ and benefit from the GOA sideboard exemption.

Element 5: Processor and Community Provisions

5.1. No closed class of processors; all processors with an eligible FPP or FPP are eligible to process BSAI Pacific cod CQ under this program (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships).

5.2. Limit (sideboard) on directed BSAI Pacific cod CQ that can be delivered by trawl CVs to eligible C/Ps acting as motherships. The sideboard will be assigned to the LLP license authorizing the C/P to act as a mothership in the BSAI Pacific cod fishery.

Option 5.2.1: Each eligible C/P acting as a mothership may process up to the higher of 1) 125% of the eligible C/P's processing history (percentage based on qualifying years selected in Element 2.2 no drop year); or 2) the history (percentage based on qualifying years selected under Element 2.2) from LLP licenses that are owned (in excess of 75%) directly or indirectly by the owner of a C/P LLP eligible for the offshore sector of the target non-CDQ BSAI Pacific cod trawl CV fishery (as of December 31, 2019), not to exceed 125% of the eligible C/P's processing history (percentage based on qualifying years selected in Element 2.2 no drop year).

5.4. Allocation of QS to processors (this option is only applicable to Bering Sea processors and eligible C/Ps if AI provisions are selected under element 6):

Onshore and offshore processors with an eligible FPP or FPP (subject to eligibility requirements under BSAI FMP Amendment 120 to limit C/Ps acting as motherships) that have history of processing in the federal BSAI Pacific cod trawl CV fishery will be eligible to receive a percentage of total QS based on each onshore processor's and offshore processor's processing history. To be used, the processor's CQ would be transferred to the CV cooperative.

If a processor holding QS does not associate with a cooperative, that processor's CQ will be divided among cooperatives in the same proportion as the processor's CQ assigned to individual cooperatives by the associated processor that year relative to total processor derived CQ that was issued that year.

If a processor associated with more than one cooperative during a year, the CQ derived from their processor permit would be divided between the cooperatives in the same proportion as the CQ derived from LLP licenses.

Option: A cooperative cannot assign a greater proportion of the CQ resulting from processor held QS to an LLP license owned by that processor for harvest by a vessel owned by that processor than the LLP license would have brought into the cooperative absent any processor held QS. The cooperative will monitor this provision and include reporting on harvest of CQ resulting from processor held QS in the BSAI Pacific cod cooperative annual report.

Percent of QS to be allocated to eligible processors:

Option 5.4.5: 22.5%

Processing history years (including any drop year option selected in element 2.2) to receive QS are the same as harvester years in Element 2.

Processors that are no longer active (no longer hold an FPP) would not be issued QS. The processing history associated with those processors would be deducted from the total amount of eligible processing history during the qualifying years when calculating the distribution of QS to processors.

Element 6: Aleutian Islands Processor Provisions

Under this element:

An AI shoreplant is defined consistent with vacated Amendment 113 regulations.

An AI shoreplant operating under the provisions of this element is exempt from the processing use cap in element 8.4.

All cooperatives will be required to establish an intercooperative agreement that describes how either the set-aside provision in option 6.1 will be administered by the cooperatives to ensure that harvests in the Bering Sea do not exceed the minimum set aside or shoreplant allocation amounts. This intercooperative agreement must establish how the cooperatives intend to harvest the set-aside or shoreplant QS in years when it applies. This intercooperative agreement must be provided as part of the annual cooperative application and is required before NMFS can issue CQ. A cooperative intending to harvest any amount of the set-aside must provide the cooperative's plan for coordinating harvest and delivery of the set-aside with an AI shoreplant in the cooperative application.

Option 6.1: In any year when the community of Adak and/or Atka files a notice of intent to process, require the cooperative(s) to reserve a set-aside for delivery to an AI shoreplant. The amount of the set-aside (AI CQ reserve) will be 12% of the BSAI CV trawl directed A season CQ and is in effect during the A and B season. Any remaining portion of the AI CQ reserve will be reallocated to cooperatives in the same proportion as the initial CQ if Adak and/or Atka withdraws its intent to operate notice during the A or B season.

The intercooperative agreement must establish how cooperatives would ensure that CVs < 60 feet LOA assigned to an LLP license with a transferable AI trawl endorsement have the opportunity to harvest a percentage of the AI CQ reserve for delivery to an AI shoreplant. Option 3: 10% of the AI CQ reserve.

NMFS will establish a separate AI Incidental Catch Allowance (ICA) and AI Directed Fishing Allowance (DFA) to support the AI CQ reserve.

When the AI CQ reserve is set equal to the AI DFA, directed fishing for Pacific cod in the AI may only be conducted by PCTC Program vessels that deliver their catch of AI Pacific cod to AI shoreplants for processing.

When the AI DFA is greater than the AI CQ reserve amount, the difference between the AI DFA and the AI CQ reserve will be available for directed fishing by all non-CDQ fishery sectors with sufficient A-season allocations and may be processed by any eligible processor.

Element 7. Transferability

7.1. Initially issued QS are attached to trawl CV LLP licenses and are non-severable from the LLP licenses. Transfer of an LLP license eligible for this program results in the transfer of any program eligibility and QS associated with the LLP license.

Suboption 7.1.1: For the LLP licenses associated with the non-exempt AFA vessels, within ninety (90) days of initial issuance of QS, the owners of the LLP licenses that are associated with AFA non-exempt CVs that had engaged in fish transfer agreements during the qualifying periods and whose QS allocation at initial issuance does not exceed the ownership cap in element 8.1 may transfer the QS between other LLP licenses associated with AFA non-exempt vessels subject to the ownership cap in element 8.1. After these transfers are approved by NMFS, the BSAI Pacific cod QS will no longer be severable from the LLP license to which it was reassigned unless modification is supported by an operation of law.

7.2. QS based on processing history are issued as separate permits, and the permit is only transferable to another processor. Permits issued to shoreside processors can only be transferred to other shoreside processors that hold an FPP. The QS is non-severable from the permit except in the case that transfer of the permit to another eligible processor would result in exceeding the use cap under Option 8.3. In that case, the portion of the QS over the cap is allowed to be severed from the permit and transferred to another eligible processor permit or shoreside processor that holds an FPP.

7.3. Annual Pacific cod CQ and PSC limits (whether derived from harvesting or processing histories) are transferable between cooperatives.

7.4. Post-delivery transfers of CQ are permitted but must be completed by August 1.

Element 8: Ownership and Use Caps

8.1. Harvester-issued QS. Processor-issued QS does not count toward this use cap. No person may hold or use more than option: 5% of the Pacific cod QS issued:

Option 8.1.1: using the individual and collective rule

Suboption 8.1: Persons over the cap at the time of QS issuance are grandfathered.

8.2. No vessel may harvest more than option: 5% of the annual Pacific cod CQ issued in the fishery.

Option 8.2.1: Vessels over the cap at the time of QS issuance are grandfathered. The grandfather provision is applied to the vessel designated on an LLP license that yields more than 5% of the annual Pacific cod CQ at the time of initial allocation. This grandfather provision is not transferrable if the LLP license is transferred to a new owner.

8.3. Processor-issued QS¹⁸⁸: No person may hold or use more than option: 20% of the Pacific cod QS:

Option 8.3.1: using the individual and collective rule

Suboption 8.3: Persons over the cap at the time of QS issuance are grandfathered.

8.4. No company may process more than 20% of the Pacific cod CQ.

Option 8.4.1: using the individual and collective rule

Option 8.4.2: Company over the cap at the time of QS issuance are grandfathered.

¹⁸⁸This cap refers to any QS initially issued to processors on a processor permit under Element 5.3.

Element 9. Cooperative Provisions

Annual cooperative applications must be filed on or before November 1 of the preceding year.

Cooperatives shall be formed by holders of qualified LLP licenses with trawl CV Pacific cod QS. Each LLP license may be assigned to one cooperative. A list of trawl CVs eligible to harvest a portion of that cooperative's CQ must be identified in the annual cooperative application.

Cooperatives are intended only to conduct and coordinate harvest activities of members and are not Fishermen's Collective Marketing Act (FCMA) cooperatives.

Membership agreements will specify that processor affiliated members cannot participate in any price setting negotiations, except as permitted by antitrust laws.

Element 10. Share duration

All QS and allowances under this program are revocable privileges that 1) may be revoked, limited or modified at any time; 2) shall not confer any right of compensation to the holder, if they are revoked, limited, or modified, and 3) shall not create or be construed to create any right, title or interest in or to any fish before the fish is harvested by the holder.

The duration of all QS and associated PSC apportionments is 10 years. These permits will be renewed before their expiration, unless revoked, limited, or modified.

Element 11. Monitoring

All vessels harvesting CQ will be in 100% observer coverage category. This element is not intended to modify the observer coverage exception provided for CVs delivering unsorted codends to a mothership or the current at-sea observer data transmission requirements for non-AFA trawl CVs for the first 3 years after implementation. Monitoring and enforcement provisions will be implemented to track quota, harvest, PSC, and use caps. Shoreside processors will be required to operate under a NMFS-approved Catch Monitoring and Control Plan (CMCP). The Council authorizes NMFS to report weekly vessel-level PSC information as authorized under Magnuson-Stevens Act (MSA) Sec 402(b)(2)(A).

Element 12. Reporting and Program Review

Each cooperative shall annually produce a report for the Council describing its membership, cooperative management, and performance in the preceding year including use of CQ derived from processor issued QS and harvest and delivery of the AI CQ reserve, if applicable.

Per the MSA, a formal detailed review of the program shall be undertaken 5 years after implementation, with additional reviews, at a minimum, each seven years thereafter.

Element 13. Cost recovery

A fee, not to exceed 3% of the ex-vessel value, will be charged on all program landings to cover the actual costs directly related to the management, data collection, and enforcement of the program.

The Council deems proposed regulations that clearly and directly flow from the provisions of this motion to be necessary and appropriate in accordance with section 303(c).

The Council authorizes the Executive Director and the Chairman to review the draft proposed regulations when provided by NMFS to ensure that the proposed regulations to be submitted to the Secretary under section 303(c) are consistent with these instructions.

8.2. MRA Tables

Table 8-1 Table 10 to 50 CFR §679—Gulf of Alaska Retainable Percentages

BASIS SPECIES		INCIDENTAL CATCH SPECIES (for DSR caught on catcher vessels in the SEO, see §679.20 (j) ⁶)																
Code	Species	Pollock	Pacific cod	DW Flat (2)	Rex sole	Flathead sole	SW Flat (3)	Arrow-tooth	Sablefish	Aggregated rockfish ⁽⁷⁾	SR/RE ERA (1)	DSR SEO (C/Ps only) (5)	Atka mackerel	Aggregated forage fish ⁽⁹⁾	Skates (10)	Other species (6)	Grenadiers (12)	Squids
110	Pacific cod	20	n/a ⁽⁹⁾	20	20	20	20	35	1	5	(1)	10	20	2	5	20	8	20
121	Arrowtooth	5	5	20	20	20	20	n/a	1	5	0	0	20	2	5	20	8	20
122	Flathead sole	20	20	20	20	n/a	20	35	7	15	7	1	20	2	5	20	8	20
125	Rex sole	20	20	20	n/a	20	20	35	7	15	7	1	20	2	5	20	8	20
136	Northern rockfish	20	20	20	20	20	20	35	7	15	7	1	20	2	5	20	8	20
141	Pacific ocean perch	20	20	20	20	20	20	35	7	15	7	1	20	2	5	20	8	20
143	Thornyhead	20	20	20	20	20	20	35	7	15	7	1	20	2	5	20	8	20
152/ 151	Shortraker/ rougheye (1)	20	20	20	20	20	20	35	7	15	n/a	1	20	2	5	20	8	20
193	Atka mackerel	20	20	20	20	20	20	35	1	5	(1)	10	n/a	2	5	20	8	20
270	Pollock	n/a	20	20	20	20	20	35	1	5	(1)	10	20	2	5	20	8	20
710	Sablefish	20	20	20	20	20	20	35	n/a	15	7	1	20	2	5	20	8	20
	Flatfish, deep-water ⁽²⁾	20	20	n/a	20	20	20	35	7	15	7	1	20	2	5	20	8	20
	Flatfish, shallow-water ⁽³⁾	20	20	20	20	20	n/a	35	1	5	(1)	10	20	2	5	20	8	20
	Rockfish, other (4)	20	20	20	20	20	20	35	7	15	7	1	20	2	5	20	8	20
172	Dusky rockfish	20	20	20	20	20	20	35	7	15	7	1	20	2	5	20	8	20
	Rockfish, DSR-SEO (5)	20	20	20	20	20	20	35	7	15	7	n/a	20	2	5	20	8	20
	Skates ⁽¹⁰⁾	20	20	20	20	20	20	35	1	5	(1)	10	20	2	n/a	20	8	20
	Other species (6)	20	20	20	20	20	20	35	1	5	(1)	10	20	2	5	n/a	8	20
	Aggregated amount of non-groundfish species ⁽¹¹⁾	20	20	20	20	20	20	35	1	5	(1)	10	20	2	5	20	8	20

Notes to Table 10 to 50 CFR §679	
1	Shortraker/rougheye rockfish
	SR/RE <i>Sebastes borealis</i> (shortraker) (152)
	<i>S. aleutianus</i> (rougheye) (151)
	SR/RE ERA Shortraker/rougheye rockfish in the Eastern Regulatory Area (ERA).
	Where an MRA is not indicated, use the MRA for SR/RE included under Aggregated Rockfish
	Catcher vessels using hook-and-line, pot, or jig gear are required to retain all rockfish. See 50 CFR §679.20(j).
2	Deep-water flatfish Dover sole (124), Greenland turbot (134), Kamchatka flounder (117), and deep-sea sole
3	Shallow-water flatfish Flatfish not including deep-water flatfish, flathead sole (122), rex sole (125), or arrowtooth flounder (121)

4	Other rockfish	Western Regulatory Area	means other rockfish and demersal shelf rockfish				
		Central Regulatory Area					
		West Yakutat District					
		Southeast Outside District	means other rockfish				
	Other rockfish						
	<i>S. aurora</i> (aurora) (185)		<i>S. variegates</i> (harlequin)(176)		<i>S. brevispinis</i> (silvergry)(157)		
	<i>S. melanostomus</i> (blackgill)(177)		<i>S. wilsoni</i> (pygmy)(179)		<i>S. diploproa</i> (splitnose)(182)		
	<i>S. paucispinis</i> (bocaccio)(137)		<i>S. babcocki</i> (redbanded)(153)		<i>S. saxicola</i> (stripetail)(183)		
	<i>S. goodei</i> (chillipepper)(178)		<i>S. proriger</i> (redstripe)(158)		<i>S. miniatus</i> (vermilion)(184)		
	<i>S. crameri</i> (darkblotch)(159)		<i>S. zacentrus</i> (sharpchin)(166)		<i>S. reedi</i> (yellowmouth)(175)		
<i>S. elongatus</i> (greenstriped)(135)		<i>S. jordani</i> (shortbelly)(181)					
<i>S. entomelas</i> (widow)(156)		<i>S. flavidus</i> (yellowtail)(155)					
In the Eastern Regulatory Area only, Other rockfish also includes <i>S. polypsinis</i> (northern)(136)							
5	Demersal shelf rockfish (DSR)	<i>S. pinniger</i> (canary)(146)	<i>S. maliger</i> (quillback)(147)		<i>S. ruberrimus</i> (yelloweye)(145)		
		<i>S. nebulosus</i> (china)(149)	<i>S. helvomaculatus</i> (rosethorn)(150)				
		<i>S. caurinus</i> (copper)(138)	<i>S. nigrocinctus</i> (tiger)(148)				
		DSR-SEO = Demersal shelf rockfish in the Southeast Outside District (SEO). Catcher vessels in the SEO have full retention of DSR (see 50 CFR §679.20(j)).					
6	Other species	Sculpins (160)	Octopuses (870)	Sharks (689)			
7	Aggregated rockfish	Aggregated rockfish (see 50 CFR §679.2) means any species of the genera <i>Sebastes</i> or <i>Sebastolobus</i> except <i>Sebastes ciliates</i> (dark rockfish), <i>Sebastes melanops</i> (black rockfish), and <i>Sebastes mystinus</i> (blue rockfish), except in:					
		Southeast Outside District	where DSR is a separate species group for those species marked with an MRA				
		Eastern Regulatory Area	where SR/RE is a separate species group for those species marked with an MRA				
		Catcher vessels using hook-and-line, pot, or jig gear are required to retain all rockfish. See 50 CFR §679.20(j).					
8	n/a	Not applicable					
Notes to Table 10 to 50 CFR §679							
9	Aggregated forage fish (all species of the following taxa)	Bristlemouths, lightfishes, and anglemouths (family <i>Gonostomatidae</i>)			209		
		Capelin smelt (family <i>Osmeridae</i>)			516		
		Deep-sea smelts (family <i>Bathylagidae</i>)			773		
		Eulachon smelt (family <i>Osmeridae</i>)			511		
		Gunnels (family <i>Pholidae</i>)			207		
		Krill (order <i>Euphausiacea</i>)			800		
		Laternfishes (family <i>Myctophidae</i>)			772		
		Pacific Sand fish (family <i>Trichodontidae</i>)			206		
		Pacific Sand lance (family <i>Ammodytidae</i>)			774		
		Pricklebacks, war-bonnets, eelblennys, cockscombs and shannys (family <i>Stichaeidae</i>)			208		
		Surf smelt (family <i>Osmeridae</i>)			515		
		10	Skates Species and Groups	Alaska (<i>Bathyraja. Parmifera</i>)			703
				Aleutian (<i>B. aleutica</i>)			704
Whiteblotched (<i>Raja binoculata</i>)				705			
Big Skates (<i>Raja binoculata</i>)				702			
Longnose Skates (<i>R. rhina</i>)				701			
Other Skates (<i>Rathyraja</i> and <i>Raja</i> spp.)				700			
11	Aggregated non-groundfish	All legally retained species of fish and shellfish, including IFQ halibut, that are not listed as FMP groundfish in Tables 2a and 2c to this part.					
12	Grenadiers	Giant grenadiers (<i>Albatrossia pectoralis</i>)			214		
		Other grenadiers (all grenadiers that are not Giant grenadiers)			213		

Table 8-2 Table 11 to 50 CFR §679—BSAI Retainable Percentages

BASIS SPECIES		INCIDENTAL CATCH SPECIES																	
Code	Species	Pollock	Pacific cod	Atka mackerel	Alaska plaice	Arrow-tooth	Kamchatka	Yellow fin sole	Other flatfish ²	Rock sole	Flath ead sole	Greenland turbot	Sablefish ¹	Short-raker/roughey e ⁹	Aggregated rockfish ⁶	Squids ⁷	Aggregated forage fish ⁷	Other species ⁴	Grenadi ers ⁽⁷⁾
110	Pacific cod	20	na ⁵	20	20	35	35	20	20	20	20	1	1	2	5	20	2	20	8
121	Arrowtooth	20	20	20	20	na	20	20	20	20	20	7	1	2	5	20	2	3	8
117	Kamchatka	20	20	20	20	20	na	20	20	20	20	7	1	2	5	20	2	3	8
122	Flathead sole	20	20	20	35	35	35	35	35	35	na	35	15	7	15	20	2	20	8
123	Rock sole	20	20	20	35	35	35	35	35	na	35	1	1	2	15	20	2	20	8
127	Yellowfin sole	20	20	20	35	35	35	na	35	35	35	1	1	2	5	20	2	20	8
133	Alaska Plaice	20	20	20	na	35	35	35	35	35	35	1	1	2	5	20	2	20	8
134	Greenland turbot	20	20	20	20	35	35	20	20	20	20	na	15	7	15	20	2	20	8
136	Northern	20	20	20	20	35	35	20	20	20	20	35	15	7	15	20	2	20	8
141	Pacific Ocean perch	20	20	20	20	35	35	20	20	20	20	35	15	7	15	20	2	20	8
152/151	Shortraker/Rougheye	20	20	20	20	35	35	20	20	20	20	35	15	na	5	20	2	20	8
193	Atka mackerel	20	20	na	20	35	35	20	20	20	20	1	1	2	5	20	2	20	8
270	Pollock	na	20	20	20	35	35	20	20	20	20	1	1	2	5	20	2	20	8
710	Sablefish ¹	20	20	20	20	35	35	20	20	20	20	35	na	7	15	20	2	20	8
	Other flatfish ²	20	20	20	35	35	35	35	na	35	35	1	1	2	5	20	2	20	8
	Other rockfish ³	20	20	20	20	35	35	20	20	20	20	35	15	7	15	20	2	20	8
	Other species ⁴	20	20	20	20	35	35	20	20	20	20	1	1	2	5	20	2	na	8
	Aggregated amount non-groundfish species ⁸	20	20	20	20	35	35	20	20	20	20	1	1	2	5	20	2	20	8

¹ **Sablefish:** for fixed gear restrictions, see 50 CFR §679.7(f)(3)(ii) and (f)(11).

² **Other flatfish** includes all flatfish species, except for Pacific halibut (a prohibited species), flathead sole, Greenland turbot, rock sole, yellowfin sole, Alaska plaice, arrowtooth flounder and Kamchatka flounder.

³ **Other rockfish** includes all “rockfish” as defined at 50 CFR §679.2, except for Pacific ocean perch; and northern, shortraker, and roughey rockfish.

⁴ The **Other species** includes sculpins, sharks, skates, and octopuses.

⁵ **na** = not applicable

⁶ **Aggregated rockfish** includes all “rockfish” as defined at 50 CFR §679.2, except shortraker and roughey rockfish. Catcher vessels using hook-and-line, pot, or jig gear are required to retain all rockfish. See 50 CFR §679.20(j).

⁷ **Forage fish, grenadiers, and squids** are all defined at Table 2c to this part.

⁸ All legally retained species of fish and shellfish, including CDQ halibut and IFQ halibut that are not listed as FMP groundfish in Tables 2a and 2c to this part.

⁹ Catcher vessels using hook-and-line, pot, or jig gear are required to retain all rockfish. See 50 CFR §679.20(j).

8.3. Additional EDR Crew Tables

Table 8-3 Crew members aboard BSAI Pacific cod trawl CVs for which EDR crew data exist by state or territory of crew residence address and CV ownership address, all years 2015-2019 combined (number of distinct crew license numbers).

Crew Member Residence Address State or Territory (number of communities represented in data)	Catcher Vessel Ownership Address Community					Grand Total
	Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States	
Alaska (13)	92	54	13	12	0	167
Washington (44)	15	111	26	5	3	159
Oregon (29)	24	56	4	19	1	104
California (9)	2	12	0	0	1	15
Florida (4)	0	5	0	1	0	6
Montana (3)	1	4	0	0	0	5
Arizona (3)	2	2	0	0	0	4
Colorado (2)	2	1	0	0	0	3
Hawaii (2)	0	3	0	0	0	3
Kentucky (1)	0	3	0	0	0	3
Connecticut (1)	0	2	0	0	0	2
Georgia (1)	0	2	0	0	0	2
Illinois (2)	2	0	0	0	0	2
Minnesota (1)	0	2	0	0	0	2
New York (1)	0	2	0	0	0	2
Ohio (2)	1	1	0	0	0	2
Tennessee	1	1	0	0	0	2
American Samoa (1)	0	1	0	0	0	1
Idaho (1)	0	1	0	0	0	1
Massachusetts (1)	0	0	1	0	0	1
New Mexico (1)	0	1	0	0	0	1
Rhode Island (1)	0	1	0	0	0	1
South Carolina (1)	1	0	0	0	0	1
Texas (1)	0	1	0	0	0	1
Wisconsin (1)	0	1	0	0	0	1
Unknown	42	32	14	16	3	103
Grand Total	185	298	58	53	8	593

Source: GOA trawl EDR data.

Table 8-4 Crew members aboard BSAI Pacific cod trawl CVs for which EDR crew data exist by community of crew residence address and CV ownership address, by year 2015-2018 (number of distinct crew license numbers).

2015							2016						
Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total	Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total
	Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States			Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States	
Kodiak	5	7	7			19	Kodiak	10	15	2			26
Chiniak	1					1	Chiniak						
King Cove							King Cove						
Sand Point							Sand Point						
Unalaska/Dutch Harbor							Unalaska/Dutch Harbor						
Kenai							Kenai		1				1
Soldotna		1				1	Soldotna		1				1
Anchor Point							Anchor Point						
Anchorage/Girdwood	2			1		3	Anchorage/Girdwood		1				1
Palmer	1	1				2	Palmer		1				1
Wasilla							Wasilla						
Petersburg							Petersburg		1				1
Haines							Haines						
Seattle MSA Washington		4		1		5	Seattle MSA Washington		23		3		26
Other Washington		4		8		12	Other Washington		3		4		7
Lincoln County Oregon	3	7		1		11	Lincoln County Oregon	5	10				15
Other Oregon	3	5		1		9	Other Oregon	4	5				9
Other States/Territories		5				5	Other States/Territories	1	7				8
Unknown	3	3		5	1	11	Unknown	13	7		2	1	22
TOTAL 2015	18	37	24	1	1	79	TOTAL 2016	33	75	11	1	0	118
2017							2018						
Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total	Crew Member Residence Address Community	Catcher Vessel Ownership Address Community					Grand Total
	Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States			Kodiak Alaska	Seattle MSA Washington	Other Washington	Lincoln Co. Oregon	Other States	
Kodiak	23	8	2		3	36	Kodiak	30	9	1		2	42
Chiniak	1					1	Chiniak						
King Cove							King Cove		1				1
Sand Point							Sand Point		2				2
Unalaska/Dutch Harbor		1				1	Unalaska/Dutch Harbor		1				1
Kenai							Kenai						
Soldotna							Soldotna						
Anchor Point	2	1				3	Anchor Point	3					3
Anchorage/Girdwood	1					1	Anchorage/Girdwood						
Palmer	1	1			1	3	Palmer	1					1
Wasilla					1	1	Wasilla						
Petersburg		1				1	Petersburg		2				2
Haines							Haines						
Seattle MSA Washington	4	24		2		30	Seattle MSA Washington	1	21		2	1	26
Other Washington	2	8		2		12	Other Washington	1	8		6	1	17
Lincoln County Oregon	2	11		2	5	20	Lincoln County Oregon	1	15			8	24
Other Oregon	1	4			2	7	Other Oregon	1	5			3	10
Other States/Territories	4	12		1		17	Other States/Territories	4	12				17
Unknown	9	3		1	2	14	Unknown	4	17		5	11	35
TOTAL 2017	50	74	10	14	0	147	TOTAL 2018	46	92	4	26	4	180

Source: GOA trawl EDR data

Table 8-5 Crew members aboard BSAI Pacific cod trawl CVs for which EDR crew data exist by community of crew residence address, CV ownership address, and crew license type, 2019 (number of distinct crew license numbers).

Trawl CV		Crew Member		License Type			Grand Total
State	City	State	City	ADF&G Crew License	CFEC Gear Operator Permit	Blank	
Alaska	KODIAK	Alaska	Anchor Point	2	1		3
			Dutch Harbor	1			1
			Kodiak	16	12		28
			Palmer	1			1
		Alaska Total		20	13		33
		Washington	Bellingham	1			1
			Olympia	1			1
			Port Orchard	1			1
			Seattle	1			1
			Sequim	1			1
			Snohomish	1	1		2
			Tacoma	1			1
		Washington Total		7	1		8
		Oregon	Depoe Bay	1			1
			Portland	1			1
			Princeville	1			1
			South Beach	1			1
		Oregon Total		4			4
		California	Napa	1			1
		California Total		1			1
Illinois	Sugar Grove	1			1		
Illinois Total		1			1		
Tennessee	Greeneville	1			1		
Tennessee Total		1			1		
(blank)	(blank)	1		1	13	15	
(blank) Total		1		1	13	15	
KODIAK Total		35	15	13	63		
Alaska Total		35	15	13	63		
Washington	BELLINGHAM	(blank)	(blank)			1	1
		(blank) Total				1	1
		BELLINGHAM Total				1	1
	HOLUALOA	Washington	Seattle	1			1
		Washington Total		1			1
		(blank)	(blank)			2	2
		(blank) Total				2	2
	HOLUALOA Total		1	2		3	
	RENTON	(blank)	(blank)			3	3
		(blank) Total				3	3
		RENTON Total				3	3
	SEATTLE	Alaska	Kodiak	5	1		6

Trawl CV		Crew Member		License Type			Grand Total
State	City	State	City	ADF&G Crew License	CFEC Gear Operator Permit	Blank	
		Alaska Total		5	1		6
		Washington					
			Anacortes		1		1
			Auburn	1			1
			Everett		1		1
			Kirkland	1			1
			Lakewood	1			1
			Mill Creek	1	1		2
			Poulsbo	1			1
			Quilcene	1			1
			Seattle	13	2		15
			Snohomish	1			1
			Tacoma	1			1
			Tumwater	1			1
		Washington Total		22	5		27
		Oregon					
			Albany	1			1
			Bend	1	1		2
			Lincoln City	1			1
			Newport		1		1
			Salem	2			2
			Toledo	2	1		3
		Oregon Total		7	3		10
		California					
			Clearlake				
			Oaks	1			1
			Garden Grove	1			1
			Porterville	1			1
			Simi Valley	1			1
		California Total		4			4
		Arizona					
			Phoenix	1			1
		Arizona Total		1			1
		Connecticut					
			Niantic	2			2
		Connecticut Total		2			2
		Georgia					
			Richmond Hill	1			1
		Georgia Total		1			1
		Kentucky					
			Versailles	1			1
		Kentucky Total		1			1
		Minnesota					
			Hastings	1			1
		Minnesota Total		1			1
		Rhode Island					
			Cumberland	1			1
		Rhode Island Total		1			1
		Texas					
			Marion	1			1
		Texas Total		1			1
		(blank)					
			(blank)			5	5
		(blank) Total				5	5
	SEATTLE Total			46	9	5	60
Washington Total				47	11	8	66
Oregon							
	NEWPORT						
		Alaska					
			Anchor Point		1		1
			Haines		1		1
			Kodiak	2	2		4
			Palmer	1			1

Trawl CV		Crew Member		License Type			Grand Total	
State	City	State	City	ADF&G Crew License	CFEC Gear Operator Permit	Blank		
	NEWPORT	Alaska Total		3		3	6	
		Washington						
			Bremerton	1				1
			Tacoma	1				1
		Washington Total		2				2
		Oregon						
			Philomath			1		1
		Oregon Total				1		1
		Florida						
			Palatka	1				1
		Florida Total		1				1
		(blank)						
		(blank)						8
	(blank) Total						8	
	NEWPORT Total				6	4	8	18
	SILETZ	Alaska						
			Kodiak	1		1		2
		Alaska Total			1	1		2
		Washington						
			Aberdeen	1				1
		Washington Total		1				1
		Oregon						
			Eugene	1				1
		Newport				1	1	
		Toledo	1				1	
Oregon Total		2		1		3		
(blank)								
	(blank)					1		
(blank) Total						1		
SILETZ Total				4	2	1	7	
Oregon Total				10	5	9	24	
Grand Total				91	30	29	150	

8.4. Additional BSAI Pacific Cod Hook-and-Line and Pot Catcher Vessels <60' Community Engagement Tables

Table 8-6 BSAI Pacific cod HAL CVs < 60' ex-vessel gross revenue by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars).

Community	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020***	Annual Average 2004-2019 (\$ millions)	Annual Average 2004-2019 (percent)
Unalaska/Dutch Harbor	*	0.28	0.14	0.50	0.47	0.12	0.20	0.27	**	0.56	**	*	0.00	0.00	*	*	*	\$0.26	38.1%
All Other Communities	**	0.69	0.62	0.65	1.1	0.34	0.05	0.14	*	0.16	*	**	*	**	**	**	**	\$0.43	61.9%
GRAND TOTAL		0.46	0.97	0.76	1.16	0.46	0.24	0.41	0.64	0.72	1.49	0.51	*	*	0.73	0.92	0.74	\$0.69	100.0%

*Denotes confidential data.

**Denotes data suppressed to protect the confidentiality of data in other cells.

***2020 data added for comparative purposes but are not included in average annual calculations (see text).

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 8-7 BSAI Pacific cod HAL CVs < 60' ex-vessel gross revenue diversification by community of vessel historical ownership address, all communities, 2004-2019 (millions of 2019 real dollars).

Geography	Annual Average Number of BSAI Pcod HAL CVs < 60' 2004-2019	BSAI Pcod HAL CVs < 60' Annual Average Ex-Vessel Gross Revenues from BSAI Pcod Only 2004-2019 (\$ millions)	BSAI Pcod HAL CVs < 60' Annual Average Total Ex-Vessel Gross Revenues from All Area, Gear, and Species Fisheries 2004-2019 (\$ millions)	BSAI Pcod HAL CVs < 60' BSAI Pcod Ex-Vessel Value as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Unalaska/Dutch Harbor	2.8	\$0.26	\$1.12	23.54%
All Other Communities	6.4	\$0.43	\$4.47	9.62%
Grand Total	9.3	\$0.69	\$5.59	12.41%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 8-8 BSAI Pacific cod HAL CVs < 60' and all CV ex-vessel gross revenue diversification by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars).

Geography	Annual Average Number of BSAI Pcod HAL CVs < 60' 2004-2019	Annual Average Number of All Commercial Fishing CVs in those Same Communities (the "Community CV Fleet") 2004-2019	All Commercial Fishing CVs Annual Average Ex-Vessel Gross Revenues from BSAI Pcod HAL < 60' Only 2004-2019 (\$ millions)	All Commercial Fishing CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2004-2019 (\$ millions)	All Commercial Fishing Vessels BSAI Pcod HAL < 60' Ex-Vessel Gross Revenue as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Unalaska/Dutch Harbor	2.8	20.6	\$0.26	\$4.79	5.51%
All Other Communities	6.4	2,690.9	\$0.43	\$1,066.00	0.04%
Grand Total	9.3	2,711.5	\$0.69	\$1,070.80	0.06%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 8-9 BSAI Pacific cod pot CVs < 60' ex-vessel gross revenue by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars).

Community	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020***	Annual Average 2004-2019 (\$ millions)	Annual Average 2004-2019 (percent)	
Unalaska/Dutch Harbor	*	0.07	0.32	0.44	0.84	0.61	0.83	1.33	*	0.78	1.81	1.65	1.86	1.65	1.01	1.20	0.96	\$0.97	9.6%	
Kodiak	1.51	1.34	3.39	2.48	3.15	*	1.11	2.74	2.95	2.27	2.88	2.43	3.97	5.28	5.94	7.25	4.87	\$3.06	30.3%	
All Other Communities	**	0.35	0.12	1.36	3.03	**	1.90	2.19	**	4.87	10.45	7.07	11.70	12.98	15.76	17.96	9.86	\$6.08	60.1%	
GRAND TOTAL		1.89	1.76	3.83	4.28	7.02	2.91	3.84	6.26	9.28	7.92	15.14	11.14	17.54	19.91	22.71	26.41	15.68	\$10.11	100.0%

*Denotes confidential data.

**Denotes data suppressed to protect the confidentiality of data in other cells.

***2020 data added for comparative purposes but are not included in average annual calculations (see text).

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 8-10 BSAI Pacific cod pot CVs < 60' ex-vessel gross revenue diversification by community of vessel historical ownership address, all communities, 2004-2019 (millions of 2019 real dollars).

Geography	Annual Average Number of BSAI Pcod Pot CVs < 60' 2004-2019	BSAI Pcod Pot CVs < 60' Annual Average Ex-Vessel Gross Revenues from BSAI Pcod Only 2004-2019 (\$ millions)	BSAI Pcod Pot CVs < 60' Annual Average Total Ex-Vessel Gross Revenues from All Area, Gear, and Species Fisheries 2004-2019 (\$ millions)	BSAI Pcod Pot CVs < 60' BSAI Pcod Ex-Vessel Value as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Unalaska/Dutch Harbor	3.9	\$0.97	\$2.08	46.53%
Kodiak	5.5	\$3.06	\$7.17	42.70%
All Other Communities	11.9	\$6.08	\$9.04	67.31%
Grand Total	21.3	\$10.11	\$18.29	55.29%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 8-11 BSAI Pacific cod pot CVs < 60' and all CV ex-vessel gross revenue diversification by community of vessel historical ownership address, 2004-2019 (millions of 2019 real dollars).

Geography	Annual Average Number of BSAI Pcod Pot CVs < 60' 2004-2019	Annual Average Number of All Commercial Fishing CVs in those Same Communities (the "Community CV Fleet") 2004-2019	All Commercial Fishing CVs Annual Average Ex-Vessel Gross Revenues from BSAI Pcod Pot < 60' Only 2004-2019 (\$ millions)	All Commercial Fishing CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2004-2019 (\$ millions)	All Commercial Fishing Vessels BSAI Pcod Pot < 60' Ex-Vessel Gross Revenue as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2004-2019
Unalaska/Dutch Harbor	3.9	20.6	\$0.97	\$4.79	20.22%
Kodiak	5.5	259.6	\$3.06	\$126.45	2.42%
All Other Communities	11.9	2,947.8	\$6.08	\$1,146.14	0.53%
Grand Total	21.3	3,227.9	\$10.11	\$1,277.38	0.79%

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

8.5. Supplement to the Environmental Assessment: Result of Inclusion of the 2018 Red King Crab (Zone 1) PSC catch from the BSAI Pacific cod pot CV ≥ 60 ft Sector in the Analysis of Impacts.

The reader is referred to Section 3.3 for context to this appendix.

Table 8-12 PSC in the BSAI Pacific cod pot CV ≥ 60 ft sector as a result of a range of trawl CQ conversion to pot gear harvest. Values are based off of the 2015 to 2020 average PSC catch shown in Table 2-17. Halibut values are in MT while crab and salmon values are in individuals. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

PSC Species	PSC catch in pot CV ≥ 60 ft sector after CQ reduction				
	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	0.6	0.6	0.6	0.7	0.9
Red King crab (Zone 1)	45,366	46,037	51,227	57,715	70,644
<i>C. bairdi</i> (Zone 1)	70,183	71,221	79,250	89,286	109,289
<i>C bairdi</i> (Zone 2)	12,458	12,643	14,068	15,849	19,400
<i>C. opilio</i> PSC (COBLZ)	240.1	243.7	271.2	305.5	374.0
Chinook	0.0	0.0	0.0	0.0	0.0
Non-chinook	0.0	0.0	0.0	0.0	0.0

Table 8-13 Resulting increase in PSC in the BSAI Pacific cod pot CV ≥ 60 ft sector as a result of a range of trawl CQ conversion to pot gear harvest. Halibut values are in MT while crab and salmon values are in individuals. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV ≥ 60 ft sector).

PSC Species	Increase in PSC catch in pot cod CV ≥ ft CV sector				
	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	0.01	0.02	0.08	0.16	0.32
Red King crab (Zone 1)	626	1,297	6,487	12,975	25,904
<i>C. bairdi</i> (Zone 1)	969	2,007	10,036	20,072	40,075
<i>C bairdi</i> (Zone 2)	172	356	1,782	3,563	7,114
<i>C. opilio</i> PSC (COBLZ)	3	7	34	69	137
Chinook	0.00	0.00	0.00	0.00	0.00
Non-chinook	0.00	0.00	0.00	0.00	0.00

Table 8-14 Total hypothetical PSC harvest by the BSAI Pacific cod trawl CV sector as a result of the gear conversion scenarios. Halibut values are in MT while crab and salmon values are in individuals. Values are generated by added the values of Table 3-53 to the values of Table 3-7. Column headers provide the percent reduction in effort/harvest from the trawl CV fishery and (the percent increase in effort/harvest in the pot CV \geq 60 ft sector).

BSAI Trawl CV Sector PSC as a result of gear conversion scenarios.					
PSC Species	0.5% (1.4%)	1% (2.9%)	5% (14.5%)	10% (29%)	20% (59%)
Halibut mortality (mt)	-1.20	-2.40	-11.99	-23.97	-47.94
Red King crab (Zone 1)	625	1,294	6,472	12,944	25,843
<i>C. bairdi</i> (Zone 1)	938	1,945	9,723	19,447	38,824
<i>C bairdi</i> (Zone 2)	168	348	1,739	3,477	6,942
<i>C. opilio</i> PSC (COBLZ)	-0.20	-0.17	-0.83	-1.65	-3.54
Chinook	-5.24	-10.47	-52.37	-104.73	-209.47
Non-chinook	-0.56	-1.12	-5.59	-11.18	-22.37