

# **PUBLIC REVIEW DRAFT**

**Regulatory Impact Review  
for Proposed Regulatory Amendment to:**

## **Remove the prohibition on continuing to fish after a partial offload in the BSAI Crab Rationalization Program**

**December 2019**

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**Abstract:** This Regulatory Impact Review examines proposed management measures that would apply exclusively to the king and Tanner crab fisheries in the Bering Sea/ Aleutian Islands Crab Rationalization Program fisheries. The measure under consideration includes removing the prohibition against continuing to fish in a Bering Sea/ Aleutian Islands Crab Rationalization Program fishery once off-loading has commenced and until all crab rationalization program crab are landed.

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## List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
ACA	Adak Community Allocation
ADF&G	Alaska Department of Fish and Game
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea/ Aleutian Islands
BSS	Bering Sea snow crab ( <i>C. opilio</i> )
BBR	Bristol Bay red king crab
CPUE	Catch per unit effort
CFR	Code of Federal Regulations
C/P	Catcher/processor
CV	Catcher vessel
CDQ	Community Development Quota
CIF	Confidential Interview Form
CR Program	Crab Rationalization Program
DFL	Daily Fishing Logbook
EAG	Eastern Aleutian Islands (Dutch Harbor) golden king crab – East of 174° W
EBT	Eastern Bering Sea Tanner crab ( <i>C. bairdi</i> ) – East of 166° W
E.O.	Executive Order
FDL	Federal Daily Logbook
FMP	fishery management plan
FR	<i>Federal Register</i>
ft	foot or feet
IFQ	Individual fishing quota
IPQ	Individual processing quota
IRFA	Initial regulatory flexibility analysis
lb	pound(s)
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC or Council	North Pacific Fishery Management Council
OLE	Office of Law Enforcement, NOAA

Acronym or Abbreviation	Meaning
PNCIAC	Pacific Northwest Crab Industry Advisory Committee
PPA	Preliminary preferred alternative
PIK	Pribilof Islands blue and red king crab
PQS	Processor quota share
QS	Quota share
RCR	Registered crab receiver
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SMB	Saint Matthew Island blue king crab
SF	Sustainable Fisheries, NMFS
TAC	total allowable catch
USCG	United States Coast Guard
WAG	Western Aleutian Islands (Adak) golden king crab – West of 174° W
WAI	Western Aleutian Islands (Petrol Bank District) red king crab – West of 179° W
WBT	Western Bering Sea Tanner crab ( <i>C. bairdi</i> ) – West of 166° W

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## Executive Summary

In **April 2018**, the Council received a proposal from the Pacific Northwest Crab Industry Advisory Committee (PNCIAC), requesting the Council consider removing a regulatory prohibition that bans vessels fishing for Crab Rationalization (CR) crab from conducting a partial offload of crab and then continuing to fish, prior to the offload of any remaining crab. In **February 2019** the Council received a discussion paper on this issue and chose to move this action forward. In **June 2019**, the Council slightly modified its purpose and need statement, identified its preliminary preferred alternative and recommended the draft analysis be released for public review.

### Purpose and Need

The Council adopted the following purpose and need statement in February 2019, which was slightly revised in June 2019. The following statement is the revised version:

*The purpose of this action is to allow vessels participating in the Bering Sea and Aleutian Islands Crab Rationalization (CR) Program to make partial deliveries of crab and then continue fishing before fully offloading all harvested crab. This action would remove Federal regulations that prohibit the continuation of a fishing trip subsequent to a partial offload of crab in the CR program. The need for this action is to provide operational flexibility to vessels to conduct their business in an efficient manner, in particular when emergencies or special circumstances arise, while also ensuring proper catch accounting.*

### Alternatives

In February 2019, the Council adopted the following alternatives for analysis. In June 2019, the Council identified its preliminary preferred alternative (indicated in bold).

Alternative 1 (No Action): Status quo is maintained. Vessels are prohibited from resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed, unless fishing in the Western Aleutian Islands golden king crab fishery.

**Alternative 2: Remove the prohibition on resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed. This will allow vessels to make partial deliveries of CR crab and then continue fishing before fully offloading all harvested crab.**

*Option:* In the event of a partial offload within a fishing trip, only entire tank crab contents may be offloaded. (Any tank started for offload must be fully offloaded.)

### Background for this Action

Federal regulations at 50 CFR 680.7(b)(3) state a prohibition on “resum[ing] fishing for CR crab or tak[ing] CR crab on board a vessel once a landing has commenced and until all CR crab are landed, unless fishing in the Western Aleutian Islands golden king crab fishery.” Regulations do not prohibit partial offloads of CR crab at multiple locations. A catcher vessel may offload a portion of CR crab on the vessel at multiple processors, under the current regulatory regime. The primary distinction is that vessels are not be permitted to resume fishing until the remainder of crab on the vessel is off-loaded under current regulations.

This regulation was originally established with the implementation of the Bering Sea Aleutian Islands (BSAI) CR Program, intending to address enforcement concerns associated with a potential change in discarding behavior due to the new management of the fisheries. Specifically, there were concerns that

undesirable crab (e.g. overages, deadloss, or barnacled crab) would be discarded at sea without being accounted for. There was concern that partial deliveries would exacerbate the opportunity to discard crab illegally.

While experience with the CR Program has shown that illegal (unreported) crab discards are unlikely, the prohibition against continuing to fish for CR crab after an offload had begun and until the offload is complete has greatly simplified dockside sampling and catch accounting. Removing this prohibition for all CR fisheries complicates the State of Alaska-run dockside sampling, catch accounting, and the State Observer Program and may degrade the spatial quality of some of the data collected in these fisheries.

In 2015, the Council made an exemption from this prohibition specifically for the Western Aleutian Islands Golden king crab (WAG) fishery. At the time, a processor in Adak was working to develop a live crab market and additional frozen storage was not economically viable. In order to make this live market opportunity economically viable, they needed vessels to be able to deliver smaller amounts of crab opportunistically while the commercial jet was in town. The Council wished to promote the product development/ market opportunity, the economic efficiency, and potential community benefits this exemption could foster. Additionally, the Alaska Department of Fish and Game (ADF&G) determined that given the small number of vessels prosecuting this fishery (consistently two to four vessels between 2006 and 2014), ADF&G staff could work with these vessel operators to ensure this change would be minimally disruptive to the monitoring and accounting for catch for the WAG fishery.

In April 2018, the Council received a proposal from the Pacific Northwest Crab Industry Advisory Committee (PNCIAC), requesting the same consideration for the rest of the CR fisheries.

### **Analysis of Impacts: Alternative 1, No Action**

Alternative 1 would maintain current Federal regulations. Once a vessel begins to land a crab species that are part of the CR program, they may not harvest more crab associated with the program with that vessel until all crab have been completely off-loaded from the vessel. Under the no action Alternative 1, fleet fishing behavior would be expected to remain consistent with the status quo. This prohibition would be expected to continue to simplify the catch accounting and management of the crab fisheries; however, it would also be expected to continue to be an occasional barrier for harvester efficiency. This could generate operational costs, compared to allowing for greater flexibility as proposed in the action alternative.

### **Analysis of Impacts: Alternative 2, Remove Prohibition**

Alternative 2 would remove the prohibition on resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed.

#### ***Scope of Impacts***

If the Council recommends Alternative 2, fishing after a partial delivery of crab is not expected to become common practice in the CR Program for practical reasons. Implementation of the CR Program has increased coordination between harvesters and processor which has allowed for an increase in the efficiency of offloads. Thus, the crab harvesters who have proposed removing this regulation expect this flexibility would only be used in emergency situations or special circumstances related to the safety or economics of the operations (personal communication, J. Jacobsen, 12/28/18). The vast majority of the time it is more economically efficient to deliver all crab on the vessel before resuming fishing. Moreover, increased time in the tanks can drastically increase chances for deadloss of crab, which is deducted from the harvester's individual fishing quota (IFQ). This forgone revenue means crab deadloss poses a significant financial concern to both harvesters and processor. As an example, the WAG exemption to this

prohibition has only been taken advantage of once to date since the regulations were changed in 2016 due to a higher than usual amount of deadloss (personal communication, E. Nichols, 1/8/19).

### ***Effects on Harvesters***

Crab harvesters in the BSAI CR Program (including those harvesting Community Development Quota (CDQ) crab) are expected to be positively impacted by the proposed action. This regulatory change would not require any affirmative action or change in current operations for harvesters; however, it would increase operational flexibility. Harvesters could choose to use this option in the circumstances in which it would benefit them to return fishing after a partial offload. For example, harvesters have highlighted certain situations where the ability to do a partial delivery could alleviate stability issues. For instance, many BSAI crab vessels are not rated to have full tanks of crab in addition to all of their pots on deck. If the ice was advancing around the Pribilof Islands, requiring expeditious removal of gear from the grounds, under Alternative 2, a vessel could deliver their “oldest” tank of crab, possibly freeing up capacity to pull their remaining gear prior to delivering the remaining tanks of crab. Several other examples are highlighted in the analysis.

### ***Alternative 2, Option Requiring the Offload of a Full Tank***

The option under Alternative 2 is intended to address the fish ticket concerns described in the paper by requiring that if crab is offloaded, the full tank is offloaded. This may free up capacity to keep crab from separate partial trips in separate tanks and may help ADF&G edit fish tickets with corresponding information on the statistical areas that crab was harvested from. From a harvester perspective, this would likely not be an additional burden the majority of the time this flexibility is used. However, there are some economic, practical, and enforcement challenges with requiring full tank offloads of crab. As a requirement, this practice would likely be unenforceable, in addition to decreasing some of the flexibility in a small subset of circumstance when this flexibility might be used. Rather than a requirement in regulations, it may be possible to communicate with vessel operators the “best practices” of keeping crab from separate “partial trips” in separate tanks and how to signal to ADF&G where these crab were caught.

### ***Effects on Crab Processors and Communities***

The proposed regulatory amendment under Alternative 2 is expected to have a fairly limited scope of impacts on crab processors and communities. The proposed action would not change the requirement to have access to IFQ in order to harvest CR Program crab, nor the requirement to have access to individual processing quota (IPQ) in order to process catcher vessel A share crab. The amendment would not change the meaning of the quota share (QS) or processor quota share (PQS). Given the marginal increased flexibility this regulatory change may have for harvesters, the proposed amendment is not expected to impact who holds the QS or PQS (i.e., it is not expected to influence quota share market activity), or who harvests the IFQ.

The analysis highlights potential areas this action *may* impact crab processors and the communities in which they are located, including 1) a potential change in delivery patterns for some B and C shares (and community tax revenue associated with these landings), 2) a potential for crab deadloss rates to increase which could result in foregone revenue for processors (in addition to harvesters), and 3) harvester’s ability to access live markets in specific situations. These issues are considered under the presumption that this flexibility proposed under Alternative 2 would only be used in rare events, rather than as a standard operating procedure, thus these potential impacts are also expected to be limited in magnitude.

### ***Effects on Safety at Sea***

Several harvesters testified about the proposal’s benefits in increasing vessel safety (February 2019 Council meeting). These testifiers highlighted situations related to weather and ocean conditions where any additional operational flexibility could improve safety at sea.

As mentioned in Section 2.6.4.3, the degree to which an operational decision was motivated by safety versus efficiency can be difficult to tease apart. It seems unlikely to analysts that the proposed action would address *purely* safety issues that may arise, because the proposed action is additional *fishing* flexibility; i.e. allowing vessels to go back out fishing (or hauling gear) after part of an offload. If conditions are dangerous, the safest option would generally be not to continue fishing. There are situations however, where the use of this flexibility might be related to poor ocean and weather conditions. For instance, this flexibility may be advantageous if a storm is forecasted and harvesters want to retrieve their gear from the grounds before they are done offloading. Offloading a whole vessel may take more than one day. Without this flexibility, a vessel operator may be tempted to retrieve gear in poor weather after the offload is complete; however, the harvesters are never obligated to retrieve gear in unsafe conditions. This decision would also be motivated by operational costs (loss of gear, loss of time, etc). Thus, safety-related circumstances are likely to include at least some motivation related to operational efficiency as well. Increased operational flexibility *can* improve safety at sea, but as always, this needs to be paired with rational judgement about risks.

### ***Effects on Management, Accounting, and Enforcement***

The primary concern from the proposed action has to do with ensuring proper accountability. The proposed action complicates the data collection programs run by ADF&G and the National Marine Fisheries Service (NMFS) for the CR Program and will likely require a number of programmatic changes through the State Observer Program and Dockside Sampling Program so there is a protocol when this flexibility is used. In addition, fishing following a partial offload could degrade the quality of some of the information (catch, effort, and catch per unit effort (CPUE)) collected by statistical area. This information is not currently used in stock assessments but has been one factor of consideration when ADF&G establishes the crab total allowable catch (TACs). While keeping crab from these partial trips in separate tanks and communicating to ADF&G which tank is from which set would alleviate these data quality concerns, as previously mentioned under the Option for Alternative 2, it is not expected this would be practical in every situation. Accounting for instances of fishing after a partial offload could be tracked through possible changes on the ADF&G fish ticket. In addition, increased harvester and processor communication with ADF&G will likely be necessary in order to ensure a protocol is able to be established in the event of fishing following a partial delivery.

The level of concern and complexity the proposed action generates relating to management and accounting issues is tied to the frequency of use. As previously stated, it is difficult to predict with certainty how often vessels would fish after a partial delivery as there would be no requirement to limit this behavior.

### ***Modifications from the Initial Review Draft***

Several modifications were made to this Public Review draft analysis that make it different than the Initial Review draft which was available in June 2019. Changes to this draft include:

- Identification of a preliminary preferred alternative/ modification of the purpose and need statement based on the Council's action in June 2019 (throughout the document)
- Updated history of action (Section 2.4)
- Expanded discussion on the potential for redistribution of B and C shares as requested by the SSC (Section 2.7.2.1)
- Expanded discussion about the potential for live crab markets and the interaction with this action (Section 2.7.2.3)
- Inclusion of net benefits to the Nation, consideration of National Standards, the Council's Ecosystem vision statement based on the Council's PPA (Section 2.9, 3.1, and 3.2)
- Description of any impacts on subsistence (included in Section 3.1 and 3.2)
- Other edits and minor modification suggested by SSC and other reviewers



# 1 Introduction

This document analyzes proposed management measures that would apply exclusively to king and Tanner crab fisheries in the BSAI managed under the CR Program. The measure under consideration includes removing the prohibition against continuing to fish in a BSAI CR Program fishery once off-loading has commenced and until all crab rationalization program crab are landed.

## *The impetus for this regulation*

Federal regulations at 50 CFR 680.7(b)(3) state a prohibition on “resum[ing] fishing for CR crab or tak[ing] CR crab on board a vessel once a landing has commenced and until all CR crab are landed, unless fishing in the Western Aleutian Islands golden king crab fishery.” Under the CR Program regulations, a catcher vessel *may* offload portion of CR crab on the vessel at multiple processors, but the vessel is prohibited from fishing for CR crab between these offloads. This regulation was originally established with the implementation of the CR Program, intending to address enforcement concerns associated with a potential change in discarding behavior due to the new management of the fisheries. Specifically, there were concerns that undesirable crab (e.g. overages, deadloss, or barnacled crab) would be discarded at sea without being accounted for. There was concern that partial deliveries would exacerbate the opportunity to discard crab illegally.

Experience with the CR Program has shown that illegal (unreported) crab discards are unlikely for several reasons. There is no prohibition on sorting crab at the rail, and this is where highgrading often occurs. These discards are accounted for and Alaska Department of Fish and Game (ADF&G) has communicated to industry that high levels of discarding at the rail would be reflected in the stock assessments and ultimate crab TACs. While discarding crab later in the trip is not permitted, dumping crab at sea once it has gone into the tanks would be dangerous and impractical. Also, the risk of quota overages has been greatly reduced due to the cooperative structure, online quota transfers, and post-delivery quota transfers, giving the industry many options to resolve a potential overage. Finally, the structure of the crab rationalization program means more people than just the vessel operators are at risk by this sort of illegal action.

While this regulation may no longer be needed to address these enforcement concerns, the prohibition against continuing to fish for CR crab after an offload had begun and until the offload is complete has greatly simplified dockside sampling and catch accounting. Removing this prohibition for all CR fisheries complicates the State of Alaska-run dockside sampling, catch accounting, and the State Observer Program and may degrade the spatial quality of some of the data collected in these fisheries. These issues are further explored in Section 2.7.3.

## *An exemption for the Western Aleutian Islands Golden King Crab Fishery*

In February 2015, the North Pacific Fishery Management Council (Council or NPFMC) heard public testimony from crab industry representatives and representatives of Adak seeking an exemption from this prohibition specifically for the Western Aleutian Islands Golden king crab (WAG) fishery. At the time, a processor in Adak was working to develop a live crab market and additional frozen storage was not economically viable. In order to make this live market opportunity economically viable, they needed vessels to be able to deliver smaller amounts of crab opportunistically while the commercial jet was in town. The cargo capacity of the jet was limited and it did not make economic sense for the processors to operate cold storage at the plant for sparse crab deliveries (NPFMC 2015). Therefore, without this flexibility vessels that had harvested more than the jet could accept would otherwise have to end their trip and travel to different processor (likely in Dutch Harbor) to offload the remainder of their tanks. The Council ultimately recommended an exemption to the prohibition for this fishery which became effective April 26, 2016. The Council wished to promote the product development/ market opportunity, the economic efficiency, and potential community benefits this exemption could foster (see Section 2.3 in

NPFMC 2015). Additionally, ADF&G determined that given the small number of vessels prosecuting this fishery (consistently two to four vessels between 2006 and 2014), ADF&G staff could work with these vessel operators to ensure this change would be minimally disruptive to the monitoring and accounting for catch for the WAG fishery.

In April 2018, the Council received a proposal from the Pacific Northwest Crab Industry Advisory Committee (PNCIAC), requesting the same consideration for the rest of the CR fisheries (see History of Action Section 2.4).

This document is a Regulatory Impact Review (RIR). An RIR provides assessments of the economic benefits and costs of the action alternatives, as well as their distribution. This RIR addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the National Environmental Policy Act, Presidential Executive Order 12866, and the Regulatory Flexibility Act. An RIR is a standard document produced by the Council and the NMFS Alaska Region to provide the analytical background for decision-making.

## 2 Regulatory Impact Review

The preparation of an RIR<sup>1</sup> is required under Presidential Executive Order (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 nonetheless 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, 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 this Executive Order.

### 2.1 Statutory Authority for this Action

Under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801, et seq.), the commercial crab fisheries in the Bering Sea and Aleutian Islands are managed under the Fishery Management Plan (FMP) for Bering Sea/ Aleutian Island king and Tanner crab (i.e, the BSAI crab FMP). The BSAI crab FMP establishes a State/Federal cooperative management regime that defers crab management to the State of Alaska with Federal oversight. State regulations are subject to the provisions of the FMP, including its goals and objectives, the Magnuson-Stevens Act National Standards, and other applicable federal laws.

A change allowing crab vessels to conduct a partial offload of crab and then continuing to fish, prior to the offload of any remaining crab would require a Federal regulatory amendment. This action would not require a change to the BSAI crab FMP. In addition, a number of programmatic changes may need to happen through the State Observer Program and Dockside Sampling Program in addition to possible changes on the ADF&G fish ticket. However, at this point it does not appear that State of Alaska regulations would be amended and these changes would be determined internally by ADF&G.

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<sup>1</sup> The proposed action has no potential to effect individually or cumulatively on the human environment. The only effects of the action are socioeconomic, as analyzed in this RIR. As such, it is categorically excluded from the need to prepare an Environmental Assessment.

## 2.2 Purpose and Need for Action

The Council identified the following purpose and need for this action in February 2019, which was slightly revised in June 2019:

*The purpose of this action is to allow vessels participating in the Bering Sea and Aleutian Islands Crab Rationalization (CR) Program to make partial deliveries of crab and then continue fishing before fully offloading all harvested crab. This action would remove Federal regulations that prohibit the continuation of a fishing trip subsequent to a partial offload of crab in the CR program. The need for this action is to provide operational flexibility to vessels to conduct their business in an efficient manner, in particular when emergencies or special circumstances arise, while also ensuring proper catch accounting.*

## 2.3 Alternatives

The action alternative in this chapter was designed to accomplish the stated purpose and need for the action. The Council adopted the following alternatives for analysis in February 2019. In June 2019, the Council identified its preliminary preferred alternative (PPA), indicated in bold.

Alternative 1 (No Action): Status quo is maintained. Vessels are prohibited from resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed, unless fishing in the Western Aleutian Islands golden king crab fishery.

**Alternative 2: Remove the prohibition on resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed. This will allow vessels to make partial deliveries of CR crab and then continue fishing before fully offloading all harvested crab.**

*Option:* In the event of a partial offload within a fishing trip, only entire tank crab contents may be offloaded. (Any tank started for offload must be fully offloaded.)

## 2.4 History of Action

In **April 2018**, the Council received a proposal from the PNCIAC,<sup>2</sup> requesting the Council consider removing the regulatory prohibition that bans vessels fishing for CR Program crab from conducting a partial offload of crab and then continuing to fish, prior to the offload of all remaining crab. In response to this testimony, the Council initiated a discussion paper in order to consider removing this regulation for the CR Program fisheries.

The discussion paper was received by the Council in **February 2019**. At that time, the Council chose to move this action forward by identifying the purpose and need and one action alternative for consideration in an Initial Review Analysis. In May 2019, the Council's Crab Plan Team also considered the impacts of the proposed action (see Crab Plan Team Report for this feedback).

In **June 2019**, the Council slightly modified its purpose and need statement, identified its PPA and recommended the draft analysis be released for public review.

## 2.5 Data and Methodology for Analysis of Impacts

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

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<sup>2</sup> PNCIAC proposal: <http://npfmc.legistar.com/gateway.aspx?M=F&ID=dca44ed3-5b69-491f-821e-6d0d51b7d539.pdf>

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.” The costs and benefits of this action with respect to these attributes are described in the sections that follow, comparing the No Action Alternative 1 with the action alternative. The analysts then provide a qualitative assessment of the net benefit to the Nation of each alternative, compared to no action once the Council has identified a preliminary preferred alternative.

In order to assess the effects of the proposed marginal change this analysis primarily relies on management documents, data, and qualitative information gathered from stakeholders and fishery managers. Documents such as the “Ten-year program review for the crab rationalization management program in the Bering Sea/ Aleutian Islands” (NPFMC 2017), Annual Report of the Onboard Observer Program for the Bering Sea and Aleutian Islands Crab Fisheries (Schwenzfeier et al. 2014), and Dockside Sampling Manual for the Bering Sea & Aleutian Islands Crab Fisheries (ADF&G 2018), as well as personal communication from agency staff help describe current management and protocol in order to build an assessment of potential changes for management, catch accounting, and enforcement. Background statistics on the CR Program fisheries are primarily sourced through Alaska Fisheries Information Network (AKFIN) from ADF&G Commercial Fisheries Entry Commission (CFEC) Fish Tickets as well as from ADF&G biologists. These documents and data sources paired with knowledge and experiences from the stakeholders associated with the fishery help assess the potential impacts on the crab fleet, processors and communities (a list of persons consulted is included in Section 4). Information from these sources represents the best available information for describing the BSAI crab fisheries and participants.

## 2.6 Existing Conditions

### 2.6.1 Crab Rationalization Management

The commercial crab fisheries in the BSAI are managed jointly by NMFS and the State of Alaska. The BSAI crab FMP specifies three categories of management measures for the king and Tanner crab fisheries in the BSAI. Category 1 measures are those that are specifically fixed in the FMP and require an FMP amendment to change. Category 2 measures are those that are framework-type measures which the State can change following criteria set out in the FMP. Category 3 measures are under complete discretion of the State of Alaska (see FMP for full list).

The BSAI crab FMP and corresponding Federal regulations specify the elements of the BSAI Crab Rationalization Program. The CR Program includes nine crab fisheries in the BSAI:

**BBR** Bristol Bay red king crab

**BSS** Bering Sea snow crab (*C. opilio*)

**EBT** Eastern Bering Sea Tanner crab (*C. bairdi*) – East of 166° W

**WBT** Western Bering Sea Tanner crab (*C. bairdi*) – West of 166° W

**PIK** Pribilof Islands blue and red king crab

**SMB** Saint Matthew Island blue king crab

**EAG** Eastern Aleutian Islands (Dutch Harbor) golden king crab – East of 174° W

**WAG** Western Aleutian Islands (Adak) golden king crab – West of 174° W

**WAI** Western Aleutian Islands (Petrol Bank District) red king crab – West of 179° W

The following sections provide context for the management of the CR Program that is relevant to the proposed action. For more exhaustive detail on the management of the CR Program fisheries see Section 2 of NPFMC (2017) and regulations at 50 CFR 680.

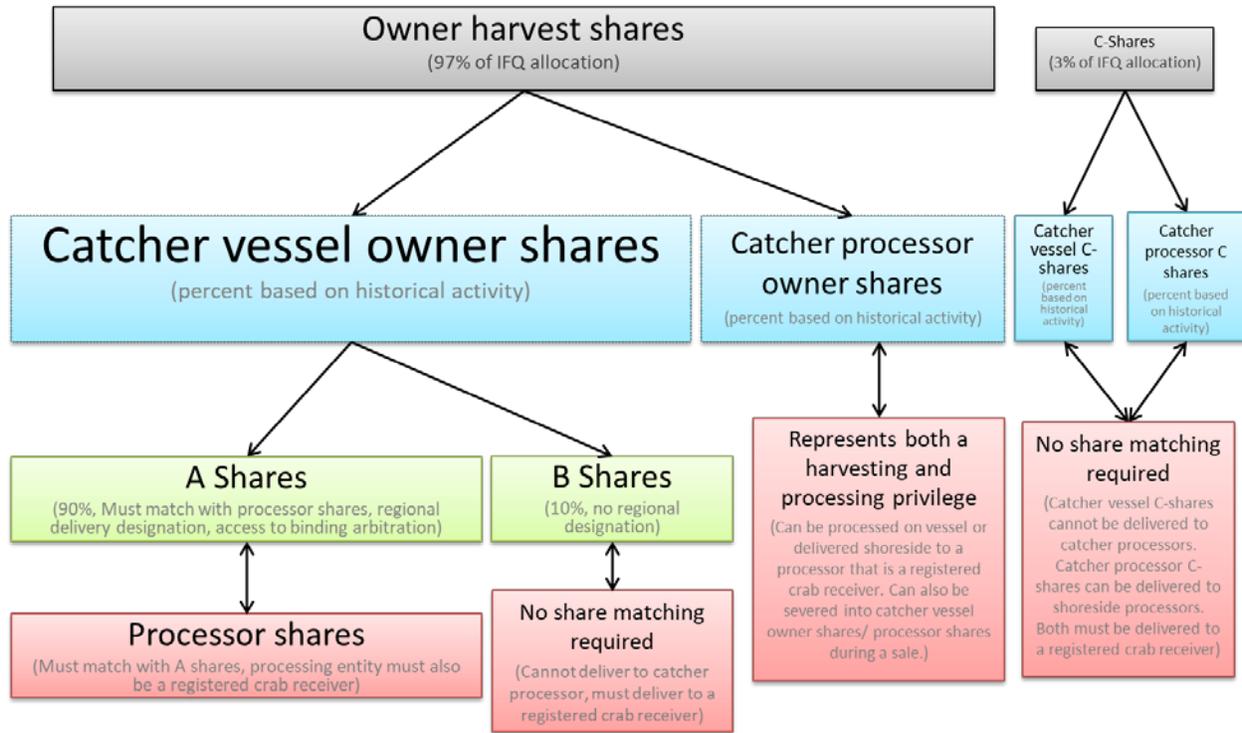
***CR Program quota share and regional designations***

The CR Program established both harvester QS and PQS, which are revocable privileges that allow the holder to harvest or process a specific percentage of the annual TAC in a CR Program fishery. Approximately 97% of the QS (referred to as “owner QS”) in each program fishery (see Figure 1) were initially allocated to the License Limitation Program license holders based on their catch histories in the fishery. The remaining 3% of the QS (referred to as “C shares” or “crew QS”) were initially allocated to captains based on their catch histories in the fishery. These QS are issued annually as Individual Fishing Quota (IFQ), and PQS is issued annually as Individual Processing Quota (IPQ).

Catcher vessel owner IFQ are issued in two classes, Class A IFQ and Class B IFQ. Crab harvested using Class A IFQ are required to “share-match” with IPQ. This means crab harvested using Class A IFQ must be delivered to a processor holding unused IPQ. In addition, most Class A IFQ are subject to regional share designations, whereby harvests are required to be delivered within an identified region (see Table 1). Both of these delivery restrictions of Class A IFQ are intended to add stability to the processing sector and to preserve the historic distribution of landings and processing between regions.

Figure 1 Diagram of quota shares in the CR Program

## Crab Fishery TAC - 10% for CDQ & Adak = IFQ allocation



Note: See BSAI Crab Rationalization Program ten-year review (NPFMC 2017) for more information on the categories of quota described in this figure.

Table 1 Regional designations in CR Program fisheries

Crab QS Fishery	North Region	South Region	West Region	Undesignated Region
BBR	x	x		
BSS	x	x		
EBT				x
WBT				x
PIK	x			
SMB	x	x		
EAG	x	x		
WAG			x	x
WAI		x		

Source: 50 CFR 680.40(b)(2)(iii)

### CDQ crab allocations and requirements

The BSAI crab fisheries in the CR Program also include allocation to communities through the CDQ Program. The CDQ Program is an economic development program associated with federally managed fisheries in the BSAI. Its purpose, as specified in the Magnuson-Stevens Act (§305(i)(1)(A)), is to

provide western Alaska communities the opportunity to participate and invest in BSAI fisheries, to support economic development in western Alaska, to alleviate poverty and provide economic and social benefits for residents of western Alaska, and to achieve sustainable and diversified local economies in western Alaska.

In fitting with these goals, NMFS allocates a portion of the annual catch limits for a variety of commercially valuable marine species in the BSAI to the CDQ Program. The percentage of each annual BSAI catch limit allocated to the CDQ Program varies by both species and management area. These apportionments are, in turn, allocated among six different non-profit managing organizations representing different affiliations of communities (CDQ groups), as dictated under the Magnuson-Stevens Act. Eligibility requirements for a community to participate in the western Alaska Community Development Program are identified in the Magnuson-Stevens Act at §305(i)(1)(D). The six CDQ groups include:

- Aleutian Pribilof Island Community Development Association (APICDA)
- Bristol Bay Economic Development Corporation (BBEDC)
- Central Bering Sea Fisherman's Association (CBSFA)
- Coastal Villages Region Fund (CVRF)
- Norton Sound Economic Development Corporation (NSEDC)
- Yukon Delta Fisheries Development Association (YDFDA)

While the CDQ program was already established prior to implementation of the BSAI CR Program, the development of the CR Program made changes to the crab allocations under CDQ. For instance, the CR Program broadened the CDQ allocations to include EAG and WAI fisheries and increased these total allocations of the TAC from 7.5% to 10% (see Table 2). The program also made an allocation to the community of Adak from the Western Aleutian Islands golden king crab fishery in an amount equal to the unused resource during the qualifying period (capped at 10% of the total fishery allocation). These changes in the CDQ allocations are intended to further facilitate fishing activity and economic development in rural Western Alaska communities.

In addition to CDQ allocation, the CR Program also made an allocation to the community of Adak from the WAG fishery in an amount equal to the unused resource during the qualifying period. This allocation, the Adak Community Allocation (ACA) is capped at 10% of the total allocation in that fishery.

The CDQ allocations are managed independently from the CR Program; there are some CR Program provisions that do not apply to the CDQ allocations (or apply differently) and some regulatory overlap. For instance, CDQ allocations are not subject to the IPQ and regional landing requirements. However, CDQ groups are required to deliver at least 25% of the allocations to shoreside processors. The prohibition against resuming fishing once an offload has commenced and until it is complete applies to CR Program crab, which includes IFQ and CDQ crab landings. Thus, the proposed action would impact both types of quota and quota holders. CDQ groups may also hold CR Program QS or PQS (with the exception of C shares) and many of the vessels that harvest CDQ crab also harvest IFQ crab (see NPFMC 2017).



**Table 2 CDQ group allocation in the CR fisheries as a percent of the CDQ allocation, percent of the total CR Program allocation, and in pounds based on the 2018/19 season**

Fishery	Group Allocation (as a % of program allocation)						Adak Community allocation	Program allocation (% of TAC)
	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFA		
BBR	17%	19%	10%	18%	18%	18%		10%
BSS	8%	20%	20%	17%	18%	17%		10%
EBT	10%	19%	19%	17%	18%	17%		10%
WBT	10%	19%	19%	17%	18%	17%		10%
EAG	8%	18%	21%	18%	21%	14%		10%
WAG							100%	10%
WAI	8%	18%	21%	18%	21%	14%		10%
SMB	50%	12%	0%	12%	14%	12%		10%
PIK	0%	0%	100%	0%	0%	0%		10%
Fishery	Group Allocation (in pounds based on the 2018/2019 TAC)						Adak Community allocation	Total pounds by fishery
	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFA		
BBR	73,236	81,852	43,080	77,544	77,544	77,544		430,800
BSS	220,648	551,620	551,620	468,877	496,458	468,877		2,758,100
EBT	Fishery closed							0
WBT	24,390	46,341	46,341	41,463	43,902	41,463		243,900
EAG	30,848	69,408	80,976	69,408	80,976	53,984		385,600
WAG	0	0	0	0	0	0	250,000	0
WAI	Fishery closed							0
SMB	Fishery closed							0
PIK	Fishery closed							0
Total pounds by group	349,122	749,221	722,017	657,292	698,880	641,868	250,000	3,818,400

Source: NMFS 2018 CDQ Program quota categories, target and non-target CDQ reserves, allocation percentages, and group quotas <https://alaskafisheries.noaa.gov/sites/default/files/reports/annualmatrix2018.pdf>

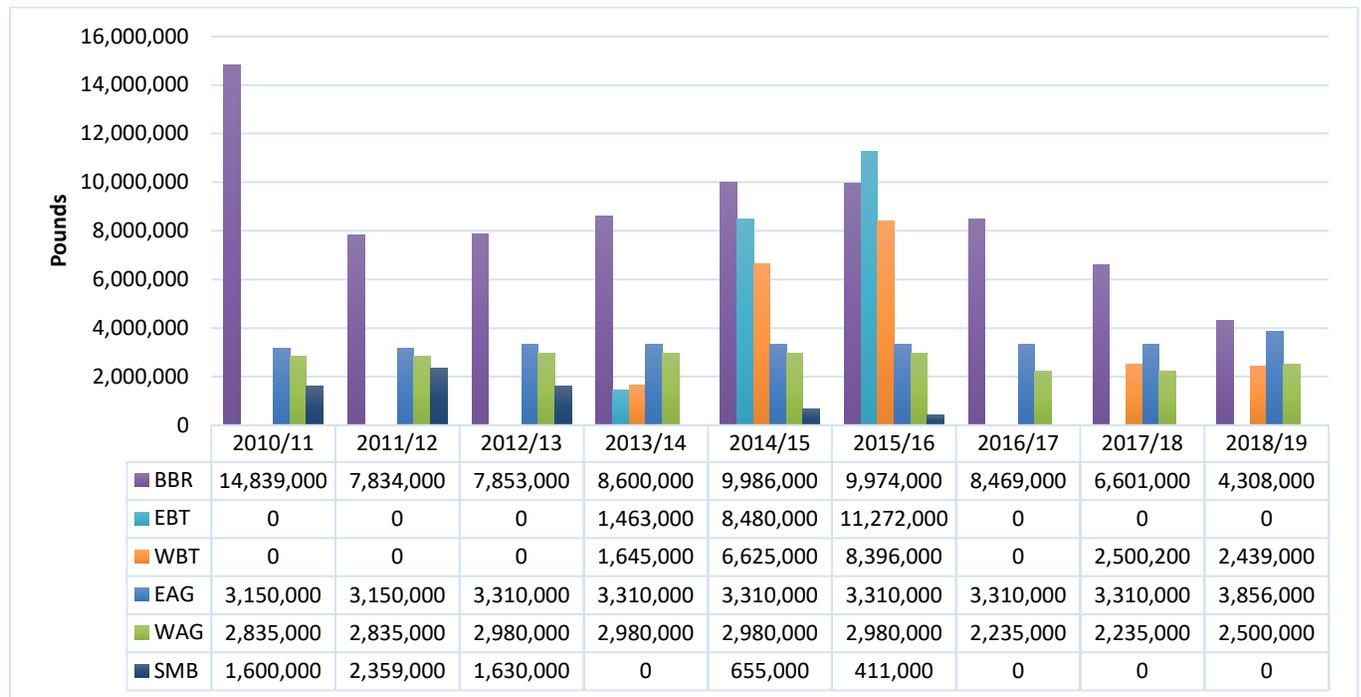
## 2.6.2 Harvesting Sector

This section includes background information on the BSAI crab harvesting sector to inform an understanding of the status quo (Alternative 1) and to aid in the discussion of the potential changes under the proposed action (Alternative 2), which will be covered in Section 2.6 and Section 2.7, respectively. This section provides statistics on the 1) catch limits for each BSAI crab fishery, 2) count of vessels by fishery, 3) total weight landed and value of each fishery, 4) CPUE, 5) deadloss, 6) number of lost pots, and 7) number of partial deliveries. These tables exclude the WAI and PIK fisheries, which were closed to commercial fishing through this time period.

Figure 2 and Figure 3 illustrate the TAC for seven of the nine BSAI crab rationalization fisheries between the 2010/2011 season and the 2018/2019 seasons. Again, these tables exclude the WAI and PIK fisheries, since they were closed to commercial fishing through this time period. As can be seen in Figure 2, EBT, WBT, and SMB fisheries have been closed to commercial fishing in several seasons during this time period as well. The BSS TAC is depicted separately in Figure 3 as this fishery’s TAC is generally on a whole different scale than the harvest limits in other fisheries. BSS TAC has ranged from approximately 19 million lb (2017/2018 season) up to approximately 89 million lb in the 2011/ 2012 season. This is relative to other CR Program fisheries which have all be under 15 million lb in recent years.

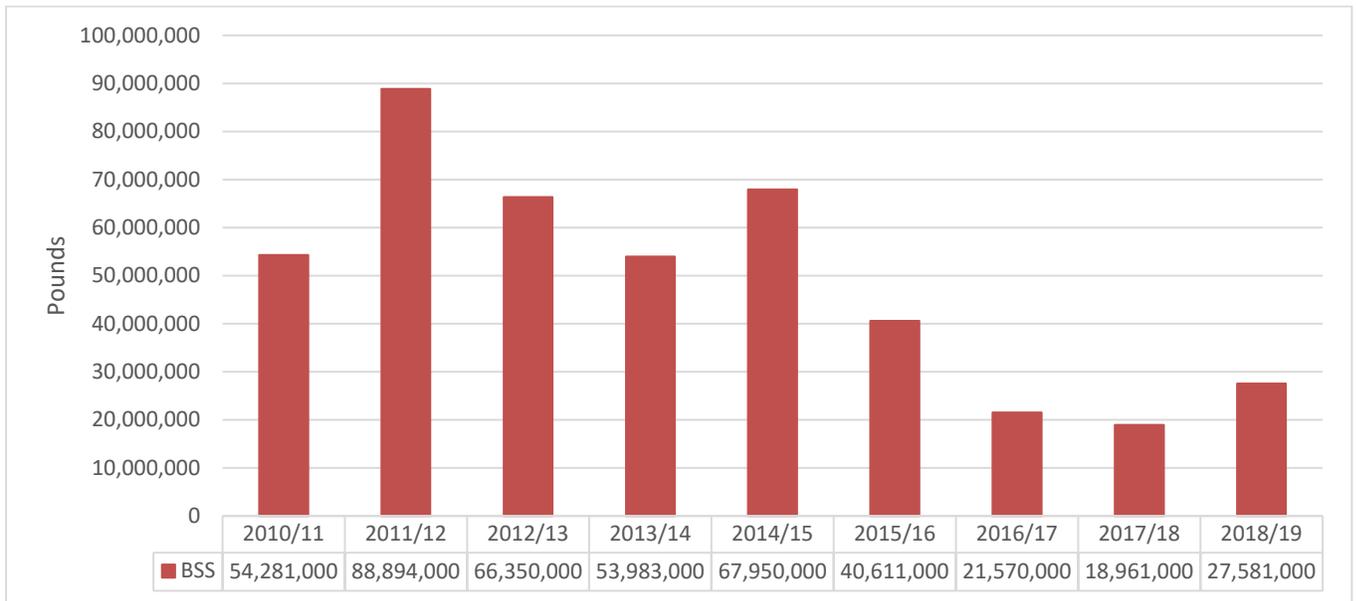
The crab harvesting industry is typically able to harvest 99-100% of the TAC for each of these fisheries. The 2013/2014 and 2014/2015 WBT seasons were exceptions, where this TAC was harvested at 81% and 79%, respectively. This may have been due to a combination of factors, including prioritization of the large BSS TACs in these season, low WBT CPUE (particularly in the 13/14 season), and challenges with accessing markets and maintaining the necessary fleet capacity given the open-closed nature of the fishery.

**Figure 2 TAC for CR Program fisheries: BBR, EBT, WBT, EAG, WAG, and SMB**



Source: ADF&G (personal communication, E. Nichols, 4/10/19)

**Figure 3 TAC for CR Program fisheries: BSS**



Source: ADF&G (personal communication, E. Nichols, 4/10/19)

Characteristics of the CR Program, in particular, the allocation of harvesting privileges and the ability to form cooperatives, allows for coordination among QS holders to get their crab QS harvested. For many QS holders this means an opportunity to minimize costs by consolidating matching quota on vessels. The implementation of the CR Program resulted in substantial and immediate consolidation among the BSAI crab fleet; with 256 participating vessels in the 2004/2005 season, down to 91 vessels two seasons later (NPFMC 2017). That number continued to decline slightly in the following seasons; but has generally leveled off (Table 3). Count of participating vessels in recent years is typically tied to TAC of the target crab fishery as well as the TAC and status of other crab fisheries. BBR and BSS typically have the greatest number of participating vessels, as well as WBT/ EBT to the extent these fisheries are open. As demonstrated in Table 3, only a few catcher processors (C/Ps) still operate in these fisheries. Since at least 2009/2010 season, no vessels less than 60ft length overall have participated in the CR Program fisheries (not included in table).

**Table 3 Count of active catcher vessels (CV) and catcher processors (C/P) the CR Program crab fisheries, including CDQ**

Fishery	Season	Count of active vessels		
		CP	CV	All unique vessels
BBR	2010/11	2	64	66
	2011/12	2	61	63
	2012/13	2	63	65
	2013/14	2	62	63
	2014/15	2	62	64
	2015/16	2	63	65
	2016/17	2	62	64
	2017/18	2	60	61
WBT	2010/11	No commercial fishery		
	2011/12			
	2012/13			
	2013/14	1	63	64
	2014/15	1	24	25
	2015/16	1	36	37
	2016/17	No commercial fishery		
	2017/18	1	30	31
WAG	2010/11	1	2	3
	2011/12	1	2	3
	2012/13	1	3	4
	2013/14		3	3
	2014/15		2	2
	2015/16		2	2
	2016/17		3	3
	2017/18		3	3
SMB	2010/11		11	11
	2011/12		18	18
	2012/13		17	17
	2013/14	No commercial fishery		
	2014/15		4	4
	2015/16		3	3
	2016/17	No commercial fishery		
	2017/18			
BSS	2010/11	2	67	69
	2011/12	2	70	72
	2012/13	2	71	73
	2013/14	2	68	70
	2014/15	2	68	70
	2015/16	2	68	70
	2016/17	2	61	63
	2017/18	2	61	63
EBT	2010/11	No commercial fishery		
	2011/12			
	2012/13			
	2013/14	1	29	30
	2014/15	1	36	37
	2015/16	1	46	47
	2016/17	No commercial fishery		
	2017/18			
EAG	2010/11		3	3
	2011/12		3	3
	2012/13	1	3	4
	2013/14	1	3	4
	2014/15		3	3
	2015/16		3	3
	2016/17		4	4
	2017/18		4	4

Source: Comprehensive fish tickets sourced through AKFIN [Partial\_Offloads\_table5-1(7-22-19)]

Table 4 demonstrates the total weight and ex vessel value associated each CR Program fishery. The BSS and BBR fisheries are generally the most valuable. As previously alluded to, the BSS fishery typically yields greatest harvest, by far. However, the ex vessel price for BBR is typically 3 to 4 times greater than that of BSS. Thus, the ex vessel value of the BRR fishery in the 2016/2017 season was estimated to exceed that of the BSS fishery.

**Table 4 Total weight and ex vessel value of CR Program fisheries, including CDQ**

Fishery	Season	Total weight (in millions of pounds)	Total ex-vessel value (in millions of US dollars, nominal)
BBR	2010/11	14.83	108.41
	2011/12	7.83	84.25
	2012/13	7.85	62.94
	2013/14	8.60	58.28
	2014/15	9.99	67.33
	2015/16	9.97	78.40
	2016/17	8.47	82.24
	2017/18	6.60	55.04355094
WBT	2010/11	No commercial fishery	
	2011/12		
	2012/13		
	2013/14	1.33	3.55
	2014/15	5.18	11.44
	2015/16	8.31	19.59
	2016/17	No commercial fishery	
	2017/18	2.48	8.64
WAG	2010/11	2.54	10.19
	2011/12	2.54	10.50
	2012/13	2.65	9.64
	2013/14	2.67	10.24
	2014/15	C	C
	2015/16	C	C
	2016/17	2.01	10.17
	2017/18	2.01	9.56
SMB	2010/11	1.26	6.23
	2011/12	1.88	8.70
	2012/13	1.62	6.97
	2013/14	No commercial fishery	
	2014/15	C	C
	2015/16	C	C
	2016/17	No commercial fishery	
	2017/18		
BSS	2010/11	54.26	136.45
	2011/12	70.93	151.53
	2012/13	83.17	187.87
	2013/14	54.97	127.94
	2014/15	67.88	138.05
	2015/16	40.60	107.13
	2016/17	21.53	69.06
	2017/18	18.95	56.34
EBT	2010/11	No commercial fishery	
	2011/12		
	2012/13		
	2013/14	1.46	3.57
	2014/15	8.44	21.11
	2015/16	11.21	25.98
	2016/17	No commercial fishery	
	2017/18		
EAG	2010/11	3.15	11.75
	2011/12	3.15	14.45
	2012/13	3.31	12.28
	2013/14	3.30	12.67
	2014/15	3.31	13.34
	2015/16	3.30	14.41
	2016/17	3.31	17.90
	2017/18	3.31	17.26

Source: Comprehensive fish tickets sourced through AKFIN [Partial\_Offloads\_table5-1(7-22-19)]

Notes: C = confidential data; total harvest includes deadloss

Table 5 presents the average and maximum CPUE (number of retained crab per pot lift) by fishery. Stock assessment authors and fishery managers also have this information available by statistical areas;

however, this information is generally confidential and can therefore not be displayed. Spatially differentiated CPUE is not currently used in stock assessments but has been considered by some stock assessment authors for future use (personal communication, Crab Plan Team, 4/29/19). Additionally, fishery managers sometimes consider CPUE by statistical area as one factor when setting the TAC for crab fisheries (personal communication, E. Nichols, 1/18/19).

**Table 5 Catch per unit effort by CR Program fishery**

Fishery	Season	Average CPUE	Maximum CPUE
BBR	2010/11	18.3	46.1
	2011/12	18.8	41.0
	2012/13	28.2	74.8
	2013/14	20.6	31.6
	2014/15	16.6	28.5
	2015/16	25.0	51.3
	2016/17	19.6	52.6
	2017/18	15.9	33.3
WBT	2010/11	No commercial fishery	
	2011/12		
	2012/13		
	2013/14	5.5	34.3
	2014/15	42.3	85.3
	2015/16	41.3	78.2
	2016/17	No commercial fishery	
	2017/18	28.0	93.7
WAG	2010/11	17.0	32.6
	2011/12	21.6	42.8
	2012/13	17.3	33.2
	2013/14	14.5	99.6
	2014/15	C	C
	2015/16	C	C
	2016/17	11.0	21.0
	2017/18	15.3	33.5
SMB	2010/11	7.8	13.1
	2011/12	6.3	10.1
	2012/13	9.2	14.7
	2013/14	No commercial fishery	
	2014/15	3.9	7.5
	2015/16	2.9	5.1
	2016/17	No commercial fishery	
	2017/18		
BSS	2010/11	221.9	322.5
	2011/12	155.9	390.2
	2012/13	137.5	421.8
	2013/14	115.0	264.9
	2014/15	123.0	231.8
	2015/16	131.2	254.6
	2016/17	111.4	367.5
	2017/18	105.4	389.3
EBT	2010/11	No commercial fishery	
	2011/12		
	2012/13		
	2013/14	17.6	55.4
	2014/15	48.8	82.8
	2015/16	43.7	76.6
	2016/17	No commercial fishery	
	2017/18		
EAG	2010/11	24.3	35.4
	2011/12	38.4	49.9
	2012/13	31.8	43.2
	2013/14	34.5	66.9
	2014/15	39.9	90.3
	2015/16	34.3	47.8
	2016/17	29.9	49.0
	2017/18	25.3	41.5

Source: Comprehensive fish tickets sourced through AKFIN [Partial\_Offloads\_CPUE(7-22-19)]

Notes: C = confidential data

Deadloss is the amount of dead crab landed at the dock, and any illegal crab that cannot be processed or sold, such as illegal species, females, and undersized male crab. Deadloss also includes the crab that the processor chooses not to purchase. This includes sub-industry preferred size crab (that are legal), “dirty crab” (very old shell, barnacles, etc.), and contaminated crab (paint chips, diesel). Crab deadloss is required to be retained and is deducted from the TAC and IFQ allocations. Once accounted for, it is

discarded because it is no longer marketable. Thus, deadloss which is properly accounted for is not a biological concern; however, it can be an economic one.

Table 6 demonstrates the level of deadloss in each CR Program fishery between the 2010-2011 season and the 2016-2017 season. For the BBR and BSS fisheries the percent of deadloss has generally be less than 1% of the total pounds of catch during that time period, with a few exceptions. Deadloss tends to be slightly greater in the WAG fishery (averaging 2.5% during this time period) and to a lesser extend to the EAG and SMB fisheries (each averaging about 1.4% during this time period). This relatively greater level of deadloss in these fisheries is likely related to the location of the fishing grounds relative to port and the resulting trip length, soak time, and pot depth relative to BBR and BSS.

**Table 6 Deadloss in the crab fisheries, including CDQ**

Fishery	Season	Live Catch (in pounds)	Deadloss (in pounds)	Deadloss per pound of catch
BBR	2010/11	14.73	0.11	0.007
	2011/12	7.80	0.03	0.004
	2012/13	7.82	0.03	0.004
	2013/14	8.54	0.06	0.007
	2014/15	9.89	0.10	0.010
	2015/16	9.79	0.18	0.019
	2016/17	8.43	0.04	0.005
	2017/18	6.58	0.02	0.004
WBT	2010/11	No commercial fishery		
	2011/12	No commercial fishery		
	2012/13	No commercial fishery		
	2013/14	1.31	0.02	0.017
	2014/15	5.13	0.05	0.009
	2015/16	8.26	0.05	0.006
	2016/17	No commercial fishery		
	2017/18	2.46	0.02	0.006
WAG	2010/11	2.50	0.03	0.013
	2011/12	2.50	0.03	0.013
	2012/13	2.60	0.05	0.020
	2013/14	2.59	0.09	0.033
	2014/15	C	C	C
	2015/16	C	C	C
	2016/17	1.93	0.08	0.044
	2017/18	1.96	0.06	0.029
SMB	2010/11	1.25	0.01	0.008
	2011/12	1.85	0.03	0.014
	2012/13	1.60	0.02	0.013
	2013/14	No commercial fishery		
	2014/15	0.30	0.01	0.018
	2015/16	0.10	0.00	0.013
	2016/17	No commercial fishery		
	2017/18	No commercial fishery		
BSS	2010/11	53.91	0.35	0.006
	2011/12	70.47	0.46	0.007
	2012/13	82.55	0.62	0.008
	2013/14	54.54	0.43	0.008
	2014/15	67.34	0.53	0.008
	2015/16	40.22	0.38	0.009
	2016/17	21.32	0.21	0.010
	2017/18	18.78	0.17	0.009
	EBT	2010/11	No commercial fishery	
2011/12		No commercial fishery		
2012/13		No commercial fishery		
2013/14		1.45	0.01	0.004
2014/15		8.23	0.06	0.007
2015/16		11.14	0.07	0.007
2016/17		No commercial fishery		
2017/18		No commercial fishery		
EAG	2010/11	3.08	0.07	0.023
	2011/12	3.13	0.02	0.008
	2012/13	3.23	0.08	0.024
	2013/14	3.27	0.03	0.009
	2014/15	3.28	0.03	0.009
	2015/16	3.25	0.05	0.016
	2016/17	3.24	0.07	0.020
	2017/18	3.25	0.05	0.017

Source: Comprehensive fish tickets sourced through AKFIN [Partial\_Offloads\_table3-2deadloss(7-22-19)]

Notes: C = confidential data

Harvesters have suggested that the proposed flexibly under Alternative 2 could mitigate some issues with lost gear, particularly in situations when the ice is coming down from the North and vessels do not have the capacity to haul all their gear at once (this issue is further discussed in Section 2.7.1). Table 7 presents the status quo number of reported lost pots in recent years by fishery. It is likely that spikes in these data are due to big incident(s) that occurred in that year; for example, ice coming down from the North faster than expected may be responsible for the large number of pots lost in the BSS fishery in the 2011/12 season. The peak of 157 lost pots in the 2017/18 season was known to be linked to negative interactions with other gear types (personal communication, E. Nichols, 5/8/19).



Lost gear can be problematic for other active vessels, creating expensive and sometimes dangerous entanglements, sometimes resulting in even more lost gear. In addition, mortality occurs when lost crab pots continue to capture animals, resulting in ghost fishing. Mortality of crab caused by ghost fishing is difficult to estimate given existing information, but studies have shown that even unbaited pots can continue to catch crab, and pots are subject to rebaiting due to the capture of other fish and crab. All pots currently fished in the BSAI crab fisheries are required to contain biodegradable escape mechanisms that allow catch to escape after an extended period of time, intended to reduce ghost fishing.

**Table 7** Reported number of lost pots by fishery

Season	BBR	BSS	WBT	EBT	WAG	EAG	SMB
2010/11	148	319	Fishery closed	Fishery closed	14	25	27
2011/12	61	766			22	0	49
2012/13	64	339			38	31	33
2013/14	63	278	25	10	50	2	Fishery closed
2014/15	60	388	92	63	30	78	6
2015/16	53	156	196	290	21	60	9
2016/17	43	133	Fishery closed	Fishery closed	20	16	Fishery closed
2017/18	42	176	11		157	29	
2018/19	28	243	41		66	10	

Source: ADF&G (personal communication, E. Nichols, 4/19/19)

Under status quo regulations, a crab vessel may choose to deliver their catch to more than one processor (i.e., conduct partial deliveries). There are a few ways to examine the number of partial deliveries that have occurred in CR Program fisheries in recent years. In addition to a check box on the fish ticket indicating a partial delivery, analysts can compare the trip count per year in each fishery with the count of total landings. The latter method was employed in Table 8. The number of landings are equal to the number of trips taken if no partial deliveries occurred. If a vessel offloaded crab at multiple processing plants, the number of landings will be greater than the number of trips taken. Table 8 demonstrates that partial deliveries are not a routine practice for most of the CR Program vessels; occurring 8 times per year on average in the BBR fishery, with an annual average of 122 trips taken between 2010/11 and 2016/17, and 13 times on average in the BSS fishery during an average of 360 trips taken.

**Table 8 CR Program trip and landings statistics**

Fishery	Season	Count of trips	Count of landings	Partial deliveries	Trips per vessel
BBR	2010/11	205	217	12	3.3
	2011/12	118	127	9	2.0
	2012/13	105	119	14	1.9
	2013/14	106	125	19	2.0
	2014/15	116	123	7	2.0
	2015/16	115	116	1	1.8
	2016/17	116	118	2	1.9
	2017/18	112	112	0	1.8
	WBT	2010/11	No commercial fishery		
2011/12		No commercial fishery			
2012/13		No commercial fishery			
2013/14		207	210	3	3.2
2014/15		76	81	5	2.8
2015/16		111	112	1	3.0
2016/17		No commercial fishery			
2017/18		48	50	2	1.5
WAG	2010/11	29	30	1	9.7
	2011/12	29	32	3	9.7
	2012/13	26	30	4	6.5
	2013/14	20	26	6	6.7
	2014/15	C	C	C	11.5
	2015/16	C	C	C	13.0
	2016/17	22	22	0	7.3
	2017/18	25	27	2	8.3
SMB	2010/11	38	45	7	3.5
	2011/12	56	59	3	3.1
	2012/13	44	52	8	2.6
	2013/14	No commercial fishery			
	2014/15	14	18	4	3.5
	2015/16	6	6	0	2.0
	2016/17	No commercial fishery			
	2017/18	No commercial fishery			

Fishery	Season	Count of trips	Count of landings	Partial deliveries	Trips per vessel
BSS	2010/11	327	345	18	4.8
	2011/12	535	550	15	7.4
	2012/13	528	555	27	7.2
	2013/14	376	389	13	5.4
	2014/15	458	472	14	6.5
	2015/16	281	287	6	4.1
	2016/17	192	201	9	3.0
	2017/18	186	189	3	3.0
	EBT	2010/11	No commercial fishery		
2011/12		No commercial fishery			
2012/13		No commercial fishery			
2013/14		48	51	3	1.6
2014/15		86	92	6	2.3
2015/16		155	156	1	3.3
2016/17		No commercial fishery			
2017/18		No commercial fishery			
EAG	2010/11	23	27	4	7.7
	2011/12	21	29	8	7.0
	2012/13	29	34	5	9.7
	2013/14	23	33	10	7.7
	2014/15	22	23	1	7.3
	2015/16	21	22	1	7.0
	2016/17	25	27	2	6.3
	2017/18	24	26	2	6.0

Source: Comprehensive fish tickets sourced through AKFIN [Partial\_Offloads\_table5-16(7-22-19)]  
Notes: C = confidential data

### 2.6.3 Processing Sector and Communities

This section provides some focused context for understanding the processors and communities that are associated with the CR Program as well as including some relevant information on the delivery process. While there are many ways for communities to be associated with a fishery (for example, home community of crew, skippers, vessel owners, QS holders, vessel home port, communities connected through support sectors, port of departure or landing) this section primarily focuses on communities and processors associated with CR Program deliveries. As explained in Section 2.7.2 this is the chief connection that may experience some nuanced changes under the proposed action. Section 2.7.2 discusses the expectation that the marginal change from the proposed action is not expected to be substantial enough that it would influence who harvests or processes CR Program crab overall and is not expected to influence the market for crab QS or PQS. For more background information on community associations with the CR Program fisheries see Appendix A Social Impact Assessment of NPFMC (2017).

#### *Communities that receive deliveries of CR Program crab*

Community and processor information that is relevant to the proposed action includes a description of where CR Program crab is typically delivered because, as described more thoroughly in Section 2.7.2, this action could influence the landing patterns of quota that is not share-matched (i.e. Class B, C and CPO quota). Thus, Table 9 through Table 15 demonstrate the number of processors and registered crab receivers (RCR) that have received CR Program deliveries in the recent past by share type and community. Communities must be grouped due to confidentiality concerns that exist when only one or two processing plants are actively receiving crab in a community. In addition, Figure 4 illustrates the distribution of CR Program crab landings by community grouping over time. This figure includes all CR Program crab species and all share types between 2010/11 season to the 2016/17 season.

The communities that have received deliveries of CR Program crab in the recent years (2010/11 – 2016/17) include Akutan, Dutch Harbor/ Unalaska, King Cove, Kodiak, St Paul, Adak and in one year considered, Naknek also received CR Program deliveries. In these tables and figure, “Other AK” means crab was processed on C/P or floating processors for which we do not have any associated community data. Crab associated with Class B IFQ (including C/P owner shares) and Class C shares (including C/P C shares) appear to be landed with processors in the same communities that typically receive Class A IFQ, which is required to be share-matched.

**Table 9 Processing by share type and community (2010/2011)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	2		1	1		1	1	
	Dutch/Unalaska	3	4	7,298,118	3	4	1,044,895	3	4	293,441
	King Cove	1	2		1	2		1	2	
	Kodiak	2	2	2,371,635	4	5	161,358	2	2	28,236
Other AK		1	1	C	3	3		3	3	
	St Paul	1	2		1	2	606,004	1	1	59,674
BSS	Akutan	1	1		1	1		1	1	
	Dutch/Unalaska	3	4	14,475,355	4	5	3,281,970	4	4	903,219
	King Cove	1	1		1	1		1	1	
	Kodiak	1	1	C	1	1	C	2	2	151,068
Other AK		2	3		4	4		4	4	
	St Paul	1	5	20,332,689	1	4	5,223,575	1	2	404,751
EAG	Dutch/Unalaska	3	6		3	4	391,466	2	3	65,215
	Other AK	1	1	2,307,178	0	0	-	0	0	-
SMB	Akutan	1	1	C	1	1		1	1	C
	Dutch/Unalaska	3	3	83,158	2	2	78,505	3	3	7,785
	St Paul	1	6	C	1	2		1	2	C
WAG	Dutch/Unalaska	3	5	1,154,250	3	3	1,273,839	2	2	76,444
	Other AK	0	0	-	1	1		1	1	

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Table 10 Processing by share type and community (2011/2012)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	2		1	1		1	1	
	Dutch/Unalaska	4	4	3,859,847	4	6	584,656	4	5	149,170
	King Cove Kodiak	1	2	1,264,508	1	1	57,643	1	1	C
Other AK	St Paul	1	1	C	3	3	319,272	3	3	35,368
		1	2		1	2		1	1	
BSS	Akutan	1	2		1	2		1	1	
	Dutch/Unalaska	3	6	24,412,199	4	7	6,853,945	4	6	1,690,211
	King Cove Kodiak	1	1	C	1	1	C	1	1	-
Other AK	St Paul	2	3	33,047,144	4	5	6,982,974	4	4	
		1	7		1	5		1	2	703,773
EAG	Akutan	1	1	C	0	0	-	0	0	-
	Dutch/Unalaska	4	5	2,065,712	4	5	393,052	2	3	C
	Other AK	1	1	C	0	0	-	0	0	-
SMB	Akutan	1	2	C	1	1	C	1	1	
	Dutch/Unalaska	3	3	125,242	3	3	32,163	2	2	26,326
	St Paul	1	5	C	1	2	C	1	3	
WAG	Adak	1	2		0	0	-	0	0	-
	Akutan	1	2	1,151,277	1	2		1	1	
	Dutch/Unalaska	2	2		1	1	1,275,869	1	1	76,523
	Other AK	0	0	-	1	1		1	1	

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Table 11 Processing by share type and community (2012/2013)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	2		1	1		1	1	
	Dutch/Unalaska	4	6	4,452,298	4	7	717,590	3	5	165,413
	King Cove	1	2		1	2		1	2	
	Kodiak	2	2	1,259,501	2	2	50,653	3	3	29,005
Other AK		0	0	C	2	2		2	2	C
	St Paul	1	2		1	2	194,253	0	0	
BSS	Akutan	1	2		1	3		1	2	
	Dutch/Unalaska	3	5	18,043,095	4	7	4,675,098	3	4	1,371,365
	King Cove	1	1		1	1		1	1	C
	Kodiak	1	1	4,431,675	2	2	235,710	0	0	-
	Naknek	1	1		0	0	-	0	0	-
Other AK	1	2	C	3	3		3	3		
St Paul	1	8		1	3	5,558,977	1	1	369,076	
EAG	Akutan	1	2		0	0	-	1	1	
	Dutch/Unalaska	4	6	2,461,545	3	4	356,452	4	5	88,933
SMB	Akutan	1	3	C	1	1	C	1	1	
	Dutch/Unalaska	3	3	188,424	3	3	20,836	2	2	35,061
	St Paul	1	5	C	1	4	C	1	2	
WAG	Adak	1	2		2	2		0	0	-
	Akutan	1	2	1,218,166	1	1		1	1	C
	Dutch/Unalaska	2	2		1	1	1,307,707	1	1	
	Other AK	0	0	-	1	1		0	0	-

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Table 12 Processing by share type and community (2013/2014)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	2		1	1		1	1	
	Dutch/Unalaska	2	5	4,850,059	3	6	821,907	3	6	195,761
	King Cove	1	2		1	2		1	2	
	Kodiak	2	2	1,377,587	2	3	37,484	2	2	15,983
Other AK		0	0	-	2	2		2	2	C
	St Paul	1	2	C	1	2	194,944	0	0	-
BSS	Akutan	1	1		1	1		1	1	
	Dutch/Unalaska	3	4	14,818,317	3	8	3,224,032	3	6	810,850
	King Cove	1	1		1	1		0	0	-
	Kodiak	0	1	C	0	1	C	0	0	-
Other AK		1	2		3	3		3	3	
	St Paul	1	8	C	1	4	5,286,730	1	1	649,656
EAG	Akutan	1	1		1	1		1	1	
	Dutch/Unalaska	3	6	2,440,686	2	3	413,362	1	2	C
EBT	Akutan	1	3		1	1		1	1	
	Dutch/Unalaska	3	6	882,668	2	5	177,991	2	5	34,124
	King Cove	1	2		1	1		0	0	-
	Kodiak	1	1	C	0	0	-	0	0	-
Other AK		0	0	-	1	1		1	1	C
	St Paul	1	1	C	0	0	-	0	0	-
WAG	Akutan	1	2		1	1		1	1	
	Dutch/Unalaska	3	4	1,215,213	2	2	1,290,441	2	2	80,464
WBT	Akutan	1	1		1	2		1	1	
	Dutch/Unalaska	3	5	463,818	2	4	33,497	2	2	7,783
	King Cove	1	2		0	0		1	1	
Other AK		1	1	C	2	2	C	2	2	5,904

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Table 13 Processing by share type and community (2014/2015)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	2	5,603,170	1	2	976,087	1	1	206,744
	Dutch/Unalaska	2	5		2	5		2	5	
	King Cove	1	2	1,608,350	1	1	47,673	1	1	24,062
	Kodiak	2	2		2	2		2	2	
Other AK	0	0	-	2	2	197,940	2	2	25,578	
St Paul	1	2	C	1	1		1	1		
BSS	Akutan	1	1	18,780,003	1	3	4,984,269	1	1	898,254
	Dutch/Unalaska	3	4		3	7		3	5	
	King Cove	1	1	C	1	1	C	1	1	C
	Kodiak	1	1	C	1	1	C	0	0	-
Other AK	1	2	C	3	3	5,735,701	3	3	930,859	
St Paul	1	8	C	1	3		1	1		
EAG	Akutan	1	1	2,448,652	0	0	-	0	0	-
	Dutch/Unalaska	2	6		2	3	C	2	3	C
EBT	Akutan	1	3	4,980,076	1	2	962,407	1	2	C
	Dutch/Unalaska	3	6		3	6		1	3	
	King Cove	1	2	C	1	1	C	1	1	C
	Other AK	0	0	-	1	1	C	1	1	C
St Paul	1	1	C	0	0	-	0	0	-	
SMB	St Paul	1	4	C	1	3	C	1	1	C
WAG	Adak	1	1	1,172,098	0	1	C	1	1	79,559
	Akutan	1	2		1	2		1	1	
	Dutch/Unalaska	2	4		1	1		1	1	
WBT	Akutan	1	2	2,811,646	1	2	478,396	1	2	99,107
	Dutch/Unalaska	3	6		3	8		3	4	
	King Cove	1	2	C	0	0	-	0	0	-
	Other AK	1	1	C	2	2	116,765	2	2	15,267
St Paul	1	5	C	1	3	1		2		

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C



**Table 14 Processing by share type and community (2015/2016)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	3	5,522,335	1	3	897,338	1	1	232,135
	Dutch/Unalaska	3	5		3	6		3	6	
	King Cove	1	2	1,592,782	1	1	71,850	1	1	C
	Kodiak	2	2		2	2		1	1	
Other AK	0	0	-	2	2	251,003	2	2	21,820	
St Paul	1	2	C	1	2		1	2		
BSS	Akutan	1	2	12,544,593	1	3	3,267,597	1	2	545,852
	Dutch/Unalaska	3	5		3	8		3	5	
	King Cove	1	1	C	1	1	C	1	1	C
	Other AK	0	0	-	2	2	3,138,383	1	2	C
St Paul	1	6	C	1	2	1		2		
EAG	Akutan	1	2	2,419,516	1	1	412,069	0	0	-
	Dutch/Unalaska	2	4		2	3		2	3	C
EBT	Akutan	1	4	6,644,840	1	3	1,337,403	1	2	279,840
	Dutch/Unalaska	3	4		3	6		3	6	
	King Cove	1	2	C	1	1	C	1	2	C
	Other AK	0	0	-	1	1	C	0	0	-
St Paul	1	1	C	1	1	C	0	0	-	
SMB	St Paul	1	4	C	1	2	C	1	2	C
WAG	Adak	0	0	-	2	1	92,678	2	1	78,430
	Akutan	1	2	884,999	1	2		1	1	
	Dutch/Unalaska	2	4		1	2		0	0	
WBT	Akutan	1	4	3,850,296	1	3	919,400	1	2	187,127
	Dutch/Unalaska	3	5		3	5		3	6	
	King Cove	1	2	C	1	1	C	0	0	-
	Other AK	0	0	-	1	1	C	0	0	-
St Paul	1	6	C	1	4	C	1	1	C	

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Table 15 Processing by share type and community (2016/2017)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan	1	3	4,789,830	1	3	728,257	1	2	164,465
	Dutch/Unalaska	3	5		3	7		3	5	
	King Cove	1	2	1,363,858	1	2	153,867	1	2	C
	Kodiak	2	2		2	2		1	1	
Other AK		0	0	-	1	1	C	1	1	C
	St Paul	1	2	C	1	2		1	1	
BSS	Akutan	1	1	6,609,205	1	2	1,935,389	1	1	365,962
	Dutch/Unalaska	3	5		3	8		3	5	
	King Cove	1	1	C	1	1	C	1	1	C
	Other AK	0	0	-	2	2	1,424,531	2	2	217,845
St Paul		1	6	C	1	3		1	1	
EAG	Akutan	1	1	2,417,862	1	1	410,363	0	0	-
	Dutch/Unalaska	3	6		3	4		2	2	C
WAG	Akutan	1	2	918,726	0	0	-	0	0	-
	Dutch/Unalaska	2	4		2	5	C	1	1	C

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

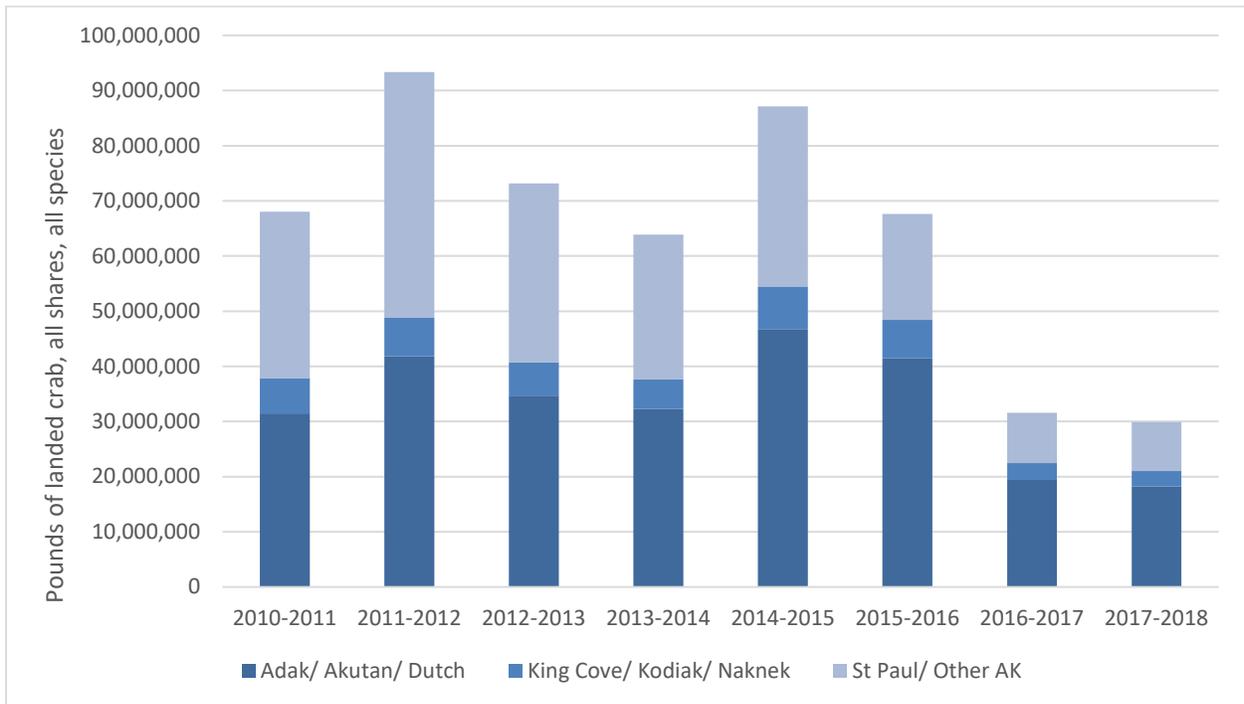
**Table 16 Processing by share type and community (2017/2018)**

Fishery	Community	Class A IFQ			Class B IFQ and CPO			Class C IFQ		
		Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type	Count of active plants	Count of RCRs	Pounds of share type
BBR	Akutan Dutch/ Unalaska	1 3	2 5	1,104,170	1 3	2 7	374,313	1 3	1 6	49,956
	King Cove Kodiak	1 2	2 2	880,832	1 1	1 1	C	1 1	2 1	C
	Other AK St Paul	0 1	0 2	0 C	2 1	2 2	115,121	2 1	2 1	3,114
BSS	Akutan Dutch/ Unalaska	1 3	2 4	1,497,517	1 3	2 5	982,132	1 3	1 5	71,453
	King Cove	1	1	C	1	1	C	1	1	C
	Other AK St Paul	0 1	0 6	0 C	2 1	2 3	557,900	2 1	2 1	9,272
EAG	Akutan Dutch/ Unalaska	1 3	1 6	195,547	1 2	1 2	11,276	0 2	0 2	0 C
EBT	Akutan Dutch/ Unalaska	0 2	0 3	0 C	1 1	2 1	C	0 1	0 1	0 C
WAG	Adak Dutch/ Unalaska	1 2	3 3	494,997	1 1	1 2	C	1 1	1 1	C
WBT	Akutan Dutch/ Unalaska	1 3	4 5	330,482	1 3	2 6	118,818	1 3	1 5	12,413
	King Cove	1	2	C	1	1	C	1	1	C
	Other AK St Paul	0 1	0 4	0 C	1 1	1 2	C	1 1	1 2	C

Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

Notes: C = confidential data; other AK= floating processors and C/Ps; CPO shares included with Class B and CPC shares included with Class C

**Figure 4** Percent of total crab shares processed in community groups (2010/11 through 2016/17)



Source: AKR RAM data sourced through AKFIN [Partial\_Offloads\_proc(8-2-19).xlsx]

### *Vessel capacity and the delivery process*

Background on crab vessel capacity and the typical offloading process is context that may be helpful in predicting circumstances in which the proposed flexibility may be used. This information was sought from representatives in the processing and harvesting industry based on their intimate knowledge about the vessels harvesting CR Program crab and the “typical operations” for processing crab (personal communication, S. Wilt, 3/15/19; personal communication, A. Mendoza, 4/8/19; personal communication J. Jacobsen, 5/10/19, personal communication, L. Farr, 4/10/19; personal communication, C. Lowenberg, 5/13/19; personal communication, N. Kimball, 5/14/19; personal communication, J. Iani, 5/14/19).

The holding capacity of BSAI crab vessels is estimated to average about 200,000 lb. Nearly all BSAI crab vessels have between two to four tanks for holding crab, with three tanks being the most common. The tank capacity varies even on an individual vessel. For instance, the aft tank typically holds less than the forward and middle tanks on a vessel with a three-tank configuration.

The speed of offloading at plants is determined by several factors. In terms of active offload speed, the pace is primarily determined by the processing, cooking, and freezing capacity of the crab line. Freezing is usually the most limiting factor when processing king crab. As a smaller crab, BSS crab is far more labor intensive, and thus, labor on the processing line can also be a limiting factor. The deliberative process of counting crab as it is thrown into the brailer can also slow down the process. Offloading speed can be impacted by crab quality as well. If a load contains undersized crab or crab close to the legal limit, the offloading crew has to slow down to measure whether crab are of legal / acceptable size. If the tank contains a lot of dead crab, then the offloading crew slows down to check whether each crab is alive or not. They greater number of dead or barely alive crab the slower the offload. Processing speed can be limited by product type also. Speed is fastest when producing an ocean run bulk pack, no size or quality grading and 40-pound packaging. If the processor is size grading BSS for over / under 8 ounces and grading out number 2 pack for dirty and undersize, and packing into a smaller package, production speed is greatly reduced.

Given this suite of varying factors, processing plants may be offloading at a rate of between 5,000 to 12,000 lb per hour. Rates are known to differ among plants as well. With tanks holding 60 to 180 thousand lb of crab, this means an offload may be expected to last between approximately 5 to 36 hours per tank. A typically offload may last around ½ day to 2 days but could last up to 4 days in some cases. This may also depend on the TACs for that season and whether the vessel is able to harvest at full capacity. Most processing plants offload a single tank at a time, although some may offload multiple tanks at a time, or multiple vessels in certain circumstances.

Substantial communication typically occurs between the crab harvester (vessel operator and/or cooperative manager) and processor they are delivering to, as well as between processors/ harvesters to ADF&G staff. Plants are generally aware in advance of how much crab will be delivered and when, as well as whether the delivery will be split. When the pollock and Pacific cod seasons overlap with the crab seasons, there can be potential timing conflicts with groundfish deliveries. If the conflicts are predictable the processing plant staff will seek to communicate with the crab and groundfish harvesters and adjust deliveries accordingly. Sometimes other changes occur or a cooperative manager decides to switch their vessels' schedules to fit around multiple plant schedules, but under share matching processors know what is being delivered and there are seldom any surprises. Processors also communicate with ADF&G so the dockside samplers are ready when offloads occur.

## **2.6.4 Vessel Safety**

This section provides a brief summary of issues related to BSAI crab vessel safety under the status quo, which are relevant to the proposed action. The marginal impacts of the proposed action on vessel safety are considered in Section 2.7.3.

### **2.6.4.1 Safety Under the BSA Crab Rationalization Program**

According to the Assessment of Safety in the Bering Sea/ Aleutian Island Crab Fleet (Appendix C to the 10- year Program Review for the Crab Rationalization Management Program in the Bering Sea/ Aleutian Islands; NIOSH 2016):

The BSAI crab fleet was identified as the most hazardous commercial fishery in the United States during the 1990s (Lincoln et al., 2013). During that decade, 73 crewmembers in the fleet died as a result of vessel disasters, falls overboard, or on-board injuries (Lincoln et al., 2013). Although safety regulations in place at that time required vessels to carry lifesaving equipment, such as immersion suits and life rafts, the regulations did not address the problem of overloading vessels with crab pots, a major cause of vessel disasters and deaths.

Two factors in particular likely had a large influence on the change in safety culture that began in the late 1990s. In 1999, the Coast Guard introduced an “At-the-Dock Stability and Safety Compliance Check” program. Coast Guard officers would board the vessel prior to departure and ensure gear was loaded in compliance with the vessel’s stability instruction (as further described in the next section). In addition to the increase in compliance checks, the introduction of the CR Program in 2005/06 drastically changed the nature of the fishery in ways that effected safety – as was intended. For instance, the issuance of quota to end the race for fish allows for harvesters to know how much crab they are authorized to harvest, knowing that they will not have to compete for these pounds. The issuance of quota, along with its transferability, affords increased cooperation and planning between harvesters (through cooperatives) as well as with processors. With harvest and delivery opportunities that could be more deliberative and less competitive, the program intended to allow vessels to choose safer ocean and weather conditions to harvest their quota, rather than feeling compelled to compete for crab TAC in unsafe conditions. While there may be other reasons why harvesters still feel pressure to fish in less-than-desirable ocean and weather conditions (e.g. market pressure or in an interest in being efficient with their time and variable costs, such as fuel, bait, and provisions), the structure of CR Program provides numerous flexibilities to allow harvesters to react to unsafe or emergency circumstances. Moreover, the CR Program resulted in significant quota consolidation onto fewer vessels. With approximately one-third the number of vessels post- CR Program that participate compared to the number of vessels pre-CR Program, the harvesting sector was able to choose its safer, more efficient vessels to continue participation.

While substantially fewer vessel disasters, falls overboard, and on-board injuries have occurred in the crab fisheries in recent years compared to the early 1990s (NIOSH 2016), safety hazards still exist. Fatal and non-fatal injuries on crab vessels are most commonly attributed to handling gear on deck, followed by setting gear, and hauling gear (ibid). Vessel disasters are still a threat; in particular pot vessels operators should be concerned with stability as discussed in the following section.

### **2.6.4.2 Stability**

In addition to other safety measures that apply to commercial fishing vessels in the BSAI, fishing with pot gear in the BSAI requires particular attention to vessel stability. Commercial vessels that are greater than 79 ft length overall are required to carry stability instructions (i.e. a stability report) specifically for that vessel, developed by a Naval Architect or another qualified individual, detailing the various loading conditions and capacities that pertain to that vessel and the gear employed. The vessel owner is

responsible for selecting a qualified individual to conduct necessary tests and calculations to evaluate vessel stability in accordance with §§28.500- 28.590. The United States Coast Guard (USCG) may conduct dockside exams to check that these larger vessels have documentation that stability tests were completed. Stability tests are reported to cost upwards of \$5,000 and may vary depending upon the provider.

Subsequent to the loss of the F/V Destination on February 11, 2017, there has been increased focus on maintaining and operating by accurate stability instructions for the vessel and an increase in spot checks by the USCG. Increased checks discovered that many reports on crabbing vessels were out-of-date; they were based on estimates of gear that has in some cases been replaced with heavier, more durable steel frames (Bernton 2017). The USCG released a Marine Safety Alert in October 2017 reminding vessel operators of the best practices for ensuring vessel stability (USCG 2017). In particular for pot gear users, the safety alert suggested:

- To pay special attention to the pot weights
- Annually weigh a percentage of them to verify if the actual weight (including shots of line and buoys) matches that in their stability instructions
- Weigh the lines wet- soaked lines can added as much as 15 pounds per shot, and
- Consult a Naval Architect for loading recommendations and amend if pots are heavier than what is listed in the Stability Instructions

The safety alert also reminded vessel operators that they should pay special attention to “weight creep” (accumulation of extra gear, equipment and parts carried aboard the vessel and not accounted for in their stability instructions) and that icing can make pots heavier and a vessel dangerously unstable. Real life conditions can easily exceed the 1.3 inches of ice accumulation on horizontal surfaces typically assumed in a vessel’s stability instructions; therefore, vessel operators should understand and take into account the increased risk in capsizing and sinking in these conditions.

All commercial vessels are subject to stability standards stating that vessels may not have instability resulting from overloading, improper loading, or lack of freeboard. A vessel’s voyage may be terminated if any of those improprieties are found, before or after leaving port. A vessel with less than 6 inches of freeboard amidships may be considered to be operating in an especially hazardous condition and would not be allowed to leave port.

#### **2.6.4.3 Enforcement when there are Safety Concerns**

Under the status quo, there is no official safety exemption from the prohibition on continuing to fish after an offload has begun. However, if a vessel must break this rule for safety reasons, and they contacted ADF&G, it would be ADF&G’s protocol to inform the AK Troopers and Office of Law Enforcement (OLE) and to inform the vessel to do whatever they need to do in order to stay safe (personal communication, K. Bush, 2/8/2019). Consequences may or may not occur after the fact and would likely be dependent on the vessel operator’s ability to justify their case as truly a safety concern (personal communication, B. Pristas, 3/14/2019). Thus, a vessel operator who chooses to violate this regulation for safety reasons is taking a risk and would be expected to defend and justify their actions at a later date. Consequences for being found in violation could include load seizure plus a fine; and they may implicate more than just the vessel operator.

To date, agency staff are not aware of a situation where a vessel has requested an exception to continue fishing after a partial offload due to safety issues. It is the violator/operator burden to demonstrate mitigating factors in their control. OLE considers all known and validated mitigating circumstances. If safety is a factor, operators should make decisions to avoid unnecessary risk. The operator should contact an OLE office early to inform of the circumstance. This can prevent unnecessary enforcement contact or

investigation. If OLE learns of a violation after it occurs, the degree to which an operational decision was motivated by safety versus efficiency can be more difficult to tease apart.

## **Analysis of Impacts: Alternative 1, No Action**

Alternative 1 would maintain the current regulation 50 CFR 680.7, which states:

*In addition to the general prohibitions specified in §600.725 of this chapter, it is unlawful for any person to do any of the following:*

*(b) Landing CR crab*

*(3) Resume fishing for CR crab or take CR crab on board a vessel once a landing has commenced and until all CR crab are landed, unless fishing in the Western Aleutian Islands golden king crab fishery*

In other words, once a vessel begins to land a crab species that is part of the CR program, they may not harvest more crab associated with the program with that vessel until all crab have been completely off-loaded from the vessel.

Regulations do not prohibit partial offloads of CR crab at multiple locations. A catcher vessel may offload a portion of CR crab on the vessel at multiple processors, under the current regulatory regime. The primary distinction is that vessels would not be permitted to resume fishing until the remainder of crab on the vessel is off-loaded. Under the no action Alternative 1, fleet fishing behavior would be expected to remain consistent with the status quo.

## **2.7 Analysis of Impacts: Alternative 2, Remove Prohibition**

Alternative 2 would remove the prohibition on resuming fishing for CR crab on board a vessel once a landing has commenced and until all CR crab are landed. The following analysis considers the effects of the action alternative on crab harvesters, crab processors and associated communities, management and accounting, and safety at sea.

The option under Alternative 2 states that in the event of a partial offload within a fishing trip, only an entire tank of crab contents may be offloaded. In other words, any tank started for offload must be fully offloaded. This option was included in an attempt to alleviate some of the concerns with catch accounting and the inability to edit the fish tickets based on statistical area if the catch from two partial trips is co-mingled in one tank. Consideration of this option is integrated into all of the following sections.

### ***Scope of Impacts***

Analyzing the expected scope of action is difficult in that there is no organized documentation of the number of times this regulation has prevented a vessel operator from maximizing the efficiency of their operation under the CR Program. As described in Section 0, representatives at OLE and NMFS Sustainable Fisheries (SF) have received requests for exemptions and about once a year they hear anecdotes of times when this regulation has become an operational burden to a harvester. However, likely there are other instances that are not communicated to agency personnel, or instances where the vessel operator never even considered the possible flexibility from conducting a partial offload mid-trip because it has been illegal throughout the CR Program. This analysis particularly relies on anecdotes to explain some of the nuanced circumstances where a vessel operator may wish to use this option.

While fishing after a partial delivery was fairly common practice pre-CR rationalization when vessels were racing to catch and deliver crab (personal communication, J. Shaishnikoff, 1/18/19), the program intended to, and has, increased coordination between harvesters and processor which has allowed for an



increase in the efficiency of offloads. Thus, the crab harvesters who have proposed removing this regulation expect this flexibility would only be used in emergency situations or special circumstances related to the safety or economics of the operations (personal communication, J. Jacobsen, 12/28/18). It is not anticipated that partial deliveries followed by additional fishing would become a routine operating procedure. The vast majority of the time it is more economically efficient to deliver all crab on the vessel before resuming fishing. Moreover, increased time in the tanks can drastically increase chances for deadloss of crab. Deadloss is not necessarily a conservation concern, because it is accounted for and deducted from the harvester's IFQ. However, this forgone revenue means crab deadloss poses a significant financial concern to both harvesters and processor. As an example, the WAG exemption to this prohibition has only been taken advantage of once since the regulations were changed in 2016 due to a higher than usual amount of deadloss (personal communication, E. Nichols, 1/8/19).

This limited scope of use that is expected to occur under this action is the context for the assessing the impacts in the following sections. If something in the fishery changes that motivates additional partial offloads this could increase the impacts from what is suggested here (for example, potentially greater changes in the distribution of landings, the amount of deadloss that occurs, and the quality of the data collected from these fisheries).

### **2.7.1 Effects on Crab Harvesters**

Crab harvesters in the BSAI CR Program (including those harvesting CDQ crab) are expected to be positively impacted by the proposed action. This regulatory change would not require any affirmative action or change in current operations for harvesters; however, it would allow them options in the circumstances in which it would benefit the harvester to conduct a partial offload. This analysis considers even the *opportunity* to use this flexibility a benefit for the harvesters; whether an individual vessel operator chooses to take advantage of this opportunity or not.

In their initial proposal, PNCIAC cited three reasons for this request including 1) addressing "Emergency Relief" regulations by allowing harvesters more flexibly in their deliveries, 2) the potential to aid the development of new product forms like live crab markets, and 3) the flexibility to conduct partial offloads of crab between North and South deliveries (i.e., conducting a partial offload to St. Paul before heading south) with fishing or gear retrieval in between.

These points all have to do with increasing operational flexibility for harvesters to access market opportunity and improve the efficiency of operations. The first point is in reference to regional landing requirements (described in Section 2.6.1) associated with A Class harvesting quota share. While regional landing requirements were included in the CR Program to provide certain communities protection from a potential shift in regional delivery patterns, the Council built in an emergency relief exemption from the regional landing requirements for situations that arise that are outside the parties' control which make fulfilling these landings impractical (e.g. ice event, lack of fuel at the dock, etc.). The harvesters, processors, and community representatives constructed and agreed upon a "Framework Agreement" contract that defines the terms and conditions of the exemptions. In their first point, PNCIAC contends that the operational flexibility from the proposal could help them fulfill their Northern region delivery requirements by allowing them to deliver opportunistically, if need be.

Their second reason listed for this proposal cites the potential for new crab market opportunities, such as a live crab market. These niche markets may require smaller opportunistic landings to be timed with air transportation, as was the case for WAG in Adak (described in Section 1). If the processor also has frozen storage capacity, it may be able to accommodate a full offload. If not, this proposed action may aid in the development of that market. Live markets are further discussed in Section 2.7.2.3.

The third reason cited is an example of operational efficiency, allowing the vessel to choose whether to "top off" on crab in between their Northern deliveries and their Southern deliveries. Whether due to

regional delivery requirements or ocean/ ice/ weather conditions there may be reasons why a vessel may do a split delivery between a processor in St. Paul and a processor in a Southern region community. Harvesters may wish for the option to be able to continue fishing (e.g. fill their one empty tank) or haul their empty pots before leaving the Northern fishing grounds. It is unclear the level of deadloss this would accrue; the harvester would certainly have to take this into consideration. They would weigh the risk and expected extent of deadloss against the cost (including opportunity cost) of returning to the fishing grounds.

Harvesters also highlighted certain situations where the ability to do a partial delivery could alleviate stability issues. For instance, many BSAI crab vessels are not rated to have full tanks of crab in addition to all of their pots on deck. If the ice was advancing around the Pribilof Islands, requiring expeditious removal of gear from the grounds, under the proposed change, a vessel could deliver their “oldest” tank of crab, possibly freeing up capacity to pull their remaining gear prior to delivering the remaining tanks of crab. A discussion about the proposed impacts on vessel safety are continued in Section 2.7.3.

### ***Alternative 2, Option: Requiring the Offload of a Full Tank***

The option under Alternative 2 is intended to address the fish ticket concerns raised in Section 2.7.4.2 by requiring that if crab is offloaded, the full tank is offloaded. This may free up capacity to keep crab from separate partial trips in separate tanks and may help ADF&G edit fish tickets with corresponding information on the statistical areas that crab was harvested from. An alternative way to address this requirement would be to keep crab from separate “partial trips” in separate tanks. From a harvester perspective, this would likely not be an additional burden the majority of the time this flexibility it used. As previously described, harvesters seek to be as efficient as they can be in offloading crab in order to minimize their risk of deadloss, which they are not compensated for. In particular, draining water from the tank in order to remove some of the crab and then pumping the tank full of seawater again increases the risk of deadloss for any remaining crab. Harvesters have economic motivation avoid this practice.

However, there are some economic, practical, and enforcement challenges with requiring full tank offloads of crab. As described in public testimony (February 2019 Council meeting) there may be some situations where this requirement may end up being an economic obstacle. One anecdote that was described occurred this past winter season (18/19). A vessel was delivering to St Paul and the wind direction changed creating a swell in the harbor. It was unsafe for the vessel to continue offloading and the vessel operator was asked to move outside the harbor. In this situation, public testimony described that the vessel operator had two options, they could wait indefinitely until the conditions were safe to continue offloading in St Paul or the harvesters could travel to one of the Southern region processors (assuming the IFQ was not Northern-region designated) and continue offloading. If the proposed action was in place (the prohibition was removed), the vessel may have had the third option to go fishing. In this scenario, the processor may not have offloaded the full tank of crab when they were suddenly required to cease offloading. Thus, in this case, the proposed Option may have inhibited the vessel’s ability to go back out and fish. In addition, there may be challenges with offloading a full tank if those pounds of crab are already share-matched with a different processor or the available IFQ is designated for a different region. Finally, there would be no way to enforcement that this requirement is upheld. There is currently no agency requirement to conduct a tank inspection between partial offloads, and in some ports there may not be an ADF&G or enforcement representative available to initiate such a requirement.

To sum, this Option to Alternative 2 would likely relieve the data concerns if vessel operators were able to communicate which tank of crab came from which partial fishing trip (and thus, the corresponding statistical area). However, as a requirement, this practice would likely be unenforceable, in addition to decreasing some of the flexibility in a small subset of circumstance when this flexibility might be used. It may be possible to communicate with vessel operators the “best practices” of keeping crab from separate “partial trips” in separate tanks and how to signal to ADF&G where these crab were caught.

## 2.7.2 Effects on Crab Processors and Communities

As the Council considers amending regulations to allow crab vessels to conduct a partial offload of CR Program crab and continuing to fish, it is necessary to understand the potential impacts to the processors and communities connected to these deliveries. Because the proposed action would not change the underlying management structure of the BSAI CR Program, particularly in terms of the established delivery requirements described in Section 2.6.1, it is expected to have a fairly limited scope.

The proposed regulatory amendment would not change the requirement to have access to IFQ in order to harvest CR Program crab, nor the requirement to have access to IPQ in order to process catcher vessel A share crab. The amendment would not change the meaning of the QS or PQS. Given the marginal increased flexibility this regulatory change may have for harvesters, the proposed amendment is not expected to impact who holds the QS or PQS (i.e., it is not expected to influence quota share market activity), or who harvests the IFQ.

This section discusses potential implications if this regulatory change motivates harvesters to change their fishing behavior from their operations in the recent past (i.e. delivery patterns for B and C shares, rates of crab deadloss, ability to access live markets). These issues are considered under the presumption that this flexibility would only be used in rare events, rather than as a standard operating procedure.

### 2.7.2.1 Distribution of Landings

A change in the distribution of crab landings from recent trends could impact both processors and communities. There are a few reasons not to expect the proposed action to create large changes in the distributions of landings. As previously described, catcher vessel A shares must be delivered to a processor holding unused IPQ. A class IFQ and IPQ are “share-matched” on a pound to pound based prior to delivery; thus, processors generally know ahead of time whether they will receive deliveries and how much CR Program crab to expect. In addition, A class IFQ and IPQ are subject to regional share designations. In most CR Program fisheries, regionalized shares are either North or South, with North shares designated for delivery in areas on the Bering Sea north of 56° 20' north latitude and South shares designated for any other areas, including Kodiak and other areas on the Gulf of Alaska (see Table 1). These provisions, which are intended to protect processor investment in program fisheries and preserve regional interests in the fisheries, would not change under the proposed action.

Class B and C shares however, as well as C/P shares, can be landed with any RCR. QS holders that were issued or have acquired catcher vessel owner shares and are unaffiliated with a processor receive 90% of their IFQ as A Class and the remaining 10% as B class.<sup>3</sup> In addition, C share IFQ, available to be held by active crew in the fisheries, are free from processor share landing requirements and may be landed with any RCR. The absence of delivery restrictions with Class B and C IFQ is intended to provide harvesters with additional market leverage for negotiating prices for landings of crab. With additional flexibility for partial deliveries, there is a possibility that the proposed action may result in some minor change in distributional B and C share crab landings.

To the extent there are changes in the landing patterns of Class B and C or C/P shares this could impact communities in several ways. Many communities that receive deliveries of crab levy their own

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<sup>3</sup> To ensure that the benefit of the B share allocation to independent harvesters is not diminished by vertical integration, B shares are issued only to QS holders to the extent of their independence of processor affiliation. Affiliation under the regulation exists in the case of either functional control of the QS holder or common ownership in excess of 10% (50 CFR 680.2). QS holders receive Class A IFQ in an amount equal to the IPQ allocation of their affiliates, with any remainder subject to the Class A IFQ/Class B IFQ split.

borough/municipal raw fish tax as a percent of the ex vessel revenue.<sup>4</sup> Moreover, additional processing plant activity can have economic impacts on the community. These impacts are not balanced between communities; i.e. some communities are more vulnerable to changes in landing patterns than others and some processing plants are more integrated into the community than others.

Any redistribution of landings of Class B and C shares or C/P shares that are incentivized from the proposed action would be anticipated to result in minor change. In addition to expectation that the proposed flexibility would be used sparingly (see Section 2.7), there are certain amounts of Class B and C shares that harvesters generally pre-commit to a processor prior to the season for reasons other than convenience (personal communication, J. Jacobsen, 7/15/19; personal communication, E. Poulsen, 7/16/2019). These commitments may be based on accessing markets or due to pre-established relationships between harvesters and processor (e.g. the vessel tenders with the processor or receives other benefits like offseason vessel storage). Pre-season commitments of B and C shares allow the processor to pre-establish markets. There is also often a smaller amount of Class B and C shares that are not pre-committed to a processor and are necessary for landing logistics. These Class B and C shares allow harvesters flexibility in their catch and deliveries. For example, if a harvester is delivering share-matched IFQ to a processor and wants to make sure they have enough to cover this poundage, they may bring the processor extra B and C shares to ensure they do not come up short. It is not possible for analysts to see how much B and C class IFQ is privately committed through internal contracts between harvesters and processors, but it may be less likely that the landing patterns of these IFQ would change. In Table 9 through Table 16, the reader can infer instances where B and C shares were landed with processors that did not also receive landings of A shares.

Moreover, it is the intent of the Class B and C shares to provide harvester flexibility and incentivize new market opportunity. Although this may result in distributional impacts for communities (positive for some, negative for others), a slight redistribution of Class B and C shares may mean a new community is able to participate in the CR Program, promote new wholesale market potential, and potentially generate raw fish tax revenue and economic impacts for that community.

### **2.7.2.2 Crab Deadloss**

As long as all deadloss is landed, it is an economic problem rather than a biological problem, because the deadloss is deducted from the TAC and the IFQ allocations. All deadloss is discarded, because it is no longer marketable. Deadloss is exacerbated with time; when vessels are not able to offload quickly, due to longer trips or extended wait times at the dock. Mortality can also increase with poor water quality (i.e. freshwater influence) and with the presence of snails in the tanks (personal communication, S. Wilt, 12/17/18). Table 6 illustrates the level of crab deadloss that has occurred by fishery overtime.

Both harvesters and processors have a financial incentive to minimize deadloss since these pounds are deducted from the IFQ, but the crab is not marketable. The more pounds of deadloss, the more forgone revenue for both parties. Although there are frequently contractual agreements between harvesters and processors regarding allocation of deadloss, deadloss can particularly devalue IPQ, which often matches with A class IFQ. While harvesters may sometimes choose to attribute deadloss to B and C class IFQ, these classes of IFQ are able to be landed with any RCR and therefore are generally more valuable. Thus, there is a financial incentive for any deadloss to first be applied to any available A share IFQ. Additionally, harvesters may use this flexibility when their own benefits outweigh the costs of potential increase in deadloss. These types of benefits (e.g. saving time and fuel costs of returning the fishing

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<sup>4</sup> Alaska Taxable:  
[https://www.commerce.alaska.gov/web/Portals/4/pub/OSA/Alaska%20Taxable%202018\\_ReducedSize.pdf?ver=2019-02-04-120751-543](https://www.commerce.alaska.gov/web/Portals/4/pub/OSA/Alaska%20Taxable%202018_ReducedSize.pdf?ver=2019-02-04-120751-543)

grounds) may not spillover for the processors; however, the costs of deadloss would. Thus, processors holding IPQ may be practically sensitive to minimizing crab deadloss.

### 2.7.2.3 Markets for Live Crab

As previously highlighted, one of the primary reasons the Council recommended an exemption for the WAG fishery from the regulation in question, was to encourage the development of a live crab market in Adak. The development of this type of specialty market in the BSAI is relatively new and has the potential to provide a premium price for BSAI crab as demonstrated in the analysis for that action (NPFMC 2016). Thus, given the capacity restrictions on air transportation out of Adak, the partial delivery flexibility for WAG was intended to facilitate smaller, opportunistic deliveries to the live market.

The vast majority of king, BSS, and WBT/ EBT crab caught off of Alaska are butchered, cooked, frozen, and sorted by size upon landing. The primary product from these species is frozen crab sections, which accounted for about 95% of all king crab product volume caught off Alaska in 2014 and almost 100% of all BSS, and WBT/ EBT crab product volume caught off Alaska in 2014 (AFSC 2016). In addition to cooked and frozen sections, about 5% of Alaskan king crab was sold whole (either frozen or alive) in 2014 and small amount of Alaskan BSS and WBT/ EBT crab is also sold raw for consumption in Asian markets (ibid).

Developing a specialty market for live crab requires considerable sensitivity to ensure survivability of the crab. In addition to ensuring the crab survives the journey out of the ocean, in and out of the vessel tanks, through offloading and weighing, operators must also ensure survival through tote storage, as well as packaging and transportation, until they reach their destination. Deadloss is a primary concern. The Adak's Eagle Call described operations under Premier Harvest, LLC, the RCR in Adak, when the WAG action was proposed. On the day of shipment, the totes were drained, and crab was placed right-side up in boxes lined with wax paper and moist environment.<sup>5</sup> If the plane could not arrive due to weather, the crab would be unpacked and carefully returned to the habitat totes, which can increase the risk of deadloss.

More recently, Golden Harvest Alaska Seafoods has taken over processing operations in Adak, processing Pacific cod, pollock, and halibut in addition to live and frozen crab.<sup>6</sup> Diversification in species allows for the economies of scale needed to operate frozen storage and provides for the ability to receive larger shipments of crab than just what the jet may hold for live market delivery (personal communication, S. Minor, 1/7/19). The 2017 season was the first year Adak-based Golden Harvest Seafood shipped live golden king crab to markets in China (Parker 2018). This processor hopes to expand their live crab market to other species of crab as well; however, these market opportunities depend on many other factors (e.g. tariffs resulting from the trade war with China). If they are able to develop markets for live BSS, and WBT/ EBT crab, the proposed regulatory change may eliminate the occasional instances when this regulation prevents vessels from delivering to this or other live markets opportunistically.

While there may be other communities that could be candidates for developing live crab market access, it is unlikely that the business plans of those candidate operations would be contingent on this proposed flexibility. Adak's situation was unique when requesting an exemption for WAG because, at the time, this location did not have the capacity to accept a full delivery (live or frozen) and it was not near a plant that could accept the remainder. If the processor has the capacity to accept a full vessel of crab (either all of which is destined for a live market or some of which would be frozen sections), in many cases facilitation of a full delivery before the continuation of fishing would be more economically desirable for both the harvester and processor. This is exemplified by the rare use of this flexibility by vessels delivering to the

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<sup>5</sup> "The New Company in Town, Premier Harvest, LLC." The Adak Eagle's Call. April 2015. Available at: <https://adak-ak.us/content/tec/2015-04.pdf>

<sup>6</sup> <http://goldenharvestalaska.com/>

live market in Adak. Thus, if locations such as St. Paul, Aktuan, Dutch Harbor, King Cove, or Kodiak were able to facilitate a live market, processors at these locations could still likely accommodate a full offload from crab vessels. There may be other candidate communities that, similar to Adak, do not have established capacity for frozen storage, but have access to reliable transportation that *possibly could* facilitate a live market. For instance, Cold Bay is home to a 10,420 ft runway, could be accessible to BSAI crab vessels, and has no recent history of crab deliveries. However, in addition to transportation, there are numerous other factors that affect the ability of a reliable live market to develop (e.g. creating relationships with harvesters, establishing buyers, accounting for tariffs, and many other operational logistics associated with operating in rural Alaska). Predicting additional market development is simply speculative at this time.

If the proposed action facilitates delivery to existing or future live crab markets, it may be beneficial to the harvesting sector, however it may result in a reduction in the quality of the crab destined for the traditional market. Crab destined for the live crab market are chosen for survivability, and crew may carefully select large, clean, undamaged crab for delivery to the live market. Thus, an increase in opportunity for current or future live crab market could result in processors that do not participate in this market receiving a relatively larger portion of lower quality crab (e.g. smaller or with barnacles).

While high grading for a live market may be a concern for processors specializing in cooked frozen sections, the proposed action's marginal influence on harvester's ability to access a live market is expected to be small. Again, this change is expected to be used in specific emergency situations or special circumstances related to the safety or economics of the operations. Markets for live crab may develop regardless of this action; however, removing this regulation may eliminate the occasional instances when the regulation prevents vessels from delivering to live markets opportunistically. Thus, the proposed action may facilitate this type of market in specific circumstances.

### **2.7.3 Effects on Safety**

Several harvesters testified about the proposal's benefits in increasing vessel safety (February 2019 Council meeting). These testifiers highlighted situations related to weather and ocean conditions where any additional operational flexibility could improve safety at sea.

As mentioned in Section 2.6.4.3, the degree to which an operational decision was motivated by safety versus efficiency can be difficult to tease apart. It seems unlikely to analysts that the proposed action would address *purely* safety issues that may arise, because the proposed action is additional *fishing* flexibility; i.e. allowing vessels to go back out fishing (or hauling gear) after part of an offload. If conditions are dangerous, the safest option would generally be not to continue fishing. There are situations however, where the use of this flexibility might be related to poor ocean and weather conditions. For instance, this flexibility may be advantageous if a storm is forecasted and harvesters want to retrieve their gear from the grounds before they are done offloading. Offloading a whole vessel may take more than one day. Without this flexibility, a vessel operator may be tempted to retrieve gear in poor weather after the offload is complete; however, the harvesters are never obligated to retrieve gear in unsafe conditions. This decision would also be motivated by operational costs (loss of gear, loss of time, etc). Thus, safety-related circumstances are likely to include at least some personal economic motivation as well. General operational flexibility *can* improve safety at sea, but as always, this needs to be paired with rational judgement about risks.

### **2.7.4 Effects on Management, Accounting, and Enforcement**

The primary concern from the proposed action has to do with ensuring proper accountability. While this prohibition was initially included in the CR Program to alleviate enforcement concerns about illegal discarding, the practice of offloading all crab before returning to fish has greatly simplified the

monitoring and accounting associated with crab harvesting. The proposed action complicates the data collection programs run by ADF&G and NMFS for the CR Program and may degrade the quality of some of the information collected.

Data collection and accounting in the BSAI crab fisheries are incorporated in a number of different ways. The State operates the Observer Program for BSAI crab fisheries. Some of the relevant reporting requirements include completing a Federal Daily Fishing Logbook (DFL), responding to a Confidential Interview Form (CIF), and submission of a Fish Ticket. In addition, the State runs a Dockside Sampling Program, stationing samplers in the major ports around the BSAI. Information collected through these avenues is used in management (e.g. accounting for IFQ and ensuring harvest remains under the TAC), informing quality science (e.g. stock assessments and TAC setting process), and enforcement (e.g. identifying the harvest of illegal crab). This section provides some background on the State Observer Program, relevant reporting requirements for crab harvesters and sampling responsibilities of observers and dockside samplers (further information is available in ADF&G 2018). Each section highlights any potential issues from the proposed action.

#### **2.7.4.1 Observer Coverage**

State of Alaska regulations (5 AAC 39.645) provide ADF&G the full authority and responsibility for deploying onboard observers on any vessel participating in the commercial BSAI crab fisheries as necessary for fishery management and data-gathering needs. Schwenzfeier et al. (2014) provides details on regulations pertaining to the State of Alaska Shellfish Onboard Observer Program and a history of that program from its inception in 1988. State regulations for observer coverage require C/Ps to have 100 percent observer coverage. The requirements for catcher vessels are outlined in Table 17. In the 2018/2019 season observer coverage was assigned by randomly selecting 20% or 30% of the vessels (in BBR and BSS/ WBT/ EBT, respectively) and requiring observers for the whole season. Prior to season opening, ADF&G will announce vessels that have been selected for observer coverage.

**Table 17 Observer coverage requirements for catcher vessels in the CR Program fisheries**

Crab Area	Crab fishery	Observer coverage requirement
Registration Area O (Aleutian Islands)	red king crab (W of 179 W long)	During 100% of the harvest
	golden king crab (W of 174 W long)	During 50% of the total harvest for each of the 3 trimesters.
	golden king crab (E of 174 W long)	During 50% of the total harvest for each of the 3 trimesters.
Registration Area T (Bristol Bay)	red king crab	During harvest of 20% of the total red king crab weight harvested by each CV OR the department can randomly select 20% of the CV harvesting BBR to carry an observer for 100% of the time
Registration Area Q (Bering Sea)	Pribilof Islands red and blue king crab	During 100% of the harvest
	St. Matthew Island Section of the Northern district blue king crab	During 100% of the harvest
Registration Area J (Westward)	Bering Sea District <i>C. opilio</i>	During harvest of 30% of the total <i>C. opilio</i> weight harvested by each CV OR the department can randomly select 30% of the CV harvesting <i>C. opilio</i> to carry an observer for 100% of the time
	Bering Sea District <i>C. bairdi</i>	During harvest of 30% of the total <i>C. bairdi</i> weight harvested by each CV OR the department can randomly select 30% of the CV harvesting <i>C. bairdi</i> to carry an observer for 100% of the time <sup>7</sup>

Source: State of Alaska regulations 5 AAC 39.645

For the purposes of observer sampling, an observed trip is considered to be the time period between when an observer boards a vessel and the complete delivery of all crab harvested. The observer’s second trip starts after the first full offload is complete, and so on. Observer trips are not defined in state regulations, but the observer sampling protocol directs observers to conduct a tank inspection at the beginning of their initial trip to confirm that the tanks are empty (NPFMC 2015). Sometimes, a catcher vessel will deliver portions of the catch from the same trip to different processors, and if it is an observed trip, the observer stays on the vessel until the offload is complete.

*Likewise, under the proposed action to allow partial offloads of crab within a trip, if a vessel does not deliver all of its harvested crab to a processor, and resumes fishing, the observed trip would likely not be considered complete until the entire observed harvest has been delivered. However, since observer coverage for BBR, BSS, and WBT/EBT is not based on a trip-by-trip basis (instead it is based whether the vessels is selected or not or based on a percent of the vessels total harvested weight) partially offloading crab while a trip is still occurring should not interfere with the observer selection process.*

*This action would likely require some changes in protocol to address these types of trips. For example, if a vessel has an observer, that observer is responsible for conducting the Confidential Interview and obtaining the DLF pages as will be described below. The Observer Program may need to develop protocol to determine how and when these reporting requirements are addressed.*

#### **2.7.4.2 Reporting Requirements**

**CIF and CIF Summary** Observers or dockside samplers interview the vessel operator and record information regarding fishing locations, the number of crab retained, number of pots lifted, average soak times and fishing depths, and gear sizes. The CIF and the CIF Summary are a synopsis of the daily activities of the vessel and are submitted together as a single data set when a trip is completed. The CIF is a day-to-day breakdown of fishing activity, and the CIF Summary encapsulates trip and offload information such as average weights and deadloss weights, and personal use specific to the offload.

<sup>7</sup> For Tanner and snow crab, observer coverage ranges 30% to 100% for all vessels and selected vessels carry observers for 100% of their operations. CPs are required to carry observers for 100% of fishing operations for all fisheries.



If a catcher vessel delivers portions of the catch from the same trip to different processors, one CIF data set is completed for the entire trip and one CIF Summary is completed for each offload. Each CIF Summary has the corresponding processor name, port, and summary date for the offload. In the event of multiple deliveries from the same trip, the interview is conducted and the DFL pages pulled during the first offload, or larger delivery if that can be discerned. In particular, when these responsibilities fall to the dockside samplers (as opposed to the observer, which may be on board for the full offloading process), communication among different dockside samplers as well as vessels operators becomes very important in ensuring all of the reporting and sampling responsibilities are completed.

**DFL NMFS** requires DFLs for vessels that participate in the CR Program. The DFL include a set-by-set breakdown of the catch. The vessel operator will record the start and end latitude and longitude for each set, which is later translated into ADF&G statistical area by ADF&G staff. Additionally, each set includes soak time, pots depth, number of lost pots, and an estimate of the number of crab and/ or total estimated weight. The observer or dockside sampler collects one of the carbon copy pages from the DFL and submits them along with the CIF summary. Often the DFL provides the most detailed information on catch by statistical area. If this information is detailed and accurate it expedites the interview process for the CIF. The DFL is used as a tool to assist in editing the confidential interview; both are used by management staff to verify fish ticket information and to edit catch and effort by statistical area.

*If vessels are permitted to conduct partial offloads and resume fishing, ADF&G would need to establish a protocol for conducting the interview and collecting the DFL pages in these conditions for observers and for dockside samplers. This may need to take place after the second round of fishing has occurred in order to account for data on the full “trip”. Increased communication would also need to occur between processor and/ or harvesters and ADF&G so they could ensure appropriate protocol is understood by dockside samplers. Thus, it would be advantageous if harvesters notified ADF&G, even informally, of the intention to conduct a partial offload and return to fishing prior to landing the remainder. Likely no changes to the DFL would be needed, but if the vessel operator could use the existing form and indicate which set went into which tank, this could help ADF&G edit the fish ticket (see further discussion in next section).*

**Fish Ticket** The fish ticket is a record of product purchased from a fishing vessel by a processor. One fish ticket is submitted for each offload per RCR. Many IPQ holders (constituting different RCRs) will have their quota leased or custom processed which means that during offload at one processor, multiple fish tickets may be submitted. In addition to including the official weight and number of crab purchased and deadloss not purchased, the vessel operator will also provide information on the statistical area of the catch. Experience with fish tickets have shown these self-reported fields tend to be more general and less accurate. Thus, the fish ticket is later edited with the proportion of catch attributed to each statistical area of catch using CIF and DFL information obtained by observers and dockside samplers. For instance, vessel operators record the beginning and end lat/long for each set on the DFL as well as an estimate of the number or weight of crab retained from each set. That information is entered by ADF&G staff into a database that converts lat/long into the statistical areas fished. This provides the proportion of crab caught in each statistical area that can be used to edit the fish ticket.<sup>8</sup>

*Therefore, in addition to changes in protocol, fishing after a partial offload could change the data quality related to catch and effort by statistical area. In the event of a partial delivery currently, these metrics by statistical area are extrapolated to each offload based on the proportions of harvest reported in the DFL or CIF, the additional fishing between partial offloads could introduce new statistical areas for which*

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<sup>8</sup> This process is illustrated in Ethan Nichols' presentation on retained catch sampling in the Bering Sea: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=9457ca80-ca25-446f-ab2b-03f0fc511c64.pdf&fileName=Retained%20Catch%20Sampling%20BSAI%20crab%20PRESENTATION%20E.Nichols.pdf>

*harvest from the first “partial fishing trip” would also be attributed to. This increased extrapolation could erode the quality of these edits.*

*ADF&G is able to provide this back-up information in order to edit the fish ticket for the majority of trips. For instance, during the 2017/18 season, in approximately 90% of the deliveries for BBR, BSS, or WBT fisheries, an interview was conducted and DFLs were obtained by either an observer or dockside sampler (personal communication, E. Nichols, 1/21/19). The DFL are required to be completed in every trip. Depending on TACs and available resources, dockside samplers are generally stationed in Dutch Harbor, St Paul, King Cove, and Akutan. If there is no dockside sampler or observer present, DFL pages are collected and reported at a later date.*

*There may be a way to require notification of these types of partial delivery trips so they may be tracked. Fish tickets could include a box that would notify the data user that delivery was part of multiple rounds of fishing. This would help analysts track how often this opportunity is used and provide notification about data that has not been edited.*

*If harvesters are able to keep crab from separate partial fishing trips in separate tanks, and indicate which tank were filled during which round of fishing, this may alleviate concerns with data quality. In fact, this may decrease the amount of extrapolation that currently needs to occur when editing a fish ticket on a partial delivery. However, as described in Section 2.7.1 it is expected that requiring vessels to keep crab in separate tanks and with tanks being offloaded completely would not be enforceable. Moreover, there may be some situations in which this would be unlikely to occur.*

#### **2.7.4.3 Sampling and Legal Tally**

**At-sea sampling (Observers)** Randomly selected pot lifts are enumerated and sampled for species identification. For a subset of these pot lifts, measurements and assessments of ancillary characteristics are also recorded for crab of selected species. The protocol is the same for both catcher vessels and C/Ps, but the target number of sample pots may be different, depending on vessel type.

Pot sampling conducted by observers provides independent data on species composition and bycatch, CPUE, size frequency distributions, crab diseases, fecundity, and mortality associated with fishing or sorting. Specifically, observers record: the sex, carapace length, and shell condition of each crab; the legal status, relative to the minimum legal size of each male; the fate of each legal male as either retained (i.e., for delivery or processing) or non-retained (i.e., discarded); and data on the reproductive condition (clutch fullness, egg development, and egg color) of each female.

*Protocol for at-sea sampling would likely not change under the proposed action. The Observer Program may need to define and adjust to a new definition of “trip” for some sampling purposes.*

**Retained catch sampling (Observers and Dockside Samplers)** Observers sample retained catch in EAG, WAG, commissioners permit fisheries, floating processors, C/Ps, and cost recovery fisheries. In the BBR, BSS, EBT/WBT, and SMB fisheries, observers onboard vessels will perform dockside sampling duties and dockside staff will only sample non-observed vessels. This change was made to increase dockside sampling in remote ports that are unstaffed.

**Average Weights:** Observers and dockside samplers obtain independent, representative average weights of retained crab that are reported on the Confidential Interview Summary form. At least three brailers per species retained, and one brailer from each tank are taken when possible. If a processor is using totes instead of brailers, the target is to sample at least six totes per species retained. A full count of crab in each brailer or tote is taken to compute average weight.

*Currently, in the event of a multiple deliveries, the objective is to have a dockside sampler or Observer obtain an average for each offload. Therefore, it is likely that if the proposed action was passed, ADF&G would seek to obtain average weight at each partial offload within the trip.*

**Size Frequency:** The objective of size frequency sampling is to document the distribution of size classes and shell conditions in the retained catch to determine which segments of the crab stocks are removed by fishing. Because crab shed their entire exoskeleton when they molt, physical size is the only practical method for estimating age. The biological measurements made by observers and dockside samplers are compiled to show the relative age distributions of crab populations and strength of discrete age classes. Size frequency data are also used to generate estimates of abundance and recruitment (in the stock assessment model) and may be used to establish allowable harvest rates and predict population trends. The goal is to conduct a 100-crab size frequency sample for every offload. If the vessel offloads to different processors in the same trip, a 100-crab sample for each offload is conducted by the observer, using separate forms for each offload. Dockside samplers conduct size frequency samples at only one processor in the event of multiple deliveries.

*Under the proposed action, there is a greater chance of double sampling for vessels that conduct partial offloads and then return fishing with crab onboard. ADF&G may wish to conduct size frequency sampling to help ensure crab are not double-sampled. In addition, size frequency sampling can lead to a legal tally if illegal crab are identified within that sample. As will be discussed below, in the event of citation, enforcement must be aware of the total weight of the retained catch in order to determine the percentage that would be seized. This may not be apparent during the first offload if crab remain in the tanks.*

**Deadloss Estimate:** At each delivery, a dockside sampler or observer will seek to obtain an estimate of the deadloss onboard. These estimates are recorded in two categories, the first being “live, legal and not purchased” – for crab that was legal-sized male but not purchased by the processor. This may include crab with barnacles, very old shell or in certain fisheries (BSS or WBT/ EBT) processors may have size standards higher than the legal size. The second category of deadloss is “all other, live or dead,” referring to females, undersized crab, or deadloss not purchased by the plant.

*Currently, in the event of a multiple deliveries, the dockside sampler or observer will estimate deadloss at each offload. Therefore, it is likely that if the proposed action was passed, ADF&G would seek to obtain average weight at each partial offload within the trip.*

**Legal Tally:** A legal tally may be performed if illegal crab are found in the size frequency to determine the percentage of illegal (female, sublegal, or illegal species) crab being retained by a vessel. The sampling goal is a tally of 600 crab or 25% of the load, whichever is smaller. If multiple deliveries are made to different processors in the same trip, a 600-crab sample is performed for the entire trip, apportioned over all deliveries. If possible, sampling is done proportional to how much crab is delivered to each plant.

*The proposed action presents a challenge for understanding how to interpret the enforcement response to illegal crab. The collection of evidence specimens is determined by the calculated percentage of illegal crab, based on the total number of illegal crab from all partial deliveries for one trip combined. However, if illegal crab is discovered in the first offload, and enforcement does not know the total weight of the retained catch, they would not know the percentage that would be seized. This could occur if some crab from the first round of fishing remained in the tanks. If legal tally was collected after the second round of fishing, there may be no way to differentiate one partial fishing trip from the other. Troopers will need to determine how to respond to these circumstances.*

#### **2.7.4.4 Office of Law Enforcement**

NMFS OLE has previously voiced concern over this the existing prohibition during the analysis for exempting WAG from this requirement. About once a year there is a reported case in which harvesters are constrained by this prohibition; primarily due to unique logistical issues (personal communication, B. Pristas, 1/10/19). As one example, if a vessel is conducting a split delivery of CR crab, (if they delivered

to St. Paul and also plan to deliver to Dutch Harbor), that vessel is not able to pull pots until all of the crab is offloaded. This includes collecting gear that may be on the grounds, which may be considered “fishing.” In this example, the vessel would need to run to Dutch Harbor and then travel back out to the fishing grounds to collect empty pots. Officials are responsible for making sure this prohibition is maintained regardless of these circumstances. Regardless of whether OLE prosecutes or the level of the consequences, OLE does not wish to encourage violating Federal regulations as a cost of business.

The OLE representative stressed that these types of circumstances are all a little different; sometimes the crux of the issue is related to weather and safety, often it has to do with the economics of the operations. It would be difficult to create an exemption for the diversity of the circumstances where this prohibition has become problematic; thus, OLE suggests removing the prohibition.

#### **2.7.4.5 Cost of Implementation**

There are several one-time costs and a few ongoing costs that would be incurred under the proposed action. One-time costs include those associated with the rule-making process; costs associated with an FMP and regulatory amendment. In addition, this action would require ADF&G staff to further consider programmatic changes that may need to occur. There would be programming costs associated with amending the fish ticket form to include notification of this type of partial offload trip and some mechanism to link it to the other deliveries after the second round of fishing. The primary variable cost that would be expected to continue over time includes the increased communication necessary among ADF&G dockside samplers, crab vessel operators and ADF&G, as well as plant managers and ADF&G to identify this situation and have an adequate plan in place for accounting.

The industry would be responsible for any increased management costs through cost recovery. Section 304(d) of the Magnuson-Stevens Act authorizes and requires the collection of cost recovery fees for limited access privilege programs and the CDQ Program. As a limited access privilege program, the CR Program includes a cost recovery component which authorizes the collection of actual management and enforcement costs **up to three percent of ex-vessel gross revenues.**

In calculating cost recovery fee, direct program costs are calculated by determining the incremental costs of managing the CR Program; that is, costs that would not have been incurred but for the CR Program. These costs cover the management, data collection, and enforcement of the CR Program by NMFS, ADF&G, and the Pacific States Marine Fisheries Commission. To arrive at these costs, every operating unit calculates CR Program direct program costs, broken out by cost categories including personnel/overhead, travel, transportation, printing, contracts/training, supplies, equipment and rent/utilities.<sup>9</sup>

Recent years have not reached the three percent threshold; thus, additional fees could be levied. The cost recovery fee was 1.57% for both the 2016/17 and 2017/18 seasons and then increased to 1.85% for the 2018/19 season. This increase in the fee for the 2018/19 season was due in part by the increase in direct program costs (2.9%), but primarily due to a \$24.0 million decrease in the value of the crab harvested in the program.<sup>10</sup> The last time the fee was assessed at the maximum of 3% was in the 2007/08 season.

## **2.8 Count and Effects on Small Entities**

The Regulatory Flexibility Act (RFA) was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. Section 603 of the RFA requires that an initial regulatory flexibility analysis (IRFA) be prepared to identify if a proposed action will result in a disproportionate and/ or

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<sup>9</sup> For more information about how the fee is calculated, the breakdown of expenditures, or the fee overtime, see: [https://alaskafisheries.noaa.gov/sites/default/files/crabfleetreport\\_fees2016\\_2017.pdf](https://alaskafisheries.noaa.gov/sites/default/files/crabfleetreport_fees2016_2017.pdf)

<sup>10</sup> 83 FR 34119

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. Thus, when an agency publishes a proposed rule, it must either (1) “certify” that the action will not have a significant economic effect on a substantial number of small entities, and support such a certification with a “factual basis,” demonstrating this outcome, or (2) if such a certification is not appropriate, prepare and make available for public review an IRFA that describes, among other requirements, the potential adverse economic impacts of the proposed rule on directly regulated small entities and the steps the agency has taken to minimize those impacts.

As of January 2017, NMFS Alaska Region will prepare the IRFA, if necessary, in the classification section of the proposed rule for an action. This section provides information that NMFS will use to prepare the IRFA for this action, namely a description and estimate of the number of small, directly regulated entities to which the proposed action will apply and the expected impacts.

The proposed action would remove Federal regulation that prohibits continuing to fish in a BSAI CR Program fishery once off-loading has commenced and until all CR Program crab are landed. One option under consideration would require that any tank started for offload must be fully offloaded, if a partial offload occurred. A discussion of the potential impacts of this Alternative and Option can be found in Section 2.7.

#### ***Identification of Directly Regulated Entities***

Entities that might be directly regulated by this action includes those that commercially harvest BSAI crab in the CR Program, including CDQ crab. These are the participants currently regulated by the prohibition at §680.7(b)(3). Although potentially impacted, regulatory changes from the proposed action alternative would not directly include processors, PQS holders, IPQ holders, or communities.

#### ***Count of Small, Directly Regulated Entities***

Under the RFA, businesses that are classified as primarily engaged in commercial fishing are considered small entities if they have combined annual gross receipts not in excess of \$11.0 million for all affiliated operations worldwide, regardless of the type of fishing operation (81 FR 4469; January 26, 2016). If a vessel has a known affiliation with other vessels – through a business ownership or through a cooperative – these thresholds are measured against the small entity threshold based on the total gross revenues of all affiliated vessels.

In 2017, there were 72 vessels participating in the CR Program fisheries (including harvesting CDQ crab). All of these vessels harvesting in 2017 were part of cooperatives whose gross revenues exceeded \$11.0 million; thus, due to their affiliations all harvesters are considered large entities for purposes of RFA. In a few years in the recent past a small amount of QS has been harvested outside of the cooperatives. If unaffiliated with a cooperative, these entities may be considered small under the RFA definition.

#### ***Impacts to Small, Directly Regulated Entities***

The only regulatory change from the proposed action alternative would to remove a prohibition from the directly regulated entities allowing for additional operation flexibility, should these entities choose to take advantage of it. Therefore, no directly regulated entities are expected to be adversely impacted by the proposed action. This action may be a candidate for certification (as described above) because the action is not expected to have a significant economic effect on *any* small entities, let alone on a significant number of small entities.

## 2.9 Summation of the Alternatives with Respect to Net Benefit to the Nation

The Council's PPA is Alternative 2 – remove the Federal regulatory prohibition on fishing CR Program crab in between partial offloads of crab. This PPA would be expected to produce very minimal changes in net benefits to the Nation, particularly under the expectation that this flexibility would be rarely used.

To emphasize the scope of potential change in net benefits, it is important to understand that the vast majority of fixed and variable costs associated with the production of CR Program crab (i.e., harvesting and processing operational costs) are not expected to change under the PPA. The marginal change from the proposed action is not expected to be significant enough to influence overall participation in the fishery. Moreover, generally Alaskan king and snow crab (which includes both BSS and BST in the market) are price-takers on a global market (AFSC 2016). In other words, international crab prices have a strong influence on Alaska crab prices regardless of whether the product is exported or retained domestically. Thus, the marginal change proposed in the action is unlikely to influence the overall price consumers pay for crab.

However, in the circumstances where this flexibility is used, it may increase the efficiency of operations, lowering the costs for harvesters and potentially allowing for quicker harvesting. For instance, if a harvester is unable to continue offloading in St. Paul due to strong winds, perhaps this flexibility will allow the harvester the ability to haul more pots in the meantime rather than suffering the opportunity cost of their time associated with standing-down. Additionally, if the action helps to facilitate more live crab markets this could lead to higher value fisheries, as live crab may generate a premium price. If the action allows some situations in which additional fishing flexibility allows operators to make a safer decision on the water, the increased safety at sea would be considered a social benefit as well.

While the proposed action will not likely influence the TAC for CR Program fisheries or how caught or retained crab are calculated, if the option was used more often than predicted and this led to high rates of deadloss, the PPA may change how much CR Program crab is available for consumption. This could result in forgone revenue for harvesters and processor; decreasing the value extracted from these fisheries. As stated in the analysis, harvesters are expected to consider this flexibility with this financial risk in mind and act in a rational, profit-maximizing way.

The action may be minimally disruptive to state management and accounting protocol, again, dependent on the level of partial offloads that occur. Costs associated with management and implementation of this action would be recovered under the pre-established CR cost recovery provisions and directed to the CR participants. Therefore, these resources would not necessarily be reallocated away from other fisheries. If the CR Program participants are willing to pay for any additional marginal costs associated with management (as has been suggested through public testimony), this would imply the flexibility would create a positive net benefit despite potential minor implementation costs.

## 3 Magnuson-Stevens Act and FMP Considerations

### 3.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Act, and a brief discussion of how each alternative is consistent with the National Standards, where applicable. In recommending a preferred alternative, the Council must consider 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.*

Nothing in the proposed action alternative (Alternative 2) would undermine the current management system designed to prevent overfishing. While the TACs for the CR Program fisheries have typically been fully harvested (see Section 2.6.2), the Council's PPA may allow scenarios where these TACs may be harvested more efficiently.

**National Standard 2** — *Conservation and management measures shall be based upon the best scientific information available.*

While the analysis highlights areas of uncertainty – such as how often this flexibility may be used in future conditions (Section 2.7), the expectation of impacts and net benefits presented in the analysis are based on the best scientific information that is available. Data on CR Program crab stocks and fishing practices is augmented with qualitative information on the current management of the fisheries and fishing behavior to ground truth these expectations of effects.

**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.*

The Council's PPA continues to be consistent with National Standard 3, as it does not suggest a change to the management of individual stocks as a unit or interrelated stocks as a unit or in close coordination.

**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 Council's PPA would treat all participants the same, regardless of their state of residence. The proposed change would be implemented without discrimination among those participating in the CR Program fisheries. The PPA makes no change in the distribution of fishing or processing privileges among holders. The action will not change this structure of the CR Program and it is not expected to contribute to an entity acquiring an excess share of privileges.

**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.*

Although CR Program TACs are generally fully harvested under the status quo (see Section 2.6.2), the prohibition against continuing a fishing trip after making a partial delivery can sometimes result in economic inefficiency for operators (see Section 2.7.1).

The PPA is not expected to adversely impact the resource and the Council believes that the PPA provides additional fishing flexibility that could increase the efficiency of an operation based on the harvester's

discretion. Conservation and management standards that are in place under the status quo will remain. This includes accounting for crab deadloss. If deadloss increases slightly under the proposed action that deadloss should be accounted for and deducted from the harvesters IFQ, thus it is not expected to present a conservation concern (see Section 2.7.2.2).

Moreover, a number of example scenarios have been noted in which operational efficiency could have been improved under the proposed action. For instance, it may allow a vessel to “top off” on crab or haul empty gear when traveling from the north region to the Aleutian Islands and some crab has already been landed in the north region. It may allow a harvester to continue fishing while standing down from an offload due to wind or weather. It may allow for more financially achievable access to live markets in the event that the RCR cannot accommodate a full load, and it may allow flexibility to retrieve gear in the northern region if the sea ice is progressing southward and a vessel is in middle of offloading or too heavy to also retrieve their gear.

The analysis highlights that the PPA does not make changes to the allocation of the resource among harvesters.

**National Standard 6** — *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

The Council’s PPA would not be expected to affect changes in the availability of BSAI crab resource each year. Any such changes would be addressed through the annual allocation process, which is not affected by the alternatives in the proposed action.

**National Standard 7** — *Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.*

The Council’s PPA is in response to industry requests to minimize regulatory burden. It may allow for increased operational efficiency in specific circumstances based on the harvester’s discretion.

**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.*

As described in Section 2.7.2, the Council’s PPA is not expected to substantially impact communities. The proposed change is not large enough in scope or magnitude to be expected to influence who harvests or processes BSAI crab, and it is not expected to influence the market for harvester QS or PQS. Thus, communities associated with captains, crew, vessels owners, QS/ PQS holders are not expected to be impacted. As catch limits will continue to constrain fishing activity and the footprint of the fishery is not expected to change, this action will not impact subsistence harvest for BSAI crab.<sup>11</sup> Given the regulatory provisions in the CR Program that link IFQ with communities (i.e. through share-matching of A class IFQ and PQS and regionalization of A class IFQ), it is not expected that this action will lead to a large shift in the distribution of CR Program landings.

Factors that *could* influence the benefits that accrue to communities include: 1) any redistribution in the landings of particularly B and C class IFQ, which do not require share matching or have regional designations and were intended to have flexible delivery locations (Section 2.7.2.1), and could influence

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<sup>11</sup> Subsistence crab fisheries exist in the BSAI areas for residents of the Bering Sea Area and the Alaska Peninsula-Aleutian Islands Area:  
[https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2019\\_2020\\_subsistence\\_pu\\_regs.pdf](https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2019_2020_subsistence_pu_regs.pdf)  
[https://www.doi.gov/sites/doi.gov/files/migrated/subsistence/regulation/fish\\_shell/upload/Shellfish-2.pdf](https://www.doi.gov/sites/doi.gov/files/migrated/subsistence/regulation/fish_shell/upload/Shellfish-2.pdf)



raw fish taxes collected and processor productivity 2) any increase in crab deadloss, which could represent foregone revenue for the processors as well as the harvesters, and 3) potentially more financially achievable access to live markets in the event that the RCR cannot accommodate a full load. The ability to foster a live market in community that otherwise would not have the operational capacity to receive crab deliveries could generate positive economic impacts for that community. If crab were sorted for quality and size to the live market, the processor and community receiving the remaining crab may be impacted negatively. Based on the limited reliance on the proposed flexibility (as described in Section 2.7), any of these potential impacts are also expected to be limited.

**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.*

This action is not expected to have any influence on bycatch in the CR Program fisheries because the PPA is not expected to influence the footprint of the fishery, the gear type that is used, the participants harvesting or processing crab, or the handling procedures by crew on vessels harvesting.

In addition, under the status quo, while discouraged, there is no prohibition against highgrading legal male crab at the rail. The legal discards are accounted for by observer data from pot samples and estimated CPUE (see Section 2.6.2) with an assumed discard mortality rate. If there were concerns about an increase in highgrading legal-sized male crab due the proposed change (or any other influences in the fishery), as demonstrated by observer and CPUE data, then ADF&G could lower the TAC to account for the increased legal male mortality. The risk of a lowered TAC due to increased legal discards puts pressure on the harvesters to minimize these discards.

**National Standard 10** — *Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.*

Section 2.7.3 describes the expected impacts on safety at sea that may result from the Council's PPA. A number of stakeholders have indicated their belief that the proposed action could increase the operator's ability to promote safe decision-making. As the proposed action allows increase operational flexibility to *go fishing*, the analysts are resistant to state the action could lead to decisions that are *purely* in regard to safety; however, the proposed increased flexibility *may* lead to safer decision-making in combination with operational objectives (e.g. safely retrieving gear before a storm). As always, increased flexibility should be paired with rational judgement about risks.

### **3.2 Council's Ecosystem Vision Statement**

In February 2014, the Council adopted the following policy:

#### **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 has been consistent with its ecosystem approach policy. The Council's PPA of removing the prohibition on fishing crab in between partial offloads is not expected to have environmental impacts on the crab species directly regulated through this action, nor is it expected to have environmental impacts on any other ecosystem component other than the human environment. BSAI crab stocks will continue to be assessed through annual stock assessments, with a designation of an Overfishing Limit and an Acceptable Biological Catch set to prevent overfishing from occurring. The State of Alaska will continue to determine an appropriate TAC for these fisheries set lower than these levels using its harvest management strategy. This action is not expected to change the fleet's ability to prosecute the TAC (which is generally near 100 percent), the footprint of the fishery, the gear type that is used, the participants harvesting or processing crab. Thus, this action is also not expected to generate additional spillover impacts for any subsistence or recreational harvest of crab or non-target species, nor is it expected to change the commercial crab fisheries' impacts on seabirds, marine mammals, biodiversity, or benthic habitat given the limited changes expected from the Council's PPA.

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