

FINAL

Regulatory Impact Review
For
Proposed Amendment 103 Fishery Management Plan and Regulatory
Amendment to

Allow the Reapportionment of Chinook Salmon
PSC between the Pollock and Non-Pollock Gulf of
Alaska Trawl Fisheries

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

Responsible Official: James Balsiger, Administrator
Alaska Regional Office, National Marine Fisheries Service

For further information contact: Sam Cunningham, North Pacific Fishery Management Council
605 West 4th Ave, Suite 306, Anchorage, AK 99501
(907) 271-2809

Abstract: This Regulatory Impact Review analyzes proposed management measures that would allow inseason reapportionment of the Chinook salmon prohibited species catch (PSC) limits from one particular sector of the Gulf of Alaska (GOA) groundfish trawl fishery to another. This action could provide greater flexibility to reapportion the overall GOA trawl Chinook salmon PSC limit during years of high or unusual Chinook salmon PSC without revisiting the limits that are currently set in regulation. For example, Chinook salmon could be made available to the non-pollock catcher vessel sector after NMFS has determined that the pollock trawl fishery's PSC limit is greater than the amount projected to be necessary to harvest the pollock total allowable catch. In the same manner, this action would allow the inseason reapportionment of Chinook salmon PSC from the non-pollock to the pollock sector, when excess Chinook salmon PSC is available. Reapportioning Chinook salmon PSC could benefit GOA trawl communities, vessel operators, crew members, processors, and support industries that are dependent on those fisheries, without modifying the overall PSC limits that were established to protect the Chinook resource. This analysis also considers whether the action could increase the total amount of Chinook salmon PSC taken across all sectors in a given year. No alternative increases the total GOA trawl PSC limit. Because that limit is not changed, reinitiation of the 2007 supplemental biological opinion on ESA-listed salmon is not required.

List of Acronyms and Abbreviations

'	feet
ABC	acceptable biological catch
ADP	annual deployment plan
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea and Aleutian Islands
CAS	Catch Accounting System
CFR	Code of Federal Regulations
CMCP	catch monitoring and control plan
Council	North Pacific Fishery Management Council
CP	catcher/processor
CQ	cooperative quota
CV	catcher vessel
E.O.	Executive Order
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
ESA	Endangered Species Act
FMP	fishery management plan
FR	<i>Federal Register</i>

FRFA	Final Regulatory Flexibility Analysis
ft.	foot or feet
GOA	Gulf of Alaska
IRFA	Initial Regulatory Flexibility Analysis
LAPP	limited access privilege program
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
mt	metric ton
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
NOAA	National Oceanographic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
Observer Program	North Pacific Observer Program
PSC	prohibited species catch
RIR	Regulatory Impact Review
Secretary	Secretary of Commerce
TAC	total allowable catch
U.S.	United States

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Executive Summary

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 (the RIR). The RIR (Section 3) examines potential social and economic impacts on stakeholders in the GOA trawl fisheries and stakeholders in directed Chinook salmon fisheries.

The proposed action is a minor change to a previously analyzed and approved actions to set Chinook salmon prohibited species catch (PSC) limits in the Gulf of Alaska (GOA) groundfish trawl fisheries. The proposed changes to regulations would have no effect, individually or cumulatively, on the human environment (as defined in NAO 216-6) in any way beyond what was examined in the Environmental Assessments (EAs) prepared for the analyses for Amendments 93 and 97 to the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA Groundfish FMP). Further, the potential effects of this action are only economic in nature.

Purpose and Need

The North Pacific Fishery Management Council (Council) defined the following purpose and need statement at its December 2015 meeting.

Regulations establish a Chinook salmon prohibited species catch (PSC) limits of 32,500 Chinook in the Central and Western Gulf of Alaska (GOA) trawl fisheries. Chinook salmon PSC limits are managed under two separate programs; one that apportions 25,000 Chinook to the catcher vessels in the pollock trawl fishery (Amendment 93 to the GOA FMP), and another that apportions 7,500 Chinook to three sectors in the non-pollock trawl fisheries: the catcher/processor (3,600), Rockfish Program catcher vessel (1,200), and the non-Rockfish Program catcher vessel (2,700) sectors (Amendment 97 to the GOA FMP). Closures could occur under the existing Chinook salmon PSC limits.

The 2,700 Chinook salmon PSC limit on the non-pollock/non-rockfish catcher vessel sector has resulted in a closure in that fishery. Currently, there is no ability for managers to reapportion unused Chinook salmon PSC between the pollock or non-pollock fisheries. Fishery closures could be avoided, or limited, by providing NMFS the authority to use inseason management to reapportion a limited amount of unused Chinook salmon PSC between the GOA pollock and non-pollock fisheries. This would provide increased management flexibility without exceeding the overall 32,500 Chinook salmon PSC limit or negating the current caps under Amendments 93 and 97, increase the likelihood that groundfish resources are more fully harvested, and minimize the adverse socioeconomic impacts of the fishery closures on harvesters, processors, and communities.

Alternatives

The Council established these alternatives and options for analysis at its October 2015 meeting, and selected a preferred alternative in December 2015.

Alternative 1. No action alternative (status quo)

Alternative 2. Allow NMFS to reapportion unused Chinook salmon PSC between the GOA pollock and non-pollock sectors based on criteria established for inseason reapportionments. **(Council’s preferred alternative)**

Option 1. Only allow reapportionments between the GOA pollock and the non-Rockfish Program catcher vessel sectors (no reapportionment to Rockfish Program catcher vessels).

Option 2. Only allow reapportionments that do not exceed (Suboptions: 10%, 20%, or 30%) of any initial apportionment of a Chinook salmon PSC limit during a calendar year.

Option 3. Prohibit the reapportionment of Chinook salmon PSC from catcher vessel sectors to the non-pollock catcher/processor sector. **(Council’s preferred alternative)**

Option 4. To increase flexibility and options for NMFS Alaska region to manage the different catcher vessel non-pollock Chinook salmon PSC caps, revise the Rockfish Program Chinook salmon PSC reapportionment provision to read as follows:

“If, on October 1 of each year, the Regional Administrator determines that more than 150 Chinook salmon are available in the Rockfish Program catcher vessel sector Chinook salmon PSC limit, the Regional Administrator may reapportion Chinook salmon PSC available to the Rockfish Program catcher vessel sector except for 150 Chinook salmon to the non-Rockfish Program catcher vessel sector Chinook salmon PSC limit.”

(Council’s preferred alternative)

Option 5. Only allow a sector to receive a reapportionment that does not exceed (Suboptions: 10% to 50%) of the sector’s initial (excluding any uncertainty buffer that may have been added as a result of the previous year’s performance per Amendment 97) Chinook salmon PSC limit during a calendar year. **(Council’s preferred alternative; selects 50% for the suboption)**

Environmental Assessment

This action would be a minor change to previously analyzed and approved actions, Amendments 93 and 97, which establish Chinook salmon PSC limits for the various GOA groundfish trawl fisheries. This action would provide flexibility in using the Chinook salmon PSC limits but it does not increase the total PSC limit of 32,500 Chinook salmon in the GOA groundfish trawl fisheries. In the EAs for Amendments 93 and 97, we examined the impacts of the Chinook salmon PSC limits on Chinook salmon and other marine resources, including ESA-listed marine mammals. This action does not change the PSC limits or the conclusions about the impacts of those limits. The EAs for Amendments 93 and 97 demonstrate that the Chinook salmon PSC limits do not have the potential for significant impacts on the quality of the human environment. This action would not affect the human environment beyond what was examined in the EAs

for Amendments 93 and 97.¹ No new significant information exists to change these conclusions on the impacts. As a result, this action qualifies for a Categorical Exclusion from further review under the National Environmental Policy Act (NEPA) such that the preparation of an EA is not required.

Regulatory Impact Review

This proposed action will directly regulate the approximately 69 catcher vessels (CVs) and 4 catcher/processors (CPs) that use trawl gear to harvest groundfish from the Federal and parallel fisheries in the GOA. The purpose of the proposed action is to provide the NMFS Alaska Regional Administrator with the authority to reapportion Chinook salmon PSC limits that were established under Amendment 93 (Western and Central GOA inshore pollock fishery Chinook salmon PSC apportionments) and Amendment 97 (CV and CP Chinook salmon apportionments in the GOA non-pollock fisheries) to the GOA Groundfish Fishery Management Plan. This action would not change the overall Chinook salmon PSC limit of 32,500 Chinook salmon, established for the Western and Central management areas of the GOA.

The authority to reapportion the existing Chinook salmon trawl PSC limits is expected to provide the Regional Administrator, via NMFS Inseason Management staff, greater flexibility to address trawl groundfish closures that result from reaching a Chinook salmon PSC limit. Currently the Regional Administrator only has the authority to reapportion Chinook salmon PSC from the Rockfish Program CVs to the non-Rockfish Program CV sector on October 1 and November 15 of each year. On May 3, 2015, a variety of factors resulted in the non-Rockfish Program CV sector reaching its Chinook salmon PSC limit. All groundfish fisheries for the non-Rockfish Program CV sector were then closed for the remainder of 2015. The Council requested that NMFS implement an Emergency Rule to provide an additional 1,600 Chinook salmon PSC allowance because the early closure of the non-Rockfish Program CV sector's groundfish fisheries would have caused significant adverse economic effects on harvesters, processors, and the community of Kodiak, Alaska. The Emergency Rule became effective August 10, 2015. Because the potential for closures in the non-Rockfish Program CV sector are anticipated in the future, the use of an Emergency Rule to increase the amount of PSC available to that sector will not likely be an option.

The Emergency Rule estimated that the early trawl groundfish closure in the non-Rockfish Program CV sector would have resulted in lost gross revenues of approximately \$4.6 million in ex-vessel value and \$11.3 million in first wholesale value. Harvesters and crew members that fish on trawl vessels operating the Central GOA, Kodiak shoreside processors, and the community of Kodiak would have been disproportionately affected by this closure, because GOA groundfish harvested by the non-Rockfish Program CV sector after May are almost exclusively delivered to shoreside processors operating in Kodiak.

It is anticipated that the fleet will learn from conditions that existed during the early 2015 fishing year that resulted in the Chinook salmon PSC limit being taken. These conditions include the magnitude of Chinook salmon removals by the sector in 2015, as compared to the sector's average Chinook salmon PSC, the impact of the restructured North Pacific Observer Program (Observer Program) on estimated Chinook

¹ The final rule for GOA Groundfish FMP Amendment 93 was published in the *Federal Register* on July 20, 2012 (77 FR 42629). The final rule for GOA Groundfish FMP Amendment 97 was published in the *Federal Register* on December 2, 2014 (79 FR 71350). Amended regulations were implemented in 2012 and 2015, respectively. The EAs prepared for these actions are available on the NMFS Alaska Region website at <http://alaskafisheries.noaa.gov/sustainablefisheries/amds/>.

salmon PSC levels, and the fleet's emphasis on implementing measures to avoid PSC to the extent practicable.

In addition, this action will not create conservation issues with regard to Chinook salmon. The Council and NMFS cannot exceed the take of 40,000 Chinook salmon without re-initiating its ESA consultation on the GOA trawl groundfish fisheries. The hard cap PSC limits established under GOA Groundfish FMP Amendments 93 and 97 ensure that the total amount of PSC cannot exceed 32,500 Chinook salmon per year.

A summary of the alternatives, options, and the major impacts of those program elements are presented in Table ES-1. The information presented assumes that the magnitude of forgone revenue could again approach the amount estimated in the Emergency Rule, but that the members of the fleet may adjust their behavior to reduce the likelihood of closures of this magnitude on an annual basis. The ability to reapportion Chinook salmon allowances between sectors will also be beneficial to stakeholders by providing the Regional Administrator with the flexibility to address reapportionment needs inseason. The ability to reapportion Chinook salmon PSC limits should not negatively impact other GOA trawl groundfish sectors, because Chinook salmon will only be reapportioned when the Regional Administrator determines that a sector is projected not to need those fish. The Regional Administrator will also have the authority to reapportion Chinook salmon PSC back to the sector from which it was reapportioned, later in the year.

The Council's preferred alternative is Alternative 2 (the action alternative). The Council selected Options 3, 4, and 5 that focus on providing flexibility and more stable harvest opportunities to the trawl sectors that are most likely to experience closures under the existing Chinook salmon PSC limits – namely, the non-pollock CV sectors. In so doing, the Council also selected an option that limits the amount of reapportioned Chinook PSC that any eligible sector could receive in a given year, thus preserving the intent and the PSC minimization incentives of Amendments 93 and 97. The Council stated that it was seeking a balance between providing stability for the trawl sector, including its non-fishing stakeholders, and limiting the impacts of trawl fishing on the salmon resource, as well as other species, and U.S. stakeholders that depend on them.

Comparison of Alternatives for Decision-making

Table ES-1 Summary of alternatives and major impacts

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
Alternative 1 (no action)	Chinook salmon may only be reapportioned from the Rockfish Program CV sector to the non-Rockfish Program CV sector; those reapportionments may only occur on October 1 and November 15.	The non-Rockfish Program CV sector will remain most vulnerable to early closures. It is not anticipated that NMFS will have the option of using an Emergency Rule to reopen the fishery by increasing its Chinook salmon limit.
Alternative 2 (Preferred Alternative)	Increase NMFS's flexibility to reapportion Chinook salmon PSC to and from the pollock and non-pollock fisheries in the GOA. The Regional Administrator would determine the appropriate amount to be reapportioned, and the timing of any reapportionment.	<ul style="list-style-type: none"> • In most recent years, the Inshore pollock sector would have had sufficient Chinook salmon PSC to keep the non-pollock sector(s) open in the case of a closure similar to the one experienced in 2015, had reapportionments been permitted. • Residual Chinook salmon PSC is less likely to be available in the non-pollock CV and CP sectors. Data from recent years show that both sectors are likely to approach their limit during years of high Chinook salmon PSC. • Providing NMFS the authority to reapportion Chinook salmon PSC may increase the total number of Chinook salmon taken in the groundfish trawl fisheries, relative to the status quo. Based on limited information, less than 20% of those fish originate from Alaska river systems. The impact on directed Alaska salmon fisheries is expected to be small. Greater impacts would be realized on the West Coast of the United States and Canada. These impacts, while important to the various user groups and the stocks, are expected to be within limits defined in the 2007 supplemental biological opinion. The total salmon PSC will remain within the total PSC limit of 32,500 fish. The impacts of the PSC limits on Chinook salmon are analyzed in the EAs prepared for Amendments 93 and 97. • Allowing reapportionments of Chinook salmon PSC will allow GOA trawl sectors to better achieve TAC, benefiting stakeholders who rely on GOA trawl-caught groundfish. Any increase in PSC taken under the overall limit will mean those fish are unavailable

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
		<p>to other users including subsistence, personal use, and in directed fisheries.</p> <ul style="list-style-type: none"> • Will slightly increase the workload on NMFS Inseason management staff to calculate and implement reapportionments. In some years, it may be necessary to make several small reapportionments between sectors.
Alternative 2: Option 1	Would not allow Chinook salmon to be reapportioned from the pollock and non-Rockfish Program CV sectors to the Rockfish Program CV sector.	<ul style="list-style-type: none"> • The Rockfish Program CVs operate under a LAPP that enables cooperatives to better manage their PSC allowance through information sharing and a slower paced fishery. Based on the time series of data available for that program, Rockfish Program CVs appear less likely to reach their PSC limit than the GOA limited access trawl sectors.
Alternative 2: Option 2	NMFS's reapportionment authority would be limited to no more than 10%, 20%, 30%, 40% or 50% of any sector's initial Chinook PSC apportionment.	<ul style="list-style-type: none"> • A lower percent compared with a higher percent will reduce NMFS's flexibility to reapportion Chinook salmon. This may be most constraining in sectors that have a relatively small annual apportionment. • The Council could consider whether it is appropriate to select different percentage limits for different fisheries. • PSC limits defined for an FMP area in the pollock fishery would lose that designation when reapportioned to the non-pollock sectors.
Alternative 2: Option 3 (Preferred Alternative)	NMFS's reapportionment authority would be limited by prohibiting the reapportionment of Chinook salmon PSC to the non-pollock CP sector.	In years when the non-pollock CP sector's Chinook salmon PSC limit of 3,600 fish is constraining, NMFS would not have the authority to reapportion additional Chinook salmon to that sector. This would most likely impact CPs that remain in the GOA and fish flatfish and rockfish after September.

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
Alternative 2: Option 4 (Preferred Alternative)	October 1 rollover of Chinook salmon PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector would be made at the discretion of the NMFS Regional Administrator, and not prescribed by regulation.	The Rockfish Program CVs operate under a LAPP that enables cooperatives to better manage their PSC usage through information sharing and a slower paced fishery. Based on the time series of data available for that program, Rockfish Program CVs appear less likely to reach their PSC limit than the GOA limited access trawl sectors. NMFS would be better able to respond to increased PSC demand in either the Rockfish Program CV sector or the non-Rockfish Program CV sector, and would be able to make decisions about reapportionment from the Rockfish Program CV sector based on the best available information about remaining effort, TAC, and anticipated PSC rates in that fishery. If PSC demand in the Rockfish Program CV sector is anticipated to be low, NMFS might be able to provide the non-Rockfish Program CV sector with a reapportionment prior to October 1.
Alternative 2: Option 5 (Preferred Alternative)	Limit the size of the reapportionment that any eligible sector could receive to 10% – 50% of that sector’s initial annual Chinook PSC limit.	No sector would fish under an effective PSC limit that greatly exceeds the limit that was set for it under Amendments 93 or 97. Non-pollock sectors would not be able to view the GOA pollock fishery as a ready source of additional Chinook salmon PSC that could cover any PSC overage in years of low PSC levels in the pollock fishery.

Management and Enforcement Considerations

Subdividing PSC limits and apportioning smaller amounts to a small subset of participants can sometimes increase the likelihood of a fishery closure. Moreover, while one sector’s PSC limit is reached, another’s might not be fully used. In some cases, NMFS inseason managers are able to provide economic benefits by reapportioning residual PSC to different user groups toward the end of each fishing year. However, existing Federal regulations do not include provisions for reallocating GOA Chinook salmon PSC among the CP and CV trawl gear sectors.

In the GOA, the trawl CP sector may use its Chinook salmon PSC limit for any of its target fisheries. The CP sector has a seasonal limit prior to June 1. In Amendment 97, the Council adopted that seasonal limit in order to reserve at least some Chinook salmon PSC allowance to support the CPs’ Rockfish Program fisheries. The CP PSC limit for the period prior to June 1 is not a seasonal allocation, meaning PSC that is not used during that period is still available to the sector after June 1.

By contrast, the trawl CV sector has four separate Chinook salmon PSC limits: (1) Western GOA pollock directed fishery, (2) Central GOA pollock directed fishery, (3) Rockfish Program CV sector, and (4) non-Rockfish Program CV sector. The only reapportionment currently available for the trawl CV sector is from the Rockfish Program to the non-Rockfish Program CV sector. Allowing reapportionments to and from all

trawl CV sectors and from the trawl CP sector to the trawl CV sector would provide management with more flexibility than is currently available, and may prevent a fishery closure or allow a closed fishery to reopen.

When reallocating groundfish TACs or reapportioning PSC limits, NMFS is careful not to negatively impact the sector from which a harvest opportunity was reapportioned. In some cases, the decision is easy because there is little to no effort remaining in the sector that is the source of the reapportionment. In most cases, NMFS reapportions groundfish and PSC limits near the end of the year, when effort is low. NMFS goes through several steps when deciding to reallocate a PSC limit from one sector to another; the process takes up to one week to complete:

1. NMFS determines that a sector's PSC limit has been reached or is projected to be reached;
2. If sufficient PSC is not available for reapportionment from another sector, close the sector;
3. If PSC limit is available from another sector, proceed with reapportionment (Step #4);
4. Review current effort (number of vessels, rate of PSC, amount of groundfish in the sector that reached its PSC limit ["limited sector"]);
5. Project future effort in the limited sector based on both historical effort and discussions with the fleet;
6. Review current effort (number of vessels, rate of PSC, amount of groundfish TAC remaining in the sector with projected excess PSC ["reapportion sector"]);
7. Project future effort from the sector that the reapportionment of PSC is removed, based on both historical effort and discussions with the fleet;
8. Issue a reapportionment by writing and processing an Inseason Action.

A NMFS inseason decision to reapportion GOA Chinook salmon PSC limits may be more difficult than the currently permitted PSC limit reapportionments for the following reasons:

1. Chinook PSC has been highly variable by fisheries and year, so it is difficult to project future PSC rates based on rates in current or prior year;
2. The GOA trawl CV sector participates in various fisheries with many different rates (nine non-pelagic trawl gear target fisheries and six pelagic trawl gear target fisheries);
3. Trawl CVs vary in their dependence upon different target fisheries, and may not uniformly favor reapportionments;
4. TAC levels may increase or decrease from year to year, which can change the amount of PSC that is necessary to harvest the available TAC;
5. The GOA limited access trawl fleet may be limited in its ability to organize to avoid or limit Chinook salmon PSC after a reapportionment has occurred, thus limiting NMFS's confidence in PSC rate projections.

NMFS considers its ability to reapportion harvest opportunities and PSC limits to be an important function. The agency works closely with each sector before issuing reapportionments to understand the need for PSC during the period remaining in the year. NMFS anticipates that most reapportionments would be of small amounts, and several sequential reapportionments may be required during a season.

1 Introduction

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 (the RIR). The RIR (Section 3) examines potential social and economic impacts on stakeholders in the GOA trawl fisheries and stakeholders in directed Chinook salmon fisheries. This RIR addresses the statutory requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Presidential Executive Order 12866². An RIR is a standard document produced by the North Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) Alaska Region to provide the analytical background for decision-making.

This action would be a minor change to previously analyzed and approved actions, Amendments 93 and 97 to the GOA FMP, which establish Chinook salmon prohibited species catch (PSC) limits for the GOA groundfish trawl fisheries. This action provides flexibility in using the Chinook salmon PSC, but it does not increase the total PSC limit of 32,500 Chinook salmon in the GOA groundfish trawl fisheries. In the Environmental Assessments (EAs) for Amendments 93 and 97, the analysts examined the impacts of the Chinook salmon PSC limits on Chinook salmon and other marine resources, including ESA-listed marine mammals. This action would not change the PSC limits, nor would it change the conclusions about the impacts of those limits. The EAs for Amendments 93 and 97 demonstrate that the Chinook salmon PSC limits do not have the potential for significant impacts on the quality of the human environment. This action would not affect the human environment beyond what was examined in the EAs prepared for Amendments 93 and 97. No new significant information exists to change these conclusions on the impacts. As a result, this action qualifies for a Categorical Exclusion from further review under the National Environmental Policy Act (NEPA) and the preparation of an EA is not required.

1.1 History of this Action

This document analyzes proposed modifications to regulations established under GOA Groundfish FMP Amendment 93 (NPFMC 2012), GOA Groundfish FMP Amendment 97 (NPFMC 2014), and the Central GOA Rockfish Program.³

Amendment 93 established annual Chinook salmon prohibited species catch (PSC) limits in the directed pollock trawl fisheries of the Central and Western GOA. Because pollock is closed to directed fishing in the GOA by the offshore component, or catcher/processors (CPs), under § 679.20(a)(6)(i), these limits apply primarily to catcher vessels (CV). Inshore sector trawl vessels fishing for pollock in the Central GOA are limited to 18,316 Chinook salmon per year. Trawl vessels fishing for pollock in the Western GOA are limited to 6,684 Chinook salmon per year. When and if those PSC hard caps are met, NMFS inseason managers close directed pollock trawl fishing in the relevant management area.

² Executive Order 12866 requires the preparation of a Regulatory Impact Review (RIR) to assess the social and economic costs and benefits of available regulatory alternatives, in order to determine whether a proposed regulatory action is economically significant as defined by that order.

³ GOA Groundfish FMP Amendment 88; final rule published in the *Federal Register* on December 27, 2011 (76 FR 81248).

Magnuson-Stevens Act National Standards require the Council to balance the objectives of achieving optimum yield, minimizing bycatch, and minimizing adverse impacts to fishery dependent communities. Chinook salmon bycatch, or PSC, taken incidentally in GOA pollock trawl fisheries is a concern to stakeholders, and has historically accounted for the greatest proportion of Chinook salmon taken in GOA groundfish fisheries. Two principal objectives noted in the Amendment 93 Final Rule are:

- To reduce Chinook salmon PSC in the Central and Western GOA pollock fisheries to the minimal level practicable, consistent with National Standard 9 of the Magnuson-Stevens Act; and
- To enable pollock harvests to contribute to the achievement of optimum yield on a continuing basis, consistent with National Standard 1 of the Magnuson-Stevens Act.

Amendment 97 established annual Chinook salmon PSC limits for GOA non-pollock trawl fisheries. An aggregate annual hard cap of 7,500 Chinook salmon is apportioned among three trawl sectors: CPs (3,600 fish), CVs participating in the Central GOA Rockfish Program (1,200 fish), and CVs participating in all other directed GOA non-pollock groundfish trawl fisheries in the Western and Central GOA Regulatory Areas (2,700 fish). The latter of the three sectors is referred to throughout this document as the non-Rockfish Program CV sector. If a sector reaches its Chinook salmon PSC limit, NMFS prohibits further directed fishing for non-pollock groundfish by vessels in that sector. Note that most of the vessels that fish under the Central GOA Rockfish Program CV limit of 1,200 Chinook salmon also participate in the non-Rockfish Program CV sector (limited to 2,700 Chinook salmon). Amendment 97 provides for the reapportionment (or “rollover”) of unused Chinook salmon PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector on October 1 and November 15. Under existing regulations, all but 150 of the Chinook salmon PSC remaining in the Rockfish Program CV sector’s apportionment of 1,200 Chinook are rolled over to the non-Rockfish Program CV sector on October 1, and any that remain when the Rockfish Program closes on November 15 are similarly rolled over at that time. Currently, NMFS does not have discretion to determine the amount of the October 1 rollover based on remaining Rockfish Program effort.

Amendment 97 also includes a mechanism known as an “incentive buffer,” which can serve to reapportion Chinook salmon PSC from one year to the next based on demonstrated success in PSC avoidance. If the non-Rockfish Program CV sector uses no more than 2,340 salmon (36 percent of 6,500 Chinook salmon) in a given year, the sector will be granted access to 360 additional Chinook salmon the following year.⁴ That additional PSC allowance is relative to the sector’s base-limit of 2,700 Chinook salmon, meaning that when the incentive buffer is in effect the non-Rockfish Program CV sector will be fishing under a PSC limit of 3,060 Chinook salmon (2,700 + 360 = 3,060). If the non-Rockfish Program CV sector exceeds 2,340 Chinook salmon, the incentive buffer would not apply in the following year, meaning that the sector will be fishing under the base-limit of 2,700 Chinook salmon PSC.

During the development of Amendment 97, the Council and NMFS developed three overarching objectives:

⁴ A similar incentive target was established under Amendment 97 for the CP sector and the Rockfish Program CV sector. The Council arrived at the threshold for each of the two sectors eligible for an incentive buffer by setting an overall incentive target of taking 1,000 fewer Chinook PSC than the overall 7,500 Chinook salmon cap (6,500 fish). The non-Rockfish Program CV sector was apportioned 2,700 of the 7,500 aggregate limit (36%). That same proportion of the incentive target (36% of 1,000 Chinook salmon) equates to 360 Chinook salmon PSC. Therefore, the non-Rockfish Program CV sector’s incentive target is to take 2,340 Chinook salmon, or fewer (2,700 – 360 = 2,340). Achieving that savings would represent “out-performing” the hard cap by 36%.

- Avoid exceeding the annual Chinook salmon threshold of 40,000 Chinook salmon identified in the incidental take statement of the November 30, 2000, biological opinion (see Section 3.4.1.1);
- Minimize Chinook salmon PSC to the extent practicable, consistent with Magnuson-Stevens Act National Standard 9; and
- Increase the amount of Chinook salmon stock of origin information available to NMFS and the Council.

On May 3, 2015, all non-Rockfish Program CV sector trawl fisheries were closed for the remainder of the year as a result of the non-Rockfish Program CV sector reaching its Chinook salmon PSC limit of 2,700 fish for the Western and Central GOA areas.

In June 2015, the Council requested that NMFS implement an Emergency Rule to allocate an additional 1,600 Chinook salmon PSC to the non-Rockfish Program CV sector of the GOA groundfish trawl fishery. NMFS determined that an emergency existed because the early closure of the non-Rockfish Program CV groundfish fishery caused adverse, significant, and unforeseen impacts on harvesters, processors, and the community of Kodiak, Alaska (see Section 3.4.1.5 for additional information). Providing 1,600 additional Chinook salmon PSC was expected to allow the sector to harvest its recent average amount of groundfish during the remainder of the 2015 fishing year, while keeping the total Chinook salmon PSC well below the annual threshold for all GOA trawl fisheries. To date, that expectation has been met.⁵ The additional allocation of 1,600 Chinook salmon was determined to be consistent with the overall goals of Chinook salmon PSC management in the GOA trawl fisheries, and did not substantially increase Chinook salmon PSC relative to the limits established under Amendments 93 and 97, in aggregate. The language of the Emergency Rule noted that the action was a direct response measure intended to mitigate the estimated costs of the 2015 closure while the Council develops an FMP amendment to permanently address the ability of the GOA trawl fleet to operate within the established conservation limits. The Council recognizes that additional allocations of Chinook salmon PSC through Emergency Rule may not be an available measure in the case of any future closure of the non-Rockfish Program CV sector that is caused by the Chinook salmon PSC limit.

Should a PSC-limited GOA trawl sector face an imminent closure in the future, the action alternative analyzed in this document would provide a mechanism for NMFS inseason managers to reapportion amounts of existing Chinook salmon PSC limits to that sector if NMFS estimates that there will be a surplus. These reapportionments are designed to provide NMFS with additional flexibility to respond to unforeseen or unanticipated changes in Chinook salmon PSC levels. The intent of this action is not to encourage higher levels of Chinook salmon PSC. This action entails no guarantee that a sector will have any Chinook salmon PSC reapportioned to it. No sector would experience a reduction in the amount of Chinook salmon PSC apportioned for its use if that reapportionment would, in the judgment of NMFS inseason managers, jeopardize the sector's ability to harvest available groundfish. During years in which eligible sectors are not sufficiently under their respective PSC limits to allow a reapportionment, Chinook salmon

⁵ Both of these objectives were met. According to NMFS Inseason Management, section has taken Chinook salmon of the 1,600 that were made available in August through the Emergency Rule. The total number of Chinook salmon taken in *all* GOA trawl fisheries was 17,732 (as of December 31, 2015) and 18,967 (as of December 31, 2015), well below the cap of 32,500. The most recent Prohibited Species Report on GOA salmon is available at NMFS's catch report web page: <http://alaskafisheries.noaa.gov/sustainablefisheries/catchstats.htm>.

reapportionments would not occur. This uncertainty provides an incentive for each GOA trawl sector to stay within the initial PSC limit that is defined for it in regulation.

The Council tasked staff to begin analyzing a set of alternatives in June 2015, concurrent with its recommendation that NMFS develop an analysis to support the Emergency Rule decision. Staff produced a preliminary analysis for the October 2015 Council meeting, where it was reviewed by the Advisory Panel and the Council. At that meeting, the Council passed a motion to refine language in the purpose and need statement (for clarity), and added Options 4 and 5 to Alternative 2 (see Section 2).

The Council took final action in December 2015, recommending a preferred alternative (see Section 2).

1.2 Purpose and Need

The Council initially defined the following purpose and need statement at its June 2015 meeting. In October 2015, the Council replaced the word “allocate” (and its variations) with the word “apportion.” This change is not substantive to the intent of the action; rather, it was made as a contribution to NMFS’s efforts to be consistent in the use of those terms in regulatory text.⁶ The following text reflects minor textual amendments, made at the time of the Council’s final action (December 2015) clarifying that the intent of the preferred alternative is not to “negate” the current Chinook salmon PSC caps established under GOA Groundfish FMP Amendments 93 and 97, and that the maximum amount of Chinook salmon PSC that can be reapportioned from one sector to another is limited.

Regulations establish a Chinook salmon prohibited species catch (PSC) limits of 32,500 Chinook in the Central and Western Gulf of Alaska (GOA) trawl fisheries. Chinook salmon PSC limits are managed under two separate programs; one that apportions 25,000 Chinook to the catcher vessels in the pollock trawl fishery (Amendment 93 to the GOA FMP), and another that apportions 7,500 Chinook to three sectors in the non-pollock trawl fisheries: the catcher/processor (3,600), Rockfish Program catcher vessel (1,200), and the non-Rockfish Program catcher vessel (2,700) sectors (Amendment 97 to the GOA FMP). Closures could occur under the existing Chinook salmon PSC limits.

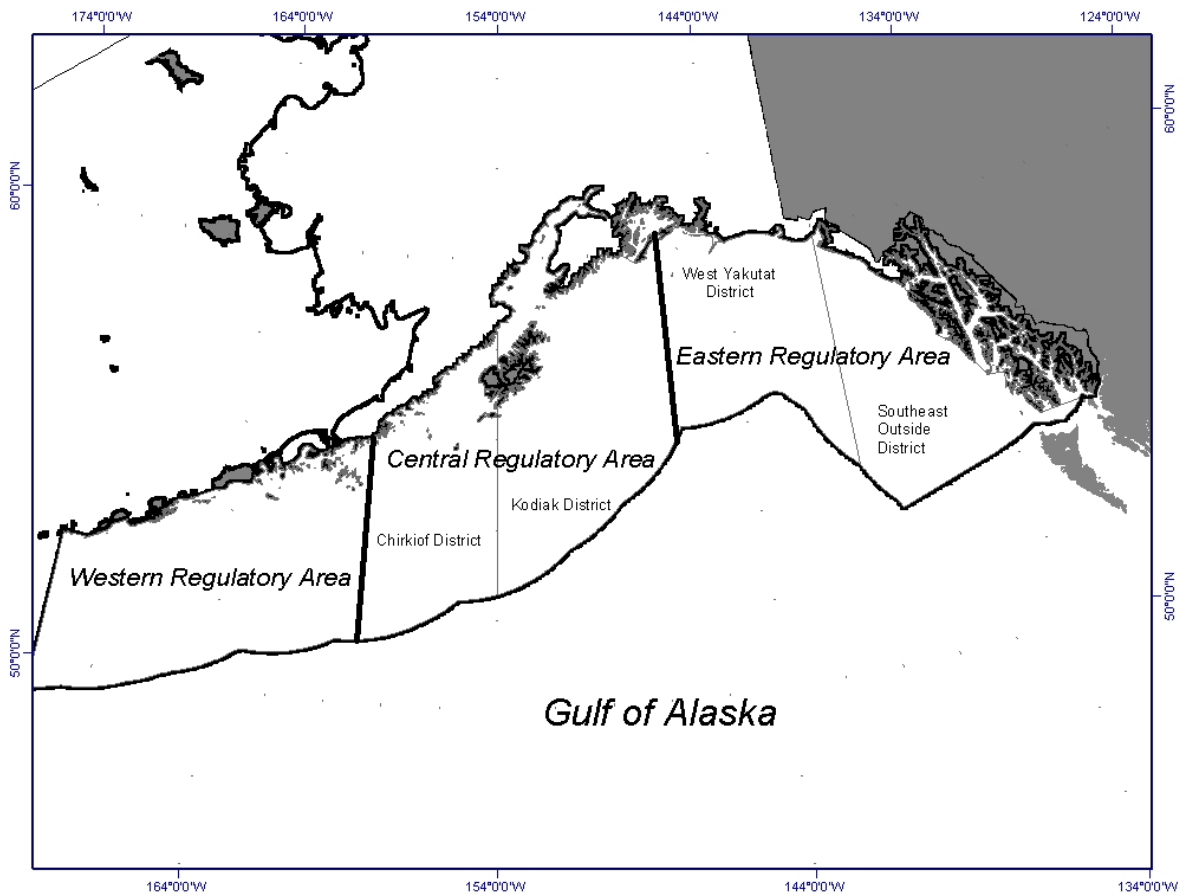
The 2,700 Chinook salmon PSC limit on the non-pollock/non-rockfish catcher vessel sector has resulted in a closure in that fishery. Currently, there is no ability for managers to reapportion unused Chinook salmon PSC between the pollock or non-pollock fisheries. Fishery closures could be avoided, or limited, by providing NMFS the authority to use inseason management to reapportion a limited amount of unused Chinook salmon PSC between the GOA pollock and non-pollock fisheries. This would provide increased management flexibility without exceeding the overall 32,500 Chinook salmon PSC limit or negating the current caps under Amendments 93 and 97, increase the likelihood that groundfish resources are more fully harvested, and minimize the adverse socioeconomic impacts of the fishery closures on harvesters, processors, and communities.

⁶ Typically, “allocations” imply some sort of harvest or PSC privilege that is made at the individual or cooperative level. By contrast, “apportionments” relate to limits that are applied at the sector or fishery/area level.

1.3 Description of Action Area

This action would affect trawl vessels operating in Federal and parallel waters of the Western and Central GOA management areas. The proposed reapportionments do not apply to the Eastern Gulf of Alaska (including the West Yakutat District) because trawl Chinook salmon PSC limits are not established for that area. Trawling is currently prohibited east of the West Yakutat district. Trawl fishing effort has historically been low within the West Yakutat District, and reported Chinook salmon PSC has not reached a level that resulted in the Council establishing a separate PSC limit for that area. The potentially affected regulatory areas are shown in Figure 1.

Figure 1 Regulatory and reporting areas in the Gulf of Alaska management area



2 Description of Alternatives

The Council established the following alternatives for analysis at its October 2015 meeting, and selected a preferred alternative at its December 2015 meeting.

Alternative 1. No action alternative (status quo)

Alternative 2. Allow NMFS to reapportion unused Chinook salmon PSC between the GOA pollock and non-pollock sectors based on criteria established for inseason reapportionments. **(Council’s preferred alternative)**

Option 1. Only allow reapportionments between the GOA pollock and the non-Rockfish Program catcher vessel sectors (no reapportionment to Rockfish Program catcher vessels).

Option 2. Only allow reapportionments that do not exceed (Suboptions: 10%, 20%, or 30%) of any initial apportionment of a Chinook salmon PSC limit during a calendar year.

Option 3. Prohibit the reapportionment of Chinook salmon PSC from catcher vessel sectors to the non-pollock catcher/processor sector. **(Council’s preferred alternative)**

Option 4. To increase flexibility and options for NMFS Alaska Region to manage the different non-pollock catcher vessel Chinook salmon PSC caps, revise the Rockfish Program Chinook salmon PSC reapportionment provision to read as follows:

“If, on October 1 of each year, the Regional Administrator determines that more than 150 Chinook salmon are available in the Rockfish Program catcher vessel sector Chinook salmon PSC limit, the Regional Administrator may reapportion Chinook salmon PSC available to the Rockfish Program catcher vessel sector, except for 150 Chinook salmon, to the non-Rockfish Program catcher vessel sector Chinook salmon PSC limit.”

(Council’s preferred alternative)

Option 5. Only allow a sector to receive a reapportionment that does not exceed (Suboptions: 10% to 50%) of the sector’s initial (excluding any uncertainty buffer that may have been added as a result of the previous year’s performance per Amendment 97) Chinook salmon PSC limit during a calendar year. **(Council’s preferred alternative; selects 50% for the suboption).**

As noted in Section 1.2, the Council replaced the word “allocate” (and its variations) with “apportion” at the October 2015 meeting. This change was made to develop consistency in the use of these terms in regulatory language. The Council added Option 4 to Alternative 2. If selected, Option 4 would direct NMFS and Council staff to amend Federal regulations and the GOA Groundfish FMP to make the October 1

rollover of unused Rockfish Program CV sector Chinook PSC less prescriptive.⁷ In other words, NMFS inseason managers would be able to assess the anticipated amount of effort remaining in the Rockfish Program before determining that a PSC rollover to the non-Rockfish Program CV sector is the most prudent course of action for meeting all management objectives. The operative phrase in Option 4 is, “the Regional Administrator **may** reapportion...” (emphasis added). The Council also added Option 5, which would cap the amount of reapportioned Chinook salmon PSC that a particular sector could receive in a single year.

The Council made several clarifications on the options to Alternative 2 at the October 2015 Council meeting:

Option 1. This option should be read to mean that reapportionments of Chinook salmon PSC may flow to, or from, *only* the GOA pollock and non-pollock/non-Rockfish Program CV sectors. Neither the Rockfish Program CV sector nor the GOA non-pollock CP sector may provide or receive any Chinook salmon PSC reapportionment. The Council also clarified that any version of the action alternative that allows reapportionments to or from the GOA pollock sector would allow for reapportionments to flow between the Western GOA and Central GOA area pollock fishery Chinook PSC limits, which are defined separately.

Option 2. This option limits the amount of Chinook salmon PSC – as a percentage of an eligible sector’s initial annual apportionment – that can be reapportioned *from* that sector *to* another during a calendar year.

In December 2015, at the time of final action, the Council modified the language in Alternative 2 (preferred alternative) by striking the statement that “Existing reapportionment procedures from the Rockfish Program catch vessel to the non-Rockfish Program catch vessel sector would not be modified.” That language was noted to be inconsistent with Option 4, which is part of the Council’s preferred alternative.

2.1 Alternative 1 (No Action)

Alternative 1, the “no action” alternative, would maintain the current Chinook salmon PSC limits for vessels using trawl gear in the Western and Central GOA (Table 1). Those limits are apportioned among three sectors of the GOA non-pollock trawl fisheries: CPs, CVs, and CVs fishing under the Central GOA Rockfish Program. The PSC limit for the directed pollock fishery is only available for use by vessels in the Inshore sector. That sector is defined as CVs delivering to shoreside processors, and CPs of less than 125 feet length overall that hold an Inshore processing endorsement on their Federal Fisheries Permit and process no more than 126 mt per week in round-weight equivalents of GOA pollock and Eastern GOA Pacific cod (combined). Few CPs have participated in the Inshore pollock sector during recent years. During years in which Inshore CPs have been active, two or fewer vessels participated in the pollock fishery; those vessels took a very small percentage of the fishery’s Chinook salmon PSC limit. Under existing regulation, any Chinook salmon taken by an Inshore CP would accrue towards the PSC limit for the appropriate area.

⁷ If Option 4 is selected, Federal regulations would be amended at § 679.21(i)(4)(i), and the GOA Groundfish FMP would be amended at Section 3.6.2.2.

Table 1 Status quo GOA trawl Chinook salmon PSC limits

			Rockfish	GOA Total
	CV	C/P	Program	
Non-pollock fisheries (Am 97)	2,700	3,600	1,200	7,500
	CG	WG		
Pollock Fishery CVs (Am 93)	18,316	6,684		25,000
Total				32,500

Source: GOA Groundfish FMP Amendments 93 and 97

The only Chinook salmon PSC rollover that is permitted under existing GOA regulations pertains to the Central GOA Rockfish Program, under Amendment 97. Each year, the Rockfish Program CV sector is apportioned 1,200 of the 7,500 non-pollock Chinook salmon PSC cap. On October 1, all but 150 of the unused Chinook salmon PSC in that sector are rolled over (reapportioned) to the non-Rockfish Program CV sector. On November 15, when the Rockfish Program CV sector closes by regulation, whatever remains of the Rockfish Program CV sector’s Chinook PSC limit is also reapportioned to the non-Rockfish Program CV sector at that time. No reapportionment to the non-Rockfish Program CV sector can be made prior to those dates, even if the sector was closed due to reaching its annual Chinook PSC cap.

At the October 1 rollover date, regulations direct NMFS inseason managers to reapportion unused Rockfish Program Chinook salmon PSC. As a result, managers do not have the ability to hold back PSC (in addition to the 150 Chinook salmon defined in regulation) in case residual effort in the Rockfish Program CV sector is expected to be high, or if there remains a large amount of unharvested Rockfish Program cooperative quota (CQ).

2.2 Alternative 2

Alternative 2, the preferred alternative, would allow the NMFS Regional Administrator, through inseason management, to determine the amount of Chinook salmon PSC that is necessary to support the directed fishery to which it was initially apportioned for the remainder of the fishing year. If NMFS determines that the Chinook salmon PSC limit for a sector exceeds the amount necessary to harvest the available TAC (given known and projected effort levels), the agency may reapportion Chinook salmon PSC from that sector to another sector that has, or is projected to have, inadequate PSC. NMFS would notify the public of such an action through the *Federal Register*.

The Council considered three options that would narrow the scope of Alternative 2. Under Option 1, Chinook salmon PSC reapportionments would only be permitted from the GOA directed pollock trawl fishery to the non-Rockfish Program CV sector, and vice versa. That option would permit reapportionment between the separate Chinook PSC limits that are set for the Western and Central GOA pollock trawl fisheries. No reapportionment could flow to or from the Central GOA Rockfish Program CV sector – except the existing Rockfish Program rollover provisions established under Amendment 97 – or the CP trawl sector. Under Option 2, the amount that could be reapportioned from one sector to another would be capped at (suboptions) 10 percent, 20 percent, or 30 percent of the amount that was initially apportioned to that sector at the beginning of the year. Multiple reapportionments could be made during the year, but the total

amount could not exceed the limit defined by the selected suboption.⁸ Under Option 3, no Chinook salmon PSC could be reapportioned to the CP sector of the GOA non-pollock trawl fishery. In other words, the CP sector would continue to operate under a hard cap of 3,600 Chinook salmon.

The Council also considered an option that would increase the flexibility of an existing reapportionment tool. Option 4 allows NMFS inseason managers to make the October 1 rollover of Rockfish Program Chinook salmon PSC – as defined in Amendment 97 and in regulation at §679.21(i)(4)(i) – at the Regional Administrator’s discretion, based on the best available information at the time. Compared to Alternative 1 (status quo) described in Section 2.1, this might prevent a situation where too much Chinook salmon PSC is moved out of the Rockfish Program CV sector, before the participants in that fishery have fully harvested the available CQ.

Option 5 would provide an additional measure to ensure that Alternative 2 does not fundamentally alter the way that a particular sector operates with regard to the initial annual PSC apportionments that were determined through Amendments 93 and 97. While it should be said that NMFS inseason managers would use professional judgment to determine whether a sector in need of additional reapportioned PSC has operated with good faith efforts to minimize Chinook salmon encounters, setting a reapportionment cap would allow the Council to know each sector’s maximum possible PSC level for any given year.

2.3 Comparison of Alternatives

Table 2 summarizes the alternatives and options under consideration, as well as their foreseeable impacts. The major difference between Alternative 2 and Alternative 1 is the amount of flexibility provided to the Regional Administrator to reapportion Chinook salmon PSC limits between the various GOA sectors to mitigate economic hardships that might occur from a closure. Greater flexibility for NMFS would likely improve fishermen’s ability to achieve TAC during a PSC-constrained year. In making any reapportionment decision, NMFS would consider the attendant cost to the Chinook salmon resource and the directed Chinook salmon fisheries off Alaska and the West Coast of the United States.

Table 2 Summary of alternatives and major impacts

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
Alternative 1 (no action)	Chinook salmon may only be reapportioned from the Rockfish Program CV sector to the non-Rockfish Program CV sector; those reapportionments may only occur on October 1 and November 15.	The non-Rockfish Program CV sector will remain most vulnerable to early closures. It is not anticipated that NMFS will have the option of using an Emergency Rule to reopen the fishery by increasing its Chinook salmon limit.
Alternative 2 (Preferred Alternative)	Increase NMFS’s flexibility to reapportion Chinook salmon PSC to and from the pollock and non-pollock fisheries in the GOA. The Regional Administrator would	<ul style="list-style-type: none"> In most recent years, the Inshore pollock sector would have had sufficient Chinook salmon PSC to keep the non-pollock sector(s) open in the case of a closure similar to the

⁸ For example, if the Council selected Option 2 and Suboption 1 (10%), no more than 1,831 Chinook salmon could be reapportioned from the Central GOA pollock trawl fishery’s Chinook salmon PSC limit (18,316 fish) to other sectors, in aggregate.

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
	<p>determine the appropriate amount to be reapportioned, and the timing of any reapportionment.</p>	<p>one experienced in 2015, had reapportionments been permitted.</p> <ul style="list-style-type: none"> • Residual Chinook salmon PSC is less likely to be available in the non-pollock CV and CP sectors. Data from recent years show that both sectors are likely to approach their limit during years of high Chinook salmon PSC. • Providing NMFS the authority to reapportion Chinook salmon PSC may increase the total number of Chinook salmon taken in the groundfish trawl fisheries, relative to the status quo. Based on limited information, less than 20% of those fish originate from Alaska river systems. The impact on directed Alaska salmon fisheries is expected to be small. Greater impacts would be realized on the West Coast of the United States and Canada. These impacts, while important to the various user groups and the stocks, are expected to be within limits defined in the 2007 supplemental biological opinion. The total salmon PSC will remain within the total PSC limit of 32,500 fish. The impacts of the PSC limits on Chinook salmon are analyzed in the EAs prepared for Amendments 93 and 97. • Allowing reapportionments of Chinook salmon PSC will allow GOA trawl sectors to better achieve TAC, benefiting stakeholders who rely on GOA trawl-caught groundfish. Any increase in PSC taken under the overall limit will mean those fish are unavailable to other users including subsistence, personal use, and in directed fisheries. • Will slightly increase the workload on NMFS Inseason management staff to calculate and implement reapportionments. In some years, it may be necessary to make several small reapportionments between sectors.
<p>Alternative 2: Option 1</p>	<p>Would not allow Chinook salmon to be reapportioned from the pollock and non-Rockfish Program CV sectors to the Rockfish Program CV sector.</p>	<ul style="list-style-type: none"> • The Rockfish Program CVs operate under a LAPP that enables cooperatives to better manage their PSC allowance through information sharing and a slower paced fishery. Based on the time series of data available for that program, Rockfish Program CVs appear less likely to reach their PSC limit than the GOA limited access trawl sectors.

Alternative/Option	Differences in Alternatives	Foreseeable Impacts
Alternative 2: Option 2	NMFS's reapportionment authority would be limited to no more than 10%, 20%, 30%, 40% or 50% of any sector's initial Chinook PSC apportionment.	<ul style="list-style-type: none"> • A lower percent compared with a higher percent will reduce NMFS's flexibility to reapportion Chinook salmon. This may be most constraining in sectors that have a relatively small annual apportionment. • The Council could consider whether it is appropriate to select different percentage limits for different fisheries. • PSC limits defined for an FMP area in the pollock fishery would lose that designation when reapportioned to the non-pollock sectors.
Alternative 2: Option 3 (Preferred Alternative)	NMFS's reapportionment authority would be limited by prohibiting the reapportionment of Chinook salmon PSC to the non-pollock CP sector.	In years when the non-pollock CP sector's Chinook salmon PSC limit of 3,600 fish is constraining, NMFS would not have the authority to reapportion additional Chinook salmon to that sector. This would most likely impact CPs that remain in the GOA and fish flatfish and rockfish after September.
Alternative 2: Option 4 (Preferred Alternative)	October 1 rollover of Chinook salmon PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector would be made at the discretion of the NMFS Regional Administrator, and not prescribed by regulation.	The Rockfish Program CVs operate under a LAPP that enables cooperatives to better manage their PSC usage through information sharing and a slower paced fishery. Based on the time series of data available for that program, Rockfish Program CVs appear less likely to reach their PSC limit than the GOA limited access trawl sectors. NMFS would be better able to respond to increased PSC demand in either the Rockfish Program CV sector or the non-Rockfish Program CV sector, and would be able to make decisions about reapportionment from the Rockfish Program CV sector based on the best available information about remaining effort, TAC, and anticipated PSC rates in that fishery. If PSC demand in the Rockfish Program CV sector is anticipated to be low, NMFS might be able to provide the non-Rockfish Program CV sector with a reapportionment prior to October 1.
Alternative 2: Option 5 (Preferred Alternative)	Limit the size of the reapportionment that any eligible sector could receive to 10% – 50% of that sector's initial annual Chinook PSC limit.	No sector would fish under an effective PSC limit that greatly exceeds the limit that was set for it under Amendments 93 or 97. Non-pollock sectors would not be able to view the GOA pollock fishery as a ready source of additional Chinook salmon PSC that could cover any PSC overage in years of low PSC levels in the pollock fishery.

3 Regulatory Impact Review

This Regulatory Impact Review (RIR) examines the benefits and costs of a proposed FMP and regulatory amendment that would give NMFS inseason managers the ability to reallocate residual amounts of previously established Chinook salmon PSC limits between sectors of the GOA trawl fleet. The alternatives under consideration are further described in Section 2.

The preparation of an RIR 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.

3.1 Statutory Authority

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

The GOA groundfish fisheries in the EEZ off Alaska are managed under the GOA Groundfish FMP. The action under consideration would amend this FMP and Federal regulations at 50 CFR 679. Actions taken to amend FMPs or implement other regulations governing these fisheries must meet the requirements of Federal law and regulations.

3.2 Purpose and Need for Action

The Council initially defined the following purpose and need statement at its June 2015 meeting. In October 2015, the Council replaced the word “allocate” (and its variations) with the word “apportion”. This change is not substantive; rather, it ensures consistency in the use of those terms in regulatory text.

Regulations establish a Chinook salmon prohibited species catch (PSC) limits of 32,500 Chinook in the Central and Western Gulf of Alaska (GOA) trawl fisheries. Chinook salmon PSC limits are managed under two separate programs; one that apportions 25,000 Chinook to the catcher vessels in the pollock trawl fishery (Amendment 93 to the GOA FMP), and another that apportions 7,500 Chinook to three sectors in the non-pollock trawl fisheries: the catcher/processor (3,600), Rockfish Program catcher vessel (1,200), and the non-Rockfish Program catcher vessel (2,700) sectors (Amendment 97 to the GOA FMP). Closures could occur under the existing Chinook salmon PSC limits.

The 2,700 Chinook salmon PSC limit on the non-pollock/non-rockfish catcher vessel sector has resulted in a closure in that fishery. Currently, there is no ability for managers to reapportion unused Chinook salmon PSC between the pollock or non-pollock fisheries. Fishery closures could be avoided, or limited, by providing NMFS the authority to use inseason management to reapportion unused Chinook salmon PSC between the GOA pollock and non-pollock fisheries. This action increases management flexibility without exceeding the overall 32,500 Chinook salmon PSC limit, increases the likelihood that groundfish resources are more fully harvested, and minimize the adverse socioeconomic impacts of the fishery closures on harvesters, processors, and communities.

3.3 Methodology for Analysis of Impacts

The evaluation of impacts in this analysis is designed to meet the requirements of E.O. 12866, which dictate that an RIR evaluate the costs and benefits of the alternatives, to include both quantifiable and qualitative considerations. Additionally, the analysis should provide information for decision makers “to maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.” The costs and benefits of this action with respect to these attributes are described in the sections that follow, comparing Alternative 1, the no action alternative, with Alternative 2, the action alternative. The analysts then provide a qualitative assessment of the net benefit to the Nation of Alternative 2 compared to Alternative 1.

This analysis was prepared using data from the NMFS catch accounting system (CAS), which is the best available data to estimate total catch in the groundfish fisheries off Alaska. Total catch estimates are generated from information provided through a variety of required industry reports of harvest and at-sea discard, and data collected through an extensive fishery observer program, the North Pacific Observer

Program (Observer Program). In 2003, NMFS changed the methodologies used to determine catch estimates from the NMFS blend database (1995 through 2002) to the CAS (2003 through present).

CAS was implemented to better meet the increasing information needs of fisheries scientists and managers. Currently, CAS relies on data derived from a mixture of production and observer reports as the basis of the total catch estimates. The 2003 modifications in catch estimation included providing more frequent data summaries at finer spatial and fleet resolution, and the increased use of observer data. Redesigned Observer Program data collections were implemented in 2008, and include the recording of sample-specific information in lieu of pooled information, increased use of systematic sampling over simple random and opportunistic sampling, and decreased reliance on observer computations. As a result of these modifications, NMFS is unable to recreate blend database estimates for total catch and retained catch after 2002. Therefore, NMFS is not able to reliably compare historical data from the blend database to the current catch accounting system. This analysis relies primarily on CAS data from 2010 through 2014, which cover the five most recent years for which complete information is available. The selected historical period for analysis includes only years that occurred after the implementation of the Rockfish Pilot Program (2007) and Amendment 80 (2008); in that respect, the analyzed years should, to the extent possible, reflect the GOA trawl fishery as it currently operates.

Data are provided through the Alaska Fisheries Information Network (AKFIN), which pulls together CAS data, Commercial Fisheries Entry Commission fish ticket data, and Commercial Operators Annual Report data to supply catch and discard records, as well as estimates of gross ex-vessel and first wholesale revenues.

3.4 Background

This section contains information on management measures and monitoring procedures that pertain to Chinook salmon PSC, as well as historical data on the amount of Chinook salmon taken in the GOA trawl sectors in recent years. Section 3.4.2 summarizes information about vessel participation in certain GOA trawl fisheries, TACs, harvest amounts, and the distribution of ex-vessel revenues over fishery, area, and month. Persons interested in further descriptive information about the GOA trawl fleet are referred to recent papers produced by Council staff that relate to the development of the GOA trawl bycatch management program⁹ and the final EA/RIR/IRFA for GOA Groundfish FMP Amendment 97.¹⁰

3.4.1 Chinook PSC

A summary of the recent GOA PSC limit actions taken under Amendment 93 and Amendment 97 is provided in Section 1.1. That summary describes the apportionments, the uncertainty buffer built into Amendment 97, and the Rockfish Program rollover provision. This section describes the history of why GOA Chinook salmon PSC limits are set where they are, how they are monitored, and how the GOA trawl fleet has performed relative to those limits. The last three subsections below describe how NMFS inseason

⁹ Particularly, Council staff recommends an October 2014 Discussion Paper (available at <http://npfmc.legistar.com/gateway.aspx?M=F&ID=40ad31b4-d26e-495f-bbbc-e5750f9347ae.pdf>) and a set of annual harvest and PSC tables produced for an October 2015 Discussion Paper and published on the Council's website (available at <http://npfmc.org/wp-content/PDFdocuments/bycatch/GOATBMcatchTables1015.xlsx>).

¹⁰ Available at <http://alaskafisheries.noaa.gov/analyses/amd97/goa97finaleairirfa.pdf>.

managers make fishery closure and reapportionment decisions, how an Emergency Rule was used to provide additional Chinook salmon PSC to a sector of the fishery in 2015, and the criteria that would need to be met for an Emergency Rule to be a management pathway in the future.

3.4.1.1 ESA Issues on GOA Chinook Salmon PSC

In recent years, the Council has amended the GOA Groundfish FMP to limit the amount of Chinook salmon PSC that can be taken in trawl fisheries. Those efforts culminated in limits for the directed pollock trawl fishery (Amendment 93), and the non-pollock trawl fisheries including the Central GOA Rockfish Program (Amendment 97). Amendment 93 set a limit of 25,000 Chinook salmon, and Amendment 97 set a limit of 7,500 Chinook salmon. NMFS has conducted ESA section 7 consultations to ensure that the GOA groundfish fisheries, as modified by Amendment 93, are not likely to adversely affect the Southern Resident killer whale population or its designated critical habitat. These determinations were reached prior to the additional limits on Chinook salmon PSC implemented under Amendment 97. NMFS determined that Amendment 97 was unlikely to change the basic conduct of the GOA trawl fisheries that were analyzed in the previous section 7 consultations. Thus, NMFS determined that the GOA groundfish fisheries as modified by Amendment 97 were not likely to affect Southern Resident killer whales in a manner not previously considered in the biological opinion.

Similarly, the action proposed here will merely increase NMFS's flexibility to reapportion Chinook salmon PSC among sectors and does not change the combined Chinook salmon PSC limit from Amendments 93 and 97 of 32,500. Therefore, it too does not affect listed species in a manner not considered in previous ESA consultations.

In January 2007, the NMFS Northwest Region completed a supplemental biological opinion to the November 30, 2000, biological opinion on the effects of the Alaska groundfish fisheries on ESA-listed salmon (NMFS 2007). An incidental take statement was included in the 2000 and 2007 biological opinions, which established a threshold of 40,000 Chinook salmon caught as PSC in the GOA groundfish fisheries. The 2000 biological opinion concluded that the GOA groundfish fisheries are not likely to jeopardize the continued existence of ESA-listed Chinook salmon stocks. If, during the course of the fisheries, the specified level of take is exceeded, a re-initiation of consultation is required, along with a review of the reasonable and prudent measures identified in the 2007 supplemental biological opinion.

Since 1994, Chinook salmon PSC in the GOA groundfish trawl fisheries has generally remained below its incidental take limit of 40,000, except in 2007 (40,540) and 2010 (54,559). The high Chinook salmon PSC in 2010 prompted the most recent re-initiation of the ESA consultation in 2012 (Stelle 2012). The 2012 consultation concluded that exceeding the Chinook salmon incidental take limit in the GOA fishery was not a chronic situation, and retained the provisions in the incidental take statement in the 2007 biological opinion (NMFS 2007), which included an overall incidental take limit of 40,000 Chinook salmon.

The 40,000 Chinook salmon GOA limit in the incidental take statement originates from a 1994 biological opinion (NMFS 1994) on the impacts of the Bering Sea/Aleutian Islands (BSAI) and GOA groundfish fisheries on ESA-listed Snake River sockeye, spring/summer Chinook, and fall Chinook salmon. In that biological opinion, NMFS assumed that the annual PSC of Chinook salmon in 1994, and "for the foreseeable future," will be 40,000 or fewer. NMFS used that assumption, and the estimated number of

Snake River sockeye, spring/summer Chinook, and fall Chinook salmon present in the GOA and BSAI to conclude that the GOA and BSAI groundfish trawl fisheries were not likely to jeopardize the continued existence of listed Snake River sockeye and Chinook salmon. The 1994 biological opinion contained conservation recommendations that, among other things, recommended that the Council and NMFS should take necessary actions to ensure that Chinook salmon PSC is minimized to the extent practicable, and does not exceed 40,000 Chinook salmon per year in the GOA fisheries.

Subsequent incidental take statements have maintained the 40,000 Chinook salmon threshold established in 1994. Data from coded wire tags retrieved from GOA trawl-caught Chinook salmon have supported the underlying assumption that taking fewer than 40,000 GOA Chinook salmon PSC per year would not be likely to jeopardize the continued existence of ESA-listed Snake River salmon¹¹, as only a small proportion of the tags indicated that the salmon originated from that protected river system.

3.4.1.2 Chinook PSC Monitoring and Estimation Procedures

NMFS estimates Chinook salmon PSC for the GOA trawl fisheries based on Observer Program data and mandatory fishing industry reports. This section summarizes the current observer sampling and salmon PSC estimation methods in the GOA trawl fisheries. NMFS's catch, bycatch, and PSC estimation methods are described in more detail in Cahalan et al. (2014). Additional information is also available in the analyses for GOA Groundfish FMP Amendments 93 and 97.¹²

This information is provided only for contextual understanding, considering that PSC estimation procedures and observer coverage were listed among the agency's rationale for implementing the 2015 Emergency Rule that is described in Section 3.4.1.5. *Under this action, NMFS would make no changes to observer deployment and coverage, observer sampling, and PSC estimation methods.*

3.4.1.2.1 Observer Coverage

The Observer Program places all vessels and processors in the groundfish and halibut fisheries off Alaska into either the full or partial observer coverage category. Shoreside processors and vessels participating in the trawl fisheries in the GOA fall into either of these categories:

- **Full Coverage:** All trawl CPs are included in the full coverage category and carry an observer on every trip. In addition, all CPs fishing in the Rockfish Program, including sideboard fisheries, are required to carry two observers ("200 percent observer coverage"). All CVs participating in the Rockfish Program are in the full coverage category and carry an observer on every trip. No shoreside processing plants are in full coverage in the GOA.
- **Partial Coverage:** Each year NMFS develops an Annual Deployment Plan (ADP) that describes the methodology to deploy observers on vessels in the partial coverage category. In 2015, all trawl CVs not in full coverage were placed into the Large-Vessel Trip Selection pool (NMFS 2014). Vessel owners or operators are required to log each fishing trip into the Observer Declare and Deploy System, and each trip has a probability of being selected for observer coverage. In 2015, the

¹¹ Snake River salmon were the focus of this study. The Northwest Region's 2007 Supplemental Biological Opinion had a broader focus.

¹² Amendment 93 EA/RIR/IRFA available at: <http://alaskafisheries.noaa.gov/sustainablefisheries/amds/93/amd93earirirfa0212.pdf>. Amendment 97 EA/RIR/IRFA available at: <http://alaskafisheries.noaa.gov/analyses/amd97/goa97finallearirirfa.pdf>.

selection probability for Large-Vessel Trip Selection was 24 percent (NMFS 2014). In 2015, partial coverage observers were not deployed to shoreside and floating processors; all of the partial coverage observers were placed onto vessels to conduct sampling.

3.4.1.2.2 Observer Sampling and Salmon PSC Estimation

Observers are responsible for assessing fishing activities and determining how to sample the unsorted catch for species composition and biological information using methodologies described in the Observer Program sampling manual (AFSC 2015). In the GOA trawl fisheries, observers are expected to sample every haul for composition and biological data.¹³ For each sampled haul, observers are instructed to collect a random species composition sample of the total catch. Observers are trained and encouraged to use a systematic sample, whenever it is logistically feasible, and they strive to take multiple, equal-sized samples from throughout the haul to obtain the largest possible sample size. However, gear handling methods in different fisheries, vessel layout, and the associated safety concerns can restrict an observer's access to unsorted catch at sea. Therefore, there are differences in catch sampling and PSC estimation procedures among the GOA trawl fisheries.

GOA Trawl Pollock CVs

Catch of CVs fishing for pollock is generally either dropped or mechanically pumped from a codend (i.e., the end of the trawl net where catch accumulates) directly into refrigerated seawater tanks. Because of the size of the codends, opportunities for sorting of any species, including salmon PSC, are extremely low. Observers attempt to obtain random species composition samples by collecting small amounts of catch as it flows from the codend into the refrigerated seawater tanks. Therefore, in the GOA pollock fishery, observer samples are often obtained opportunistically and sample fractions vary. For uncommon species such as salmon, a larger sample size is desired, but large sample sizes are generally not logistically possible on pollock CVs. For this reason, whenever possible, estimates of CVs' salmon PSC are based on counts of the salmon PSC that are generated from offload sampling that occurs during delivery to a shoreside processor.

Sampling of Chinook salmon in the GOA is a priority for NMFS, and there have been several iterations of the sampling design used to obtain genetic samples from salmon PSC for the purposes of determining stock of origin (Faunce 2015). Starting in 2013, each ADP has outlined a Chinook salmon sampling protocol for the pollock trawl fishery. In 2013, observers were deployed to shoreside and floating processors to enumerate and genetically sample salmon PSC from the GOA pollock fishery (NMFS 2013a). Starting in 2014, NMFS revised the methods for collecting Chinook salmon in the GOA pollock fishery to improve the representativeness of samples (NMFS 2013b). Observers are deployed on trawl trips that target pollock in the GOA, and they obtain samples from all salmon bycatch in the offload at the shoreside processing facility. No sampling occurs on unobserved trips.

Shoreside processors in the GOA are not required to sort and weigh all catch by species prior to the offload entering the factory. Therefore, several GOA shoreside processors do not have a dedicated sorting operation and the vessel observer is frequently the only person sorting out the PSC salmon from a delivery. For some

¹³ In some cases, an observer is unable to sample all the hauls during a trip and is instructed to use a random break table. This could be a result of observer illness or injury, or rough weather preventing the observer from completing his or her duties.

shoreside processors, the majority of the sorting of PSC salmon from a pollock delivery occurs inside the processing area of the shoreside processor. This is very different from BSAI shoreside processors, which are required by regulation to provide NMFS with a Catch Monitoring and Control Plan (CMCP) that details how the processor will ensure that all species are sorted and weighed within view of the observer. CMCPs require the processor to identify a designated sorting area that precedes the fish holding bins and processing equipment, and allows an observer to monitor all locations where catch could be sorted. Under a CMCP, no other species besides pollock are allowed to enter the processing area without first being sorted and weighed. CMCPs also require a designated storage location for salmon PSC within view of the observer at all times during the offload, and specific handling requirements for salmon found during the offload.

In the GOA, salmon that are missed during sorting of pollock deliveries and end up inside the processing facility are referred to as “after-scale” salmon (so called because they were initially weighed along with pollock). After-scale salmon create tracking difficulties for the shoreside processor and the observer. Although after-scale salmon are required to be given to an observer, there is no direct observation of salmon once they are moved past the observer and into the processing area. Observers currently record after-scale salmon made available to them by the shoreside processor personnel as if they had collected them during the initial sorting of the pollock delivery. In many cases, once the after-scale salmon have been found inside the processing facility by shoreside processor personnel, the observer may have already returned to sea or have been reassigned to a different vessel in a different location. After-scale salmon can better be characterized as shoreside processor reported information. Further complications in shoreside processor accounting for after-scale salmon occur when multiple CVs are delivering in quick succession, making it difficult or impossible to determine the CV trip from which the salmon originated. Also, shoreside processor personnel may not be saving after-scale salmon for observers; therefore, after-scale salmon numbers are difficult to quantify and verify for each delivery.

In the CAS, NMFS uses the observer data to create PSC rates (a ratio of the estimated PSC to the estimated total catch in sampled hauls). The observer information from both at-sea samples and offload counts on observed trips is used to create the PSC rates that are then applied to industry supplied landings of retained catch on unobserved trips. Depending on the observer data that are available, the extrapolation from observed vessels to unobserved vessels is based on varying levels of aggregated data (post-stratification). Data are matched based on processing sector (e.g., CV), week, fishery (e.g., pollock), gear (e.g., pelagic trawl), and Federal reporting area. Further detail on the estimation procedure, including levels of post-stratification is available in Cahalan et al. (2014).

GOA Trawl Non-Pollock CVs

Unlike CVs in pollock fisheries, vessels in other GOA trawl fisheries, which include deep and shallow-water flatfish and Pacific cod, sort their catch extensively at sea. Sorting at sea is a critical attribute associated with the fisheries because of a larger amount of unmarketable bycatch. For example, vessels frequently have conveyor systems on deck to facilitate sorting of uneconomical species and PSC, which must be discarded at sea. If vessels do not have a sorting conveyor then they often sort directly from the trawl alley. Observers collect species composition samples prior to any sorting of catch by the fishing crew. Because a large amount of sorting occurs at sea and the observers are unable to monitor this sorting while engaged in other sampling duties, it is extremely difficult to verify that no salmon PSC have been discarded at sea. Because of the extensive sorting for unmarketable bycatch at sea, there is a high likelihood that

salmon PSC has been sorted from the catch prior to delivery. Offload counts of salmon PSC are not possible in these fisheries because of the amount of sorting that occurs at sea in these fisheries. Therefore, PSC estimates from CVs in other GOA trawl fisheries are all derived from at-sea samples. NMFS uses the at-sea samples on observed trips to create Chinook PSC rates that are applied to unobserved vessels based on varying levels of aggregation (Cahalan et al. 2014).

Central GOA Rockfish Program CVs

Observer sampling aboard CVs in the Central GOA Rockfish Program is the same as in other non-pollock trawl CV fisheries. However, full observer coverage is required so that the vessels in a rockfish cooperative obtain a vessel-specific halibut PSC rate to support transferable halibut PSC allocations. Observers collect species composition samples at sea prior to any sorting of the catch by the vessel's crew. Since the majority of species caught in these fisheries are allocated to the cooperative and full retention of these species is required, sorting at sea is limited to the species that are required to be discarded. Those species would include non-salmon¹⁴ PSC, and other species for which retention is prohibited, like lingcod (during certain times of the year) or groundfish species for which ABC has been attained. PSC estimates from Rockfish Program CVs are derived from at-sea samples.

Shoreside processors in the Central GOA that receive catch from Rockfish Program vessels are required to operate under a CMCP that details how the processing plant will ensure that all delivered catch is sorted and weighed within view of a CMCP specialist. The CMCP specialist is a NMFS employee who monitors portions of (but not the entire) offload. The role of the NMFS CMCP specialist is not to conduct observer sampling. The CMCP specialist ensures that the processor is following their CMCP and provides feedback to the processors to improve sorting, weighing, and reporting of delivered species.

GOA Trawl CPs

The sampling methods used on CPs allow observers to collect larger species composition samples under more controlled conditions than on CVs, because the observer is able to collect samples downstream of the fish holding tanks, just prior to the catch sorting area that precedes the fish processing equipment. Crew sorts catch under more controlled conditions than aboard CVs, and all CPs have at least one observer aboard. Additionally, on many CPs that are in the Rockfish and Amendment 80 Programs, the observer has access to catch weighing scales and an observer sampling station. Many CPs that participate in these cooperatives also have flow scales, which enhance an observer's ability to collect larger samples. The number of salmon PSC in each haul is derived from observer samples within the haul. Estimates of PSC on unsampled hauls are derived from sampled hauls on the same trip (see Cahalan et al. 2014 for more details).

3.4.1.3 Chinook PSC Levels

3.4.1.3.1 Non-pollock/Non-Rockfish Program Sectors

Table 3 reports the GOA Chinook salmon PSC in the non-pollock/non-Rockfish Program sectors from 2010 through 2015. The information in that table shows the variable nature of Chinook salmon PSC in these fisheries. In general, high and low years of PSC occurred at the same time for both the CV and CP sectors.

¹⁴ This includes any non-salmon species that is designated as prohibited retention status. Some species are designated as such at the beginning of the year and some groundfish species may be designated as prohibited retention to help ensure it does not reach the overfishing level

Public testimony on past Council actions suggested that Chinook salmon are more abundant on the fishing grounds some years and, thus, are more difficult to avoid. The anomaly in the data is the PSC in the 2015 Western GOA CV fisheries. PSC was much greater that year in the Pacific cod fishery than it had been in previous years. This may be a reflection of increased observer coverage in that fishery, in addition to the variable PSC levels inherent in these fisheries.

Table 3 Chinook salmon PSC in the non-pollock/non-Rockfish Program, by sector, area, month, and year (2010 through 2015)

Sector	Area	Month	2010	2011	2012	2013	2014	2015	
CP	CG	1							
		2	341	67		643			
		3	281	307		820	61		
		4	1,975	1,440	885	1,756	239	339	
		5	13	17		181	368	127	
		6							
		7	13	145		116		14	
		8		29				45	
		9	79						
		10	112	10	126				
		11	106	144		70	654		
		12	187						
	CG Total			3,106	2,159	1,011	3,587	1,322	526
	WG	1							
		2			53				
		3	68	246		16			
		4	840	15		77	775		
		5					50		
		6							33
		7	292	173	385				
8			52						
9									
10			1				104		
11		76			18	447			
12									
WG Total			1,277	487	438	111	1,376	33	
CP Total			4,383	2,646	1,450	3,697	2,698	559	
CV	CG	1		217	16	73	8	4	
		2		43	36	189	145	30	
		3	92	52	356	124	128	16	
		4	1,482	2,152		1,687	44	1,135	
		5	299	4		1,720	25	632	
		6	0			4	1		
		7		3		34	783		
		8	33	4		129	252		
		9	619	6		168		2	
		10	1,413	926	396	259		2	
		11	203	37	112	132	45		
		12	20		10		2		
	CG Total			4,161	3,445	926	4,519	1,430	1,822
	WG	1							C
		2		96					512
		3			1	15	1		*
	WG Total			0	96	1	15	1	1,056
CV Total			4,161	3,541	926	4,534	1,431	2,878	

Source: AKFIN summary of catch accounting data

"C" denotes confidential data; * denotes data redacted to preserve confidentiality of another cell

Table 4 shows the monthly running total percentage of the GOA non-pollock/non-Rockfish Program sectors' Chinook salmon PSC. This table illustrates when most of the PSC in these fisheries was taken. The CP and CV sectors typically used a relatively small percentage of their Chinook salmon PSC from the January 20 start of the fisheries through March. CVs are typically fishing pollock and some Pacific cod during these months. Since Chinook salmon PSC taken in the directed pollock fishery is taken from a separate limit, the table reflects mainly Chinook that were taken while targeting Pacific cod. CPs have limited effort in the GOA during the early months of the year. When effort increases in the flatfish fisheries during April, primarily the arrowtooth flounder and rex sole fisheries, Chinook salmon PSC increases for both the CVs and CPs. Prior to 2013, CP effort in the Western GOA rockfish fishery resulted in increased Chinook salmon PSC during July. That trend has not been observed in the most recent years. As expected, there is very little Chinook salmon PSC reported in November and December.

Table 4 Cumulative percentage of the GOA non-pollock/non-Rockfish Program sectors' Chinook salmon PSC, by month and year

Month	2010	2011	2012	2013	2014	2015	Aggregate	
	Cumulative Percent of CP PSC							
1	0%	0%	0%	0%	0%	0%	0%	
2	8%	3%	4%	17%	0%	0%	7%	
3	16%	23%	4%	40%	2%	0%	19%	
4	80%	78%	65%	90%	40%	61%	73%	
5	80%	79%	65%	94%	55%	83%	78%	
6	80%	79%	65%	94%	55%	89%	78%	
7	87%	91%	91%	98%	55%	92%	85%	
8	87%	94%	91%	98%	55%	100%	86%	
9	89%	94%	91%	98%	55%	100%	87%	
10	92%	95%	100%	98%	59%	100%	89%	
11	96%	100%	100%	100%	100%	100%	99%	
12	100%	100%	100%	100%	100%	100%	100%	
	Cumulative Percent of CV PSC							
1	0%	6%	2%	2%	1%	13%	4%	
2	0%	10%	6%	6%	11%	32%	10%	
3	2%	12%	44%	9%	20%	38%	15%	
4	38%	72%	44%	46%	23%	78%	53%	
5	45%	72%	44%	84%	24%	100%	68%	
6	45%	72%	44%	84%	24%	100%	68%	
7	45%	72%	44%	85%	79%	100%	73%	
8	46%	73%	44%	88%	97%	100%	75%	
9	61%	73%	44%	91%	97%	100%	80%	
10	95%	99%	87%	97%	97%	100%	97%	
11	100%	100%	99%	100%	100%	100%	100%	
12	100%	100%	100%	100%	100%	100%	100%	

Source: AKFIN summary of NMFS Catch Accounting data

Table 5 reports the cumulative monthly Chinook salmon PSC in the non-pollock/non-Rockfish Program as a percentage of the sector's annual PSC limit. During 2012 and 2014 both the CVs and CPs stayed within their PSC limit; during 2010 and 2013 both sectors exceeded their current limit. It has been well documented that the CV sector exceeded its PSC limit early in the 2015 fishing year and was prohibited from these

directed fisheries until the Emergency Rule was implemented (see Section 3.4.1.5). The CP sector has remained well under its PSC limit, having taken 16 percent of the available PSC as of mid-November.

Table 5 Cumulative percentage of the sector's current annual GOA non-pollock/non-Rockfish Program PSC limit, by month and year

Month	2010	2011	2012	2013	2014	2015	Average
	Cumulative Percent of CP PSC Limit (3,600 fish)						
1	0%	0%	0%	0%	0%	0%	0%
2	9%	2%	1%	18%	0%	0%	5%
3	19%	17%	1%	41%	2%	0%	13%
4	97%	58%	26%	92%	30%	9%	52%
5	98%	58%	26%	97%	41%	13%	56%
6	98%	58%	26%	97%	41%	14%	56%
7	106%	67%	37%	100%	41%	14%	61%
8	106%	69%	37%	100%	41%	16%	62%
9	108%	69%	37%	100%	41%	16%	62%
10	112%	69%	40%	100%	44%	16%	64%
11	117%	74%	40%	103%	75%	16%	71%
12	122%	74%	40%	103%	75%	16%	71%
	Cumulative Percent of CV PSC Limit (2,700 fish)						
1	0%	8%	1%	3%	0%	14%	4%
2	0%	13%	2%	10%	6%	34%	11%
3	3%	15%	15%	15%	10%	41%	17%
4	58%	95%	15%	77%	12%	83%	57%
5	69%	95%	15%	141%	13%	106%	73%
6	69%	95%	15%	141%	13%	106%	73%
7	69%	95%	15%	142%	42%	106%	78%
8	71%	95%	15%	147%	51%	106%	81%
9	94%	95%	15%	153%	51%	106%	86%
10	146%	130%	30%	163%	51%	107%	104%
11	153%	131%	34%	168%	53%	107%	108%
12	154%	131%	34%	168%	53%	107%	108%

Source: AKFIN summary of NMFS Catch Accounting data

3.4.1.3.2 GOA Pollock Fisheries

A Chinook salmon limit of 25,000 fish is apportioned to the directed Western GOA pollock fishery (6,684 Chinook salmon) and the Central GOA pollock fishery (18,316 Chinook salmon). Inshore/offshore regulations limit participation in this fishery to primarily CVs. The TAC for pollock is apportioned among statistical areas 610, 620, and 630 in proportion to the distribution of the pollock biomass as determined by the most recent NMFS surveys. The four Western and Central GOA seasonal apportionments are established under § 679.21(a)(5)(iv)(A), with each season allocated 25 percent of the available TAC. Those four seasons are—

- A season. From 1200 hours, A.l.t., January 20 through 1200 hours, A.l.t., March 10;
- B season. From 1200 hours, A.l.t., March 10 through 1200 hours, A.l.t., May 31;
- C season. From 1200 hours, A.l.t., August 25 through 1200 hours, A.l.t., October 1; and
- D season. From 1200 hours, A.l.t., October 1 through 1200 hours, A.l.t., November 1.

Table 6 shows that Chinook salmon PSC in the Central GOA is generally greatest in February and March, during the A and B seasons. In the Western GOA Chinook salmon PSC extends into April. The summer fishery closure between the B and C seasons means that no PSC accrues to the limit in during June, July or early- and mid-August. When the C and D seasons open, some PSC is caught at the end of August, but the majority is caught in September and October for both areas.

Table 6 Chinook PSC in the directed pollock fisheries by area, month, and year (2010 through 2015)

Area	Month	2010	2011	2012	2013	2014	2015
CG	1	42			323	1	85
	2	3,469	1,573	2,000	3,792	745	2,027
	3	1,256	712	614	534	2,045	3,098
	4					70	680
	5						40
	6						
	7						
	8				442	242	
	9	2,823	497	4,363	545	720	683
	10	4,718	7,977	3,648	5,336	3,387	2,183
	11			214	86	254	
	12						
CG Total		12,308	10,759	10,838	11,056	7,463	8,797
WG	1	342		175	0	11	C
	2	621		281		2	
	3	384	418	324	68	87	268
	4	426	45	21		104	148
	5					1	
	6						
	7						
	8	331	41	7	25	156	*
	9	1,490	661	102	68	2,070	1,160
	10	28,202	2,405	5,208	530	711	2,311
	11		3		930		
	12						
WG Total		31,796	3,573	6,118	1,621	3,142	3,947

Source: AKFIN summary of NMFS Catch Accounting data

"C" denotes confidential data; * denotes data redacted to preserve confidentiality of another cell

Table 7 shows that in the Central GOA, on average, about 60 percent of the Chinook salmon PSC is taken in the C and D seasons. In the Western GOA, on average about 90 percent of the PSC is taken in the C and D season. The fact that the majority of Chinook salmon PSC occurs later in the year will complicate reapportionment decisions that need to be made earlier in the year. However, the flexibility to reapportion PSC back to the pollock fishery, if it is not required by another sector, and the knowledge that this sector has been consistently under its PSC limit mitigates those concerns.

Table 7 Cumulative percentage of sector’s GOA pollock fishery Chinook salmon PSC, by month and year

Month	2010	2011	2012	2013	2014	2015	Aggregate
Cumulative Percent of CG PSC							
1	0%	0%	0%	3%	0%	1%	1%
2	29%	15%	18%	37%	10%	24%	23%
3	39%	21%	24%	42%	37%	59%	36%
4	39%	21%	24%	42%	38%	67%	38%
5	39%	21%	24%	42%	38%	67%	38%
6	39%	21%	24%	42%	38%	67%	38%
7	39%	21%	24%	42%	38%	67%	38%
8	39%	21%	24%	46%	42%	67%	39%
9	62%	26%	64%	51%	51%	75%	55%
10	100%	100%	98%	99%	97%	100%	99%
11	100%	100%	100%	100%	100%	100%	100%
12	100%	100%	100%	100%	100%	100%	100%
Cumulative Percent of WG PSC							
1	1%	0%	3%	0%	0%	0%	1%
2	3%	0%	7%	0%	0%	0%	3%
3	4%	12%	13%	4%	3%	7%	6%
4	6%	13%	13%	4%	6%	11%	7%
5	6%	13%	13%	4%	7%	11%	7%
6	6%	13%	13%	4%	7%	11%	7%
7	6%	13%	13%	4%	7%	11%	7%
8	7%	14%	13%	6%	12%	12%	9%
9	11%	33%	15%	10%	77%	41%	20%
10	100%	100%	100%	43%	100%	100%	98%
11	100%	100%	100%	100%	100%	100%	100%
12	100%	100%	100%	100%	100%	100%	100%

Source: AKFIN summary of NMFS Catch Accounting data

Table 8 reports a monthly running total of the percentage of the directed pollock fishery’s annual Chinook salmon PSC limit that has been taken. While there is a substantial increase in PSC during the C and D seasons, the percentage of the existing limit that typically remains could still accommodate a reapportionment to another sector during most years. In the Western GOA, a total of 28,202 Chinook salmon were estimated to be taken during October 2010. The unusually large amount of PSC taken that month skews the results reported in the 2010 through 2014 average. Improved observer coverage levels in the GOA trawl fisheries and efforts to avoid PSC to the extent practicable should reduce the likelihood of that amount of PSC being taken in a single future month.

Table 8 Cumulative percentage of the sector’s current annual GOA pollock fishery Chinook Salmon PSC limit, by month and year

Month	2010	2011	2012	2013	2014	2015	Average
Cumulative Percent of CG PSC Limit (18,316 fish)							
1	0%	0%	0%	2%	0%	0%	0%
2	19%	9%	11%	22%	4%	12%	13%
3	26%	12%	14%	25%	15%	28%	20%
4	26%	12%	14%	25%	16%	32%	21%
5	26%	12%	14%	25%	16%	32%	21%
6	26%	12%	14%	25%	16%	32%	21%
7	26%	12%	14%	25%	16%	32%	21%
8	26%	12%	14%	28%	17%	32%	22%
9	41%	15%	38%	31%	21%	36%	30%
10	67%	59%	58%	60%	39%	48%	55%
11	67%	59%	59%	60%	41%	48%	56%
12	67%	59%	59%	60%	41%	48%	56%
Cumulative Percent of WG PSC Limit (6,684 fish)							
1	5%	0%	3%	0%	0%	0%	1%
2	14%	0%	7%	0%	0%	0%	4%
3	20%	6%	12%	1%	1%	4%	7%
4	27%	7%	12%	1%	3%	6%	9%
5	27%	7%	12%	1%	3%	6%	9%
6	27%	7%	12%	1%	3%	6%	9%
7	27%	7%	12%	1%	3%	6%	9%
8	31%	8%	12%	1%	5%	7%	11%
9	54%	17%	14%	2%	36%	24%	25%
10	476%	53%	92%	10%	47%	59%	123%
11	476%	53%	92%	24%	47%	59%	125%
12	476%	53%	92%	24%	47%	59%	125%

Source: AKFIN summary of NMFS Catch Accounting data

3.4.1.3.3 Rockfish Program CVs

The Rockfish Program CVs are apportioned an annual limit of 1,200 Chinook salmon. Any Chinook salmon caught by Rockfish Program CVs, when checked in to a Rockfish Program cooperative, accrue against that limit. Table 9 indicates that the majority of the PSC is typically caught during May and June. During some years there are also substantial catches of Chinook salmon in September; in 2014 about 25 percent of the total was caught in November.

The following tables reflect a “lightning strike” PSC encounter that occurred in November 2015, pushing the estimated total level above the 1,200 Chinook PSC limit. Large PSC events at the end of the season have been atypical over the relatively short history of the Rockfish Program (and the Rockfish Pilot Program). However, this event, which occurred at a time of low effort in the fishery, highlights the exposure of any trawl sector operating under a hard-cap to seemingly random events, particularly when PSC levels are estimated using “basket sampling” and extrapolation methodologies.

Table 9 Chinook salmon PSC in the Rockfish Program CVs by area, month, and year (2010 through 2015)

Month	2010	2011	2012	2013	2014	2015
5	409	304	287	851	300	684
6	551	64	369	69	37	91
7	6	0	0	86	0	0
8	0	0	0	0	0	0
9	0	0	143	254	34	0
10	0	29	0	0	0	0
11	0	0	0	0	131	1,028
Total	966	397	800	1,260	503	1,802

Source: AKFIN summary of NMFS Catch Accounting data

Table 10 shows the running total percentage of Chinook salmon caught in the Rockfish Program CV sector. From 2010 through 2014 (excluding the late lightning-strike year of 2015), at least 67 percent of the total PSC was caught before July. From 2010 through 2013, at least 93 percent of the total was taken before October. Current regulations allow Chinook salmon PSC that is projected to be surplus to needs of the Rockfish Program CV sector to be reapportioned to the non-pollock CV sector on October 1 and November 15. Given that Chinook PSC in the Rockfish Program CV sector tends to be taken before October in most years, NMFS staff should have a reasonable basis to estimate the appropriate “rollover” amount; however, recent years underscore that additional flexibility could benefit managers in cases of unexpected contingencies.

The fact that the existing October and November reapportionments occur late in the year, after the non-pollock CV sector has already taken most of its Chinook salmon PSC (Table 4), could mean that the flexibility tools currently defined in regulation provide relatively little benefit in most years. Non-pollock trawl fisheries could be closed down before the existing rollovers provide any relief.

Table 10 Cumulative percentage of Rockfish Program CV sector Chinook salmon PSC, by month and year

Month	2010	2011	2012	2013	2014	2015
5	42%	77%	36%	68%	60%	38%
6	99%	93%	82%	73%	67%	43%
7	100%	93%	82%	80%	67%	43%
8	100%	93%	82%	80%	67%	43%
9	100%	93%	100%	100%	74%	43%
10	100%	100%	100%	100%	74%	43%
11	100%	100%	100%	100%	100%	100%

Source: AKFIN summary of NMFS Catch Accounting data

Table 11 indicates that Chinook salmon PSC may be available to reapportion from the Rockfish Program. Years during which Chinook salmon PSC would not have been available also tend to be years when PSC was needed in the non-pollock fisheries. The years of greatest potential surplus PSC allowances were years when it was not needed in the non-pollock fisheries, the exception being 2011. This again shows that in years of relatively high salmon PSC, the pollock sector seems to be the only fishery that was consistently

under their PSC limit and would be able to provide a reapportionment to the non-pollock non-Rockfish Program sectors.

Table 11 Cumulative percentage of the current annual Rockfish Program CV sector Chinook Salmon PSC limit (1,200 Chinook salmon), by month and year

Month	2010	2011	2012	2013	2014	2015	2010 - 2014	2010 - 2015
5	34%	25%	24%	71%	25%	57%	36%	39%
6	80%	31%	55%	77%	28%	65%	54%	56%
7	81%	31%	55%	84%	28%	65%	56%	57%
8	81%	31%	55%	84%	28%	65%	56%	57%
9	81%	31%	67%	105%	31%	65%	63%	63%
10	81%	33%	67%	105%	31%	65%	63%	63%
11	81%	33%	67%	105%	42%	150%	65%	80%

Source: AKFIN summary of NMFS Catch Accounting data

3.4.1.4 NMFS Inseason Reapportionment Process

The Council recommended separate Chinook salmon PSC limits for each trawl sector (CPs, Rockfish Program CVs, and non-Rockfish Program CVs) in order to allow the sectors to better manage their fisheries and incidental catch internally. However, subdividing PSC limits and apportioning smaller amounts to a small subset of participants can sometimes increase the likelihood of a fishery closure. Moreover, while one sector's PSC limit is reached, another's might not be fully used.¹⁵ Listed below are four examples of existing regulations that allow for inseason reapportionments of PSC, in order to address these issues and keep fisheries open:

1. Under Amendment 97, NMFS can reapportion GOA Chinook salmon PSC limits from the Rockfish Program CV sector to the non-Rockfish Program CV sector on October 1 and November 15 of each year. On October 1, all but 150 of the Chinook salmon PSC remaining in the Rockfish Program CV sector apportionment is rolled over to the non-Rockfish Program CV sector for use in fall non-pollock trawl fisheries. Any remaining Chinook PSC in the Rockfish Program CV sector is rolled over when the Program season ends on November 15;
2. NMFS may roll over up to 55 percent of the trawl halibut PSC limit that was allocated to Rockfish Program cooperatives as cooperative quota (CQ) but was not used in the Program fishery. That amount of halibut PSC is added to the last seasonal apportionment (for October 1 through December 31) during the current fishing year;¹⁶
3. NMFS may reapportion halibut PSC limits from the BSAI trawl limited access sector (non-AFA CVs) and from the American Fisheries Act (AFA) sectors' limits to Amendment 80 cooperatives;
4. Community Development Quota groups and Amendment 80 cooperatives have the ability to transfer PSC limits among themselves.

Through provisions like the ones listed above, NMFS inseason managers are able to provide economic benefits by reapportioning unused PSC to different user groups toward the end of each fishing year.

¹⁵ It is not the Council's intent that PSC is fully used. The Council intends that PSC always be avoided to the extent practicable.

¹⁶ The final 2015 apportionment of trawl halibut PSC limits is defined in Table 16 of the GOA annual harvest specifications, available at: http://alaskafisheries.noaa.gov/sustainablefisheries/specs15_16/goatable16.pdf.

However, existing Federal regulations do not include specific provisions for reallocating GOA Chinook salmon PSC among the CP and CV trawl gear sectors.

In the GOA, the trawl CP sector may use its Chinook salmon PSC limit for any of its target fisheries. The CP sector does have a seasonal limit prior to June 1; the Council recommended that seasonal limit in order to reserve at least some Chinook salmon PSC to support the CPs' Rockfish Program fisheries, through Amendment 97. The CP PSC limit for the period prior to June 1 is not a seasonal allocation, meaning PSC that is not used during that period is still available to the sector after June 1.

By contrast, the trawl CV sector has four separate Chinook salmon PSC limits: (1) Western GOA pollock directed fishery, (2) Central GOA pollock directed fishery, (3) Rockfish Program CV sector, and (4) non-Rockfish Program CV sector. The only reapportionment currently available for the trawl CV sector is from the Rockfish Program to the non-Rockfish Program CV sector. Allowing reapportionments to and from all trawl CV sectors and from the trawl CP sector to the trawl CV sector would provide management with more flexibility than is currently available, and may prevent a fishery closure or allow a closed fishery to reopen.

When reallocating groundfish TACs or reapportioning PSC limits, NMFS is careful not to negatively impact the sector from which a harvest opportunity was reallocated or reapportioned. In some cases, the decision is easy because there is little to no effort remaining in the sector that is the source of the reapportionment. A sector may have stopped fishing – voluntarily or because of a season closure date – and residual TAC or PSC amounts remain. In most cases, NMFS reapportions groundfish and PSC limits near the end of the year. Inseason management staff can better predict the amount of effort that will be in a fishery when the reapportionment date is closer to the end of the year. Towards the end of the fishing year, effort levels are often lower due to either weather conditions or TACs having been reached.

NMFS goes through several steps when deciding to reallocate a PSC limit from one sector to another; the process takes up to one week to complete:

1. NMFS determines that a sector's PSC limit has been reached or is projected to be reached;
2. If sufficient PSC is not available for reapportionment from another sector, close the sector;
3. If PSC limit is available from another sector, proceed with reapportionment (Step #4);
4. Review current effort (number of vessels, rate of PSC, amount of groundfish in the sector that reached its PSC limit ["limited sector"]);
5. Project future effort in the limited sector based on and on discussions with the fleet;
6. Review current effort (number of vessels, rate of PSC, amount of groundfish TAC remaining in the sector with projected excess PSC ["reapportion sector"]);
7. Project future effort in the reapportion sector based on both historical effort and discussions with the fleet;
8. Issue a reapportionment by writing and processing an Inseason Action.

NMFS inseason decision to reapportion GOA Chinook salmon PSC limits may be more difficult than the currently permitted PSC limit reapportionments for the following reasons:

1. Chinook PSC has been highly variable by fisheries and year, so it is difficult to project future PSC rates based on rates in current or prior year;

2. The GOA trawl CV sector participates in various fisheries with many different rates (nine non-pelagic trawl gear target fisheries and six pelagic trawl gear target fisheries);
3. Trawl CVs vary in their dependence upon different target fisheries, and may not uniformly favor reapportionments;
4. TAC levels may increase or decrease from year to year, which can change the amount of PSC that may be necessary to permit harvest the available TAC;
5. The GOA limited access trawl fleet may be limited in its ability to organize to avoid or limit Chinook salmon PSC after a reapportionment has occurred, thus, limiting NMFS confidence in PSC rate projections.

NMFS considers its ability to reapportion harvest opportunities and PSC limits to be an important function. The agency works closely with each sector before issuing reapportionments to understand the need for PSC during the period remaining in the year. NMFS anticipates that most reapportionments would be of small amounts, and several sequential reapportionments may be required during a season. Each reapportionment requires publication of the action in the *Federal Register*. NMFS uses the Inseason Action procedure for many management actions, such as opening and closing fisheries, issuing roughly 70 to 100 Inseason Actions in a typical year. An action may take up to a week to process, but often takes only a few days.

3.4.1.5 2015 Emergency Rule

As noted in Section 1.1, the GOA non-Rockfish Program CV sector's non-pollock fisheries were closed on May 3, 2015, due to the attainment of the Chinook salmon PSC limit. On August 10, 2015, NMFS established an Emergency Rule that provided the sector with up to 1,600 additional Chinook salmon PSC,¹⁷ which should allow the sector to prosecute the Pacific cod B season and fall flatfish fisheries. The Council recommended 1,600 Chinook salmon based on the sector's average PSC use after May 1 during the 2010 through 2014 period. That additional Chinook salmon PSC is separate and distinct from the sector's base-PSC limit of 2,700, and it expired on December 31, 2015. Noting that distinction is important, because it means that the Chinook salmon PSC made available through the Emergency Rule could not have been debited to retroactively account for the PSC overage that occurred when the original hard cap was reached.¹⁸ In providing a supporting analysis for the Emergency Rule, NMFS developed a rationale on the basis that the Chinook PSC closure was the result of unforeseen circumstances, and that the non-Rockfish Program CV sector's PSC use in the early months of 2015 was significantly greater than the historical levels that were the basis of the Amendment 97 hard cap (2,700 Chinook).

Section 305(c) of the Magnuson-Stevens Act provides authority for rulemaking to address an emergency. NMFS's Policy Guidelines for the Use of Emergency Rules state that the only legal prerequisite for such rulemaking is that an emergency must exist, and that NMFS must have an administrative record justifying emergency regulatory action and demonstrating compliance with the Magnuson-Stevens Act and the National Standards.¹⁹ Three criteria must be met in order for a situation to be considered a fishery emergency:

¹⁷ 80 FR 47864, August 10, 2015.

¹⁸ NMFS had estimated the GOA non-Rockfish CV trawl sector's Chinook salmon PSC at 2,624 on April 30, 2015, thus, triggering the closure. NMFS runs additional catch estimation reports over the summer to incorporate revisions to PSC rates as new observer data are incorporated into estimates. NMFS final estimate for the sector's Chinook salmon PSC at the time of the closure stood at 2,874, resulting in an overage of 174 Chinook salmon.

¹⁹ See NMFS Instruction 01-101-07 (March 31, 2008) and 62 FR 44421 (August 21, 1997).

1. It must result from recent, unforeseen events or recently discovered circumstances;
2. It must present serious conservation or management problems in the fishery; and
3. It must be able to be addressed through emergency regulations for which the immediate benefits outweigh the value of advance notice, public comment, and deliberative consideration of the impacts on participants to the same extent as would be expected under the normal rulemaking process.

NMFS prepared an RIR for the implementation of the Emergency Rule; Section 1.3.3 of that document describes how the circumstances in the GOA non-Rockfish Program CV sector trawl fishery meet each criterion.²⁰

The first criterion (*unforeseen events*) was met by the unanticipated increase in Chinook salmon PSC in the Western GOA non-pollock trawl fisheries, relative to the average Chinook salmon PSC levels that formed the basis for the limit of 2,700 established under Amendment 97. Western GOA non-pollock trawl CVs' Chinook PSC level from January through April of 2015 was 1,056 fish. That amount is nearly 10 times greater than the maximum amount used during any complete calendar year from 2007 through 2011, and nearly 24 times the annual average for that area during that time period. In the *Federal Register* notice of the Emergency Rule, NMFS states that “the magnitude of Chinook salmon use by the sector in the Western GOA when compared with the average use of Chinook salmon by the sector in the Central GOA [which was in line with historical levels] seems to indicate that 2015 is not simply a high encounter year for Chinook salmon.” Moreover, the increase in Western GOA Chinook salmon PSC levels occurred after the implementation of improved PSC data collection methods in 2013 – i.e., the restructured North Pacific Observer Program. Prior to the restructuring, vessels less than 60 feet length overall did not carry observers, and their PSC levels were estimated from observers on larger vessels. The Western GOA CV trawl fleet has a high proportion of vessels under 60 feet. NMFS was aware that observer sampling procedures produce catch estimates with some unknown amount of variability, and that deriving the Amendment 97 non-pollock Chinook PSC limits from those data would, thus, be based on data with some variability. The Council and NMFS assumed that basing the selected limit on several historical years (2007 through 2011) would provide a reasonable estimate of likely PSC levels in the future, and would provide adequate harvest opportunity consistent with the objectives of Amendment 97. The Emergency Rule determined that the Council and NMFS did not foresee how the application of Chinook salmon PSC data under the restructured Observer Program would compare with the previous observer program (pre-2013), especially in the Western GOA. The *Federal Register* notice states that new Observer Program data on previously unobserved vessels “resulted in estimates of a substantial and unexpected amount of Chinook salmon PSC [which] led to the closure of the [non-pollock] non-Rockfish Program CV sector fisheries.”

The second criterion (*serious conservation or management problems*) was met because the early fishery closure prevented the sector from harvesting thousands of metric tons of groundfish, resulting in forgone revenue for harvesters, processors, and communities. Without an Emergency Rule, NMFS estimated that the closure would have prevented harvest of 13,000 mt to 15,000 mt of groundfish over the remainder of 2015, based on average groundfish catch by the sector during 2012 through 2014 and 2010 through 2014 (see Section 1.5 of the Emergency Rule RIR). NMFS estimated forgone gross revenue to be approximately

²⁰ <http://alaskafisheries.noaa.gov/analyses/goatrawl-chinookpsc-rir0715.pdf>.

\$4.6 million in ex-vessel value, or \$11.3 million in first wholesale value (see Section 1.6.1 of the Emergency Rule RIR for additional detail). The Council’s objective for the Emergency Rule was to restore lost harvesting opportunities to the maximum extent possible, while continuing to impose a limit on the use of Chinook salmon PSC in the GOA trawl fisheries that will not exceed the combined Chinook salmon PSC limits established under Amendments 93 and 97. NMFS determined that the Emergency Rule will not create conservation issues with regard to Chinook salmon, and that the maximum allowable amount of GOA Chinook salmon PSC (40,000 fish) would not be exceeded (refer back to Section 3.4.1.1). In fact, the Emergency Rule RIR states that it is “highly unlikely that this emergency rule will result in total Chinook salmon PSC from all GOA trawl groundfish fisheries exceeding 32,500 Chinook salmon,” given estimated PSC levels in the 2015 pollock trawl fishery. The NMFS December 2015 inseason management report to the Council confirmed this projection.²¹ That report states that less than 18,500 were taken in the GOA trawl fisheries and only 12 Chinook salmon were taken from the 1,600 Chinook salmon PSC limit increase resulting from by the Emergency Rule.

The third criterion (*immediate benefits outweigh the value of the normal rule making process*) was met because it was not possible to address the issue of the fishery closure without an Emergency Rule. Waiving the notice-and-comment rulemaking period serves the industry and public by allowing for harvest of the remaining 2015 flatfish and Pacific cod fisheries. The Emergency Rule RIR notes that the Council is seeking an FMP amendment to address this, and similar, situations in a more permanent manner through the action analyzed in this document.

3.4.1.6 Future Use of Emergency Rules

The previous section describes the criteria that must be met to implement an Emergency Rule. Because one of the criteria for an Emergency Rule is that recent events or circumstances must be *unforeseen*, NMFS is unlikely to have the ability to respond with an Emergency Rule after any future groundfish closures that are caused by reaching Amendment 97 PSC limits. Given that stakeholders may not receive future relief from binding Amendment 97 limits through an Emergency Rule, policy makers considered this action to provide greater flexibility, and to reduce the likelihood and severity of premature fishery closures in the future.

3.4.2 GOA Groundfish Fleet and Harvest

3.4.2.1 Active Vessels and Participation

Table 12 is a matrix showing the participation of GOA trawl vessels in the 2014 fisheries. CVs and CPs are included in the table. As documented in other GOA trawl analyses, vessels that fish pollock in area 610 tend to fish for Pacific cod, but very few fish for any other groundfish species. Participants in the pollock fishery in areas 620 and 630 are more diversified, also targeting Pacific cod, flatfish, and rockfish. Many of these vessels are AFA-eligible and participate in the BSAI fisheries throughout the year.

CPs primarily participate in the GOA rockfish and flatfish fisheries because their effort in the pollock and Pacific cod fisheries is constrained under Inshore/Offshore regulations.

²¹ <http://alaskafisheries.noaa.gov/sustainablefisheries/inseason/default.htm>

Table 12 CV and CP participation across target fisheries and seasons, 2014

Target/Area/Season	Pollock (610) A/B	Pollock (610) C/D	Pollock (620) A/B	Pollock (620) C/D	Pollock (630) A/B	Pollock (630) C/D	Pacific Cod A	Pacific Cod B	Rockfish Program	Deep Water Flats	Shallow Water Flats	Rex Sole	Arrowtooth Flounder	Flathead Sole	BSAI (Jan-June)	BSAI (July-Dec)
Pollock (610) A/B	17	13	4	4	4	4	17	1	1		1		1		1	
Pollock (610) C/D		22	3	5	3	5	19	1	1				1		5	2
Pollock (620) A/B			43	38	43	38	32	22	28	1	16	5	18	2	17	15
Pollock (620) C/D				43	38	43	31	23	27	1	17	5	17	2	19	16
Pollock (630) A/B					43	38	32	22	28	1	16	5	18	2	17	15
Pollock (630) C/D						45	31	23	27	1	17	6	18	3	21	17
Pacific Cod A							52	20	23		13	5	18	2	11	9
Pacific Cod B								23	17	1	12	4	14	2	9	8
Rockfish Program									33	2	14	4	17	1	18	18
Deep Water Flats										2					2	2
Shallow Water Flats											18	5	12	2	6	5
Rex Sole												7	6	1	3	3
Arrowtooth Flounder													23	3	9	8
Flathead Sole														3	1	
BSAI (Jan-June)															34	26
BSAI (July-Dec)																27

Notes: "Rockfish Program" includes all targets in that program; BSAI includes all groundfish targets.
 Source: Comprehensive_Blend_CA data, provided by AKFIN

Table 13 shows the number of CVs and CPs that participated in various GOA trawl fisheries from 2003 through June 2015. The table is broken out to reflect the total number of vessels that would be impacted by the various Chinook salmon PSC limits being considered. In terms of communities and processors, the potential PSC reapportionments that impact the Western GOA have the greatest impact on the communities of King Cove and Sand Point. Reapportionments that impact the Central GOA primarily impact the community of Kodiak.

The CP portion of the table shows that in 2014, a total of 11 trawl vessels fished in the combined Western and Central GOA. More CPs fished in the Western GOA (8) than in the Central GOA (7). When Rockfish Program data are excluded from the Central GOA, the number of vessels decreases to four. This represents the GOA CP flatfish fleet.

A total of 69 CVs fished with trawl gear in the GOA during 2014. Only one of these vessels did not participate in the pollock fishery. Fifty-five CVs fished in the non-pollock non-Rockfish Program fisheries. CVs that fished in the Rockfish Program also participated in some other GOA trawl fishery. The table also indicates that most Western GOA CVs fished in the pollock and Pacific cod fisheries. In the Central GOA, a greater percentage of the fleet fished only in the GOA pollock fishery, since only 48 of the 62 vessels fished in the non-pollock fisheries.

Table 13 Active GOA trawl vessels by year, designation, area, and fishery

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
	Catcher/Processors												
GOA all fisheries	21	16	16	15	15	14	18	17	17	17	14	11	10
GOA pollock fishery*									3	1	3	2	
Non-pollock/Non-Rockfish Program	21	16	16	15	15	14	18	17	17	17	14	11	10
Western GOA all fisheries	16	15	13	11	13	11	14	13	14	15	10	8	8
Western GOA non-pollock fisheries	16	15	13	11	13	11	14	13	14	15	9	8	8
Central GOA all fisheries	15	11	12	12	9	10	12	10	8	8	8	7	6
Central GOA non-pollock/non-Rockfish Program	15	11	12	12	9	10	12	8	5	5	5	4	4
Central GOA/non-Rockfish Program	15	11	12	12	9	10	12	8	5	5	5	4	4
	Catcher Vessels												
GOA all fisheries	92	77	79	74	72	73	71	67	68	70	69	69	67
GOA pollock fishery	73	68	66	65	59	61	62	63	62	67	64	68	57
GOA non-pollock/non-Rockfish Program	74	64	69	62	63	65	59	52	53	62	58	55	51
Western GOA all fisheries	40	33	37	34	37	29	31	29	26	32	30	27	23
Western GOA non-pollock	23	17	29	25	28	24	25	15	12	24	23	24	23
Central GOA all fisheries	63	57	51	48	41	46	40	43	51	62	58	62	51
Central GOA non-pollock fisheries	55	51	40	38	37	41	34	38	42	48	49	48	33
Central GOA non-Rockfish Program fisheries	63	57	51	48	41	46	40	43	51	62	58	62	51

* Reported catch was less than 400 mt for all 6 CPs from 2011 through 2014

Note: 2015 data reported through June

Table 14 focuses on the GOA early and late season pollock fisheries in the Western GOA (610) and the Central GOA (620/630). The information is provided to indicate the number of vessels that could be impacted by a closure or reapportionment at different times of the year. That table shows that in more recent years, the number of vessels fishing during the early seasons is similar to the number of vessels fishing pollock later in the year. This has not always been the trend, especially in area 620, where the number of vessels was typically greater in the later season fisheries.

Table 14 Number of GOA trawl vessels targeting pollock, 2004 through 2014

Year	Season	610	620	630	All GOA
2004	A/B	20	31	38	58
	C/D	21	41	32	61
2005	A/B	27	19	29	54
	C/D	23	46	38	63
2006	A/B	23	20	29	50
	C/D	26	44	25	64
2007	A/B	17	9	23	39
	C/D	20	36	25	54
2008	A/B	14	16	27	42
	C/D	15	36	23	52
2009	A/B	19	23	31	51
	C/D	17	32	33	50
2010	A/B	21	33	33	53
	C/D	22	36	36	55
2011	A/B	22	37	36	57
	C/D	20	40	31	53
2012	A/B	26	53	42	61
	C/D	22	39	33	59
2013	A/B	15	42	41	52
	C/D	21	40	37	57
2014	A/B	22	43	45	62
	C/D	17	43	43	56

Source: NMFS GOA Inseason Management Report, December 2014. Available at: <http://nfpmc.legistar.com/gateway.aspx?M=F&ID=5f8a4fc3-cb62-437d-bb2b-e11fc2144311.pdf>

Table 15 focuses specifically on the number of CVs that targeted Pacific cod in the Western and Central GOA. This table closely parallels the number of vessels that fished in the non-pollock fishery in Table 12. That fact is not surprising, as Pacific cod is a key species in the fishing plans of most GOA non-pollock trawl operations.

Table 15 Number of GOA trawl CVs targeting Pacific cod, 2004 through 2014

Year	WGOA	CGOA
2004	17	48
2005	28	38
2006	25	33
2007	27	34
2008	23	41
2009	25	34
2010	15	38
2011	12	41
2012	24	47
2013	23	45
2014	24	48

Source: NMFS GOA Inseason Management Report, December 2014. Available at: <http://npfmc.legistar.com/gateway.aspx?M=F&ID=5f8a4fc3-cb62-437d-bb2b-e11fc2144311.pdf>

3.4.2.2 Groundfish Harvest

Detailed information of GOA ABCs, overfishing levels, and TACs are presented on the NMFS website²² going back to 1986. Annual catch data are also available²³ for the GOA. The hyperlink provided in the footnote links to the 2014 data. Information from those two sources was used to generate Table 16 for the pollock, Pacific cod, and other groundfish fisheries. The Council recommended TACs for 2015 and 2016 that are less than the ABCs for pollock, Pacific cod, Western GOA shallow-water flatfish, arrowtooth flounder, flathead sole (Western GOA/Central GOA), and Atka mackerel.

The pollock fishery TAC remained relatively stable over the past three fishing years in the Western GOA, but the fleet had difficulties harvesting the quota in 2013 and 2014. The inability to harvest their quota has resulted in some of the Western GOA pollock being reallocated to the Central GOA (§ 679.20(a)(5)(iv)(B)). The pollock TAC in the Central GOA has more than doubled since 2012, and the fleet has been successful in harvesting the available TAC each year. The Pacific cod TAC has been relatively stable in all areas, with a modest increase in recent years. The fleet has harvested more than 85 percent of the TAC every year in the Central and Western GOA. The arrowtooth flounder TAC in the Central GOA was increased from 30,000 mt in 2011 to 75,000 mt in 2012. The Council increased the level to ensure that the TAC was not a constraint to further development of the fishery.

²² http://alaskafisheries.noaa.gov/sustainablefisheries/historic/specs/goa_hs1986-2014.pdf

²³ http://alaskafisheries.noaa.gov/2014/car110_goa.pdf

Table 16 All gear types ABC, TAC, and catch for GOA pollock, Pacific cod, and other groundfish fisheries, 2012 through 2014

Species	Area	2014				2013				2012			
		ABC	TAC	Catch	% Caught	ABC	TAC	Catch	% Caught	ABC	TAC	Catch	% Caught
Pollock	Shumagin (610)	36,070	30,884	13,364	43%	28,072	28,072	7,711	27%	30,270	30,270	27,893	92%
	Chirikof (620)	81,784	84,274	83,082	99%	51,443	51,443	53,112	103%	45,808	45,808	45,095	98%
	Kodiak (630)	39,756	39,756	42,757	108%	27,372	27,372	29,888	109%	26,348	26,348	25,987	99%
	WYK (640)	4,741	4,741	1,056	22%	3,385	3,385	2,940	87%	3,244	3,244	2,381	73%
	Total	174,976	174,976	140,259	80%	121,046	121,046	93,651	77%	116,444	116,444	101,356	87%
Pacific cod	W	32,745	22,922	21,686	95%	28,280	21,210	19,077	90%	28,032	21,024	18,374	87%
	C	53,100	39,825	40,219	101%	49,288	36,966	31,936	86%	56,940	42,705	37,776	88%
	E	2,655	1,991	318	16%	3,232	2,424	467	19%	2,628	1,971	339	17%
	Total	88,500	64,738	62,223	96%	80,800	60,600	51,479	85%	87,600	65,700	56,489	86%
Sablefish	W	1,480	1,480	1,200	81%	1,750	1,750	1,384	79%	1,780	1,780	1,397	78%
	C	4,681	4,681	4,729	101%	5,540	5,540	5,207	94%	5,760	5,760	5,327	92%
	WYK	1,716	1,716	1,669	97%	2,030	2,030	2,106	104%	2,247	2,247	2,033	90%
	Total	10,572	10,572	7,598	72%	12,510	12,510	11,944	95%	12,960	12,960	11,955	92%
Shallow-water Flatfish	W	20,376	13,250	246	2%	19,489	13,250	155	1%	21,994	13,250	153	1%
	C	17,813	17,813	4,499	25%	20,168	18,000	5,357	30%	22,910	18,000	3,869	21%
	WYK	2,039	2,039	2	0%	4,647	4,647	1	0%	4,307	4,307	0	0%
	Total	40,805	33,679	4,747	14%	45,484	37,077	5,515	15%	50,683	37,029	4,022	11%
Deep-water Flatfish	W	302	302	68	23%	176	176	20	11%	176	176	2	1%
	C	3,727	3,727	278	7%	2,308	2,308	215	9%	2,308	2,308	284	12%
	WYK	5,532	5,532	5	0%	1,581	1,581	3	0%	1,581	1,581	3	0%
	Total	5,126	5,126	351	7%	5,126	5,126	242	5%	5,126	5,126	291	6%
Rex Sole	W	1,270	1,270	126	10%	1,300	1,300	104	8%	1,307	1,307	215	16%
	C	6,231	6,231	3,450	55%	6,376	6,376	3,603	57%	6,412	6,412	2,210	34%
	WYK	813	813	1	0%	832	832	0	0%	836	836	0	0%
	Total	9,341	9,341	3,577	38%	9,560	9,560	3,707	39%	9,612	9,612	2,425	25%
Arrowtooth Flounder	W	31,142	14,500	1,895	13%	27,181	14,500	805	6%	27,495	14,500	1,233	9%
	C	115,612	75,000	34,326	46%	141,527	75,000	20,561	27%	143,162	75,000	19,328	26%
	WYK	37,232	6,900	52	1%	20,917	6,900	40	1%	21,159	6,900	28	0%
	Total	195,358	103,300	36,273	35%	210,451	103,300	21,449	21%	212,882	103,300	20,641	20%

Source: NMFS inseason management annual reports.

Table 17 focuses only on trawl catch in 2013 and 2014. This is particularly important for species that are taken with multiple types of gear, like Pacific cod and sablefish, to compare information reported in Table 16. This table also provides some information on the catch in the rockfish fisheries. Other tables in this section exclude Rockfish Program catch, unless otherwise noted. Rockfish Program catch is separated out in most tables because the Rockfish Program CV sector receives a separate Chinook salmon PSC apportionment.

Table 17 GOA trawl CV catch by species, 2013 and 2014

Species	2013		2014	
	Retained	Total	Retained	Total
Pollock	91,184	93,562	138,480	139,791
Pacific Cod	19,384	21,694	23,208	26,667
Arrowtooth Flounder	16,066	21,158	32,418	35,650
Shallow Water Flatfish	5,279	5,497	4,136	4,560
Rex Sole	3,639	3,707	3,491	3,536
Flathead Sole	2,483	2,799	2,306	2,445
Deep Water Flatfish	140	223	237	343
Pacific Ocean Perch	12,177	13,181	15,989	17,615
Northern Rockfish	4,679	4,869	4,104	4,249
Dusky Rockfish	2,969	3,116	2,946	3,020
Rougheye Rockfish	326	336	507	534
Shortraker Rockfish	273	356	317	337
Thornyhead Rockfish	199	216	461	477
Other Rockfish	171	520	513	861
Sablefish	799	846	889	954
Atka Mackerel	846	1,273	965	1,033
Total	162,637	176,975	231,917	244,552

Table 18 and Table 19 provide information on the percentage of gross ex-vessel value (as measured in dollars and reported through AKFIN) generated by trawl vessels in each month. The purpose of these tables is to represent the relative impact of closures to a particular fishery (or set of fisheries) at a given point in the calendar year. Rockfish Program values were excluded because vessels in that fishery have a separate Chinook salmon PSC allocation. Monthly data were aggregated across the years 2008 through 2014. Monthly values are split out by area and by three fishery groups – pollock, Pacific cod, and all other non-Rockfish Program groundfish. The analysts aggregated the non-pollock and non-cod (“other”) groundfish targets in order to avoid reporting confidential data, as some targets receive relatively little effort in certain months; a reader could combine the row for “other” targets with the row for Pacific cod to look at activity and monthly revenue levels for the targets that are capped under the non-Rockfish Program CV sector’s Chinook salmon PSC apportionment of 2,700 fish.

Finally, Table 20 shows the percentage of total GOA non-Rockfish Program trawl vessel revenue that was generated on average by month, area, and fishery. If a closure were to occur in a fishery, summing the percentages for that area would give a general idea of the historical amount of ex-vessel gross revenue generated after the closure occurred.

Table 18 Average percent of GOA CV fishery ex-vessel gross value generated by month and fishery, 2008 through 2014 (excludes Rockfish Program value)

Area	Targets	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
610	Other	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%
	Pacific cod	11%	80%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Pollock	2%	4%	25%	6%	0%	0%	0%	10%	24%	29%	0%	0%
610 Total		5%	28%	20%	4%	0%	0%	0%	7%	17%	20%	0%	0%
620	Other	0%	9%	3%	19%	15%	8%	14%	3%	5%	16%	8%	1%
	Pacific cod	15%	20%	38%	5%	0%	0%	0%	0%	8%	14%	0%	0%
	Pollock	1%	20%	50%	1%	0%	0%	0%	3%	10%	15%	1%	0%
620 Total		3%	19%	46%	2%	1%	0%	1%	2%	10%	15%	1%	0%
630	Other	0%	8%	7%	27%	8%	4%	7%	11%	6%	14%	6%	1%
	Pacific cod	31%	7%	22%	3%	0%	0%	0%	0%	26%	11%	0%	0%
	Pollock	1%	14%	18%	0%	0%	0%	0%	2%	27%	37%	1%	0%
630 Total		9%	10%	16%	9%	2%	1%	2%	4%	20%	23%	2%	0%
640	Other	0%	0%	0%	0%	0%	0%	94%	6%	0%	0%	0%	0%
	Pollock	0%	14%	73%	12%	0%	0%	0%	0%	1%	0%	0%	0%
640 Total		0%	12%	65%	10%	0%	0%	11%	1%	1%	0%	0%	0%
Total all areas		6%	17%	29%	6%	1%	1%	1%	4%	15%	19%	1%	0%

Source: Comprehensive_Blend_CA data, provided by AKFIN

Note: The "other" category is all GOA non-Rockfish Program target fisheries other than Pacific cod and pollock.

Table 19 Running total percent of GOA CV fishery ex-vessel gross value generated by month and fishery, 2008 through 2014 (excludes Rockfish Program value)

Area	Targets	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
610	Other	0%	0%	0%	0%	0%	0%	100%	100%	100%	100%	100%	100%
	Pacific cod	11%	91%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Pollock	2%	6%	31%	37%	37%	37%	37%	47%	71%	100%	100%	100%
610 Total		5%	32%	52%	56%	56%	56%	56%	63%	80%	100%	100%	100%
620	Other	0%	9%	12%	31%	47%	54%	68%	70%	76%	91%	99%	100%
	Pacific cod	15%	35%	73%	78%	78%	78%	78%	78%	86%	100%	100%	100%
	Pollock	1%	21%	71%	72%	72%	72%	72%	74%	84%	99%	100%	100%
620 Total		3%	22%	68%	71%	71%	72%	72%	75%	84%	99%	100%	100%
630	Other	0%	9%	15%	42%	50%	54%	61%	72%	79%	93%	99%	100%
	Pacific cod	31%	39%	60%	63%	63%	63%	63%	63%	89%	100%	100%	100%
	Pollock	1%	15%	33%	34%	34%	34%	34%	35%	62%	99%	100%	100%
630 Total		9%	19%	35%	44%	46%	48%	50%	54%	74%	97%	100%	100%
640	Other	0%	0%	0%	0%	0%	0%	94%	100%	100%	100%	100%	100%
	Pollock	0%	14%	87%	99%	99%	99%	99%	99%	100%	100%	100%	100%
640 Total		0%	12%	77%	87%	87%	87%	98%	99%	100%	100%	100%	100%
Total all areas		6%	23%	51%	57%	58%	59%	60%	64%	80%	98%	100%	100%

Source: Comprehensive_Blend_CA data, provided by AKFIN

Note: The "other" category is all non-Rockfish Program GOA target fisheries other than Pacific cod and pollock.

Table 20 Percentage of CVs gross GOA ex-vessel revenue by fishery, area, month, and annually from 2008 through 2014 (excludes Rockfish Program value)

Area	Targets	1	2	3	4	5	6	7	8	9	10	11	12	Annual
610	Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Pacific cod	0.7%	4.8%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%
	Pollock	0.2%	0.6%	3.4%	0.8%	0.0%	0.0%	0.0%	1.3%	3.3%	3.9%	0.0%	0.0%	13.6%
610 Total		0.9%	5.4%	3.9%	0.8%	0.0%	0.0%	0.0%	1.3%	3.3%	3.9%	0.0%	0.0%	19.7%
620	Other	0.0%	0.1%	0.1%	0.3%	0.2%	0.1%	0.2%	0.0%	0.1%	0.2%	0.1%	0.0%	1.5%
	Pacific cod	0.7%	0.9%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.4%	0.6%	0.0%	0.0%	4.3%
	Pollock	0.4%	6.0%	15.3%	0.3%	0.0%	0.0%	0.0%	0.8%	3.1%	4.6%	0.3%	0.0%	30.9%
620 Total		1.1%	7.1%	17.0%	0.8%	0.2%	0.1%	0.2%	0.9%	3.5%	5.4%	0.4%	0.0%	36.7%
630	Other	0.1%	1.1%	0.9%	3.5%	1.0%	0.5%	1.0%	1.5%	0.9%	1.8%	0.8%	0.2%	13.2%
	Pacific cod	3.5%	0.8%	2.4%	0.3%	0.0%	0.0%	0.0%	0.0%	2.8%	1.3%	0.0%	0.0%	11.1%
	Pollock	0.2%	2.4%	3.2%	0.0%	0.0%	0.0%	0.0%	0.3%	4.7%	6.6%	0.1%	0.0%	17.6%
630 Total		3.8%	4.3%	6.5%	3.8%	1.0%	0.5%	1.0%	1.8%	8.4%	9.6%	0.9%	0.2%	41.9%
640	Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
	Pollock	0.0%	0.2%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%
640 Total		0.0%	0.2%	1.1%	0.2%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%
Total all areas		5.7%	17.0%	28.6%	5.6%	1.3%	0.7%	1.4%	4.1%	15.2%	18.9%	1.3%	0.2%	100.0%

Source: Comprehensive_Blend_CA data, provided by AKFIN

Note: The “other” category is all non-Rockfish Program GOA target fisheries other than Pacific cod and pollock.

Table 21 illustrates the progression of harvest in the Rockfish Program CV sector by month.²⁴ This information provides a sense of how quickly the available CQ is harvested, and how much effort might remain in the fishery when NMFS inseason managers might consider a reapportionment of Chinook salmon PSC from this sector to another. In recent years, at least two-thirds of the sector’s annual harvest had been taken by the end of July. In 2014 and 2015, approximately 90 percent of the sector’s harvest had occurred by the end of August. The data do not bear out anecdotal reports in public testimony that the sector has been trending towards harvesting later into the year as the result of voluntary stand-downs to avoid high Chinook salmon PSC rates in the early summer, but the possibility of that strategy in the future cannot be dismissed. As noted in Section 3.4.1.4, NMFS inseason managers would assess the effort remaining in any sector before reapportioning some of its PSC to another sector. In conclusion, and granting the assumption that this sector is relatively more likely to have excess PSC, it would appear that reapportionments could be made earlier than the October 1 rollover date that is currently in place through Amendment 97. This issue is further discussed in relation to Option 4 in Section 3.6.

Table 21 Running total percent of Rockfish Program CV sector harvest (mt) by month, 2010 through 2015

Month	2010	2011	2012	2013	2014	2015	Aggregate
5	33%	44%	40%	30%	51%	53%	42%
6	54%	57%	68%	54%	68%	85%	65%
7	72%	72%	80%	67%	74%	90%	76%
8	82%	81%	84%	68%	88%	92%	83%
9	83%	89%	95%	80%	94%	95%	90%
10	99%	97%	95%	88%	96%	100%	96%
11	100%	100%	100%	100%	100%	100%	100%

Source: Comprehensive_Blend_CA data, provided by AKFIN

²⁴ This table is built from data on harvested weight (in metric tons).

3.4.3 Primary GOA Trawl Groundfish Communities

The Amendment 97 analysis (NPFMC 2014) stated that the three communities where community-level impacts are most likely are King Cove, Sand Point, and Kodiak. Community profiles for each of these communities can be found on the Alaska Fisheries Science Center's website (Himes-Cornell 2013a and 2013b). These profiles provide a summary of each community's structure and fishery dependence.

The magnitude of any effects will depend on the timing of any fishery closures and the foregone harvests caused by those closures. Closures that occur after the early Western GOA pollock and Pacific cod seasons will predominately impact Kodiak. Kodiak is substantially engaged in a wide range of GOA groundfish trawl fisheries through both its local fleet and processors. Kodiak processing operations form the core of Central GOA groundfish shore-based processing. Kodiak is especially vulnerable to adverse economic impacts from closures of Central GOA non-pollock groundfish trawl fisheries. Pacific cod fisheries in late summer and early fall, and in the flatfish fisheries (including both shallow-water flatfish and arrowtooth flounder) late in the year are important to Kodiak. These fisheries fill important gaps in non-GOA-groundfish activity for both the fleet harvesting these species and processing plants that receive deliveries. A closure of the flatfish fisheries late in the year could create a range of challenges with respect to continuity of operations and utilization of processing labor in Kodiak. For Kodiak shore-based processors, flatfish (year-round) accounted for roughly 10 percent of combined flatfish and other groundfish first wholesale gross revenues on an annual average basis in recent years, and roughly 5 percent of first wholesale gross revenues for all species combined.

Although non-pollock groundfish fisheries serve an important role in King Cove and Sand Point economies, those communities are likely to be largely unaffected by any closure that occurs after the Pacific cod A season, as the CV sector has little involvement in any other Western GOA non-pollock trawl fisheries. As a consequence, the impacts of any, except for the most constraining limits, imposed on groundfish fisheries from Chinook PSC, to King Cove and Sand Point are likely to be minimal. Any increase in Chinook salmon PSC would reduce the number of salmon available to other users throughout the West Coast. Based on limited samples it appears most of the impacts would accrue to persons in the lower 48 States and Canada. The marginal impacts to the stocks are considered in Amendments 93 and 97 to the GOA Groundfish FMP. In most other Alaska communities, the scope of overall impacts anticipated to result from any of the management alternatives would likely not be discernible.

3.5 Impacts of Alternative 1 – No Action

Alternative 1, the no action alternative, would maintain the existing management structure, wherein Chinook salmon PCS may only be reapportioned from the Rockfish Program CV sector to the non-Rockfish Program CV sector on October 1 and November 15. Even then, a rollover could only occur if there is residual Chinook salmon PSC allowance in the Rockfish Program CV sector. If NMFS determines that more than 150 Chinook salmon are available in the Rockfish Program CV sector on October 1, any Chinook salmon PSC allowance above that amount can be reapportioned to the non-Rockfish Program CV sector. When the Rockfish Program season ends on November 15, the balance of remaining the Rockfish Program CV sector's Chinook PSC allowance is reapportioned to the non-Rockfish Program CV sector.

The information provided in Section 3.4.1.3.3 (Rockfish Program CV sector Chinook PSC) generally suggests that the Amendment 97 rollover will be available in some years; however, the amount of that rollover is unpredictable and it is highly likely that, due to the variable nature of Chinook PSC levels, a rollover will *not* occur in every year. In 2015, the first in which Amendment 97 and the rollover were implemented, was atypical in two respects. First, in August the non-Rockfish Program CV sector received an additional 1,600 Chinook salmon PSC through the Emergency Rule. Because of this large addition to the non-Rockfish Program CV sector's PSC limit, very little of which was used, NMFS inseason managers did not go through the process of making the rollover reapportionment and providing written notice. Second, as noted in Section 3.4.1.3.3, the Rockfish Program CV sector experienced a lightning-strike PSC event at the very end of the season that pushed the sector's PSC level from well below the cap to well above it. This analysis does not indicate that a rollover from the Rockfish Program should be expected in every year under status quo management, and that event underscores that fact. In any event, absent future Emergency Rule actions, NMFS will make the October 1 and November 15 reapportionments in future years. Because the Rockfish Program rollover has not yet been utilized, there is no historical trend by which to estimate the expected size of an annual rollover for the fall non-Rockfish Program CV sector. The analysis prepared for Amendment 97 examined historical data on Chinook salmon PSC in the Rockfish Program CV sector, and concluded that an October 1 rollover would have occurred in five of the six years from 2007 through 2012. The largest of those rollovers would have been 682 Chinook salmon PSC, and the smallest would have been 85 Chinook salmon PSC.²⁵ The Amendment 97 Rockfish Program rollover provides somewhat limited relief for a non-pollock trawl fishery that has been closed, given that no rollover would occur prior to October 1 and that the amount of the rollover is dependent upon PSC avoidance in the Rockfish Program fishery. Moreover, after deducting any overage from the PSC event that caused the closure of the non-Rockfish Program sector, NMFS would then need to estimate effort in that sector to determine if the anticipated rollover amount is sufficient to reopen the non-pollock fishery at all.

In past years, the majority of Chinook salmon PSC has been taken in the Central GOA, in part due to greater overall effort levels in that area. During 2015, more than one-third of the PSC was taken in the Western GOA. The reason for this deviation from the historical trend is unknown, but may be related to a number of factors: changes in observer coverage, changes in fishing patterns, or a greater number of Chinook salmon in the area. Together these factors resulted in the GOA Chinook salmon PSC limit for the non-Rockfish Program CV sector being exceeded, and the closure of the fishery on May 3, 2015.

In preparing an RIR for the Emergency Rule to reopen the GOA non-Rockfish Program CV sector, NMFS estimated that the May 2015 closure would have prevented the harvest of 13,000 mt to 15,000 mt of groundfish over the remainder of the year. NMFS estimated that the forgone gross revenue from that closure would have been approximately \$4.6 million in ex-vessel value or \$11.3 million in first wholesale value. Based on information presented in Table 20, almost all of the forgone revenue impact would have been realized by the stakeholders who are reliant on the Central GOA non-pollock non-Rockfish Program CV fisheries. (These estimates are specific to the 2015 fishing year.)

²⁵ It is important to remember that those retrospective figures are not a reliable indicator of the rollover amount in any given future year; Chinook salmon PSC levels are highly variable from year to year, and those data come from years when the Rockfish Program CV sector was not fishing under a Chinook hard cap (meaning that the sector might have been more concerned with actively avoiding halibut PSC, rather than Chinook salmon PSC).

Assuming that skippers and crew members are paid roughly 40 percent of the gross ex-vessel value of the catch (NMFS 2015), crew members working on CVs that deliver to Kodiak could have lost approximately \$1.8 million in pre-tax income. No equivalent estimate of economic impacts accruing to uses and users of Chinook salmon lost to PSC can be made, given current data.

In the absence of an Emergency Rule, groundfish processors would have lost approximately \$11.3 million in first wholesale gross revenue. These reductions would primarily be distributed among the 13 groundfish processors in the Kodiak Borough (NPFMC 2014). The reduction in trawl deliveries would have also impacted plant workers. Workers were laid off when the closure was implemented. A significant proportion of the Kodiak processing workforce is made up of permanent residents. Those individuals realized some loss of income, and that loss would have been greater if the Emergency Rule had not allowed the fall non-pollock trawl fisheries to reopen. While Kodiak plants – with their relatively higher proportion of resident workers – may incur fewer expenses related to employee room and board, they are adversely affected by unpredictable temporary shut-downs that reduce workforce morale, community stability, and the operators' ability to retain quality long-term employees.

The Kodiak Island Borough Shore-Based Raw Fish Severance Tax is set at 1.075 percent of ex-vessel value. Assuming the forgone revenue calculated in the Emergency Rule (\$4.6 million) would have all been sold to processors within the Kodiak Borough, the forgone borough tax revenue would have been about \$50,000. This represents roughly 3 percent of the Raw Fish Severance Tax²⁶ that was collected in 2014.

Because Chinook salmon PSC levels are difficult to predict, it is not assumed that 2015 PSC rates and conditions will typify the fishery in all future years. The analysts noted previously that Chinook salmon PSC was at a much higher level in the Western GOA compared to past years.²⁷ It is anticipated that harvesters would adopt strategies to reduce the likelihood of similar PSC closures in the future. Operators might increase their communication with one another, or become more willing to enact voluntary stand-downs when PSC rates are high. Nevertheless, the unpredictable nature of Chinook salmon encounter would suggest that sectors will approach or exceed their PSC limits in some future years.

Since 2015 is the first year that the GOA non-Rockfish Program CV sector is fishing under the Amendment 97 non-pollock Chinook salmon PSC limits, there is little empirical information upon which to base an estimate of how often and how early in the year the fishery might be closed. The closure that occurred on May 3, 2015, fell near the earliest anticipated closure date that was considered in the Amendment 97 impact analysis, so the impacts described in the RIR for the 2015 Emergency Rule could be considered a reasonable analogue for the “worst case” scenario for a future closure to that sector. When Amendment 97 was implemented, the Council acknowledged that the apportionment to the non-Rockfish Program CVs had the potential to be the most limiting of any Chinook PSC apportionments. The allotment of 2,700 Chinook salmon was close to the long-term historical average PSC use in that sector, and the limit was exceeded in roughly half of the years that were used as a basis to establish the limit. The Council recommended a limit

²⁶ <http://www.kodiakak.us/DocumentCenter/View/7113>

²⁷ Note that observer coverage was very limited in the Western GOA in past years, and no observer data were available for the less than 100-foot length overall trawl vessels. Until the observer program was restructured, that fleet was exempt from observer coverage.

that was close to the sector's historical average PSC use because the sector does not operate under a catch share program, and the limit was intended to incentivize maximum effort to avoid Chinook salmon.

Participants in the Central GOA non-pollock trawl fishery have worked to develop voluntary cooperative structures, often out of necessity, so that the fishery could be prosecuted in a coordinated manner. The Kodiak-based CV fleet has developed temporary voluntary agreements for the purposes of minimizing PSC during high-encounter periods and to moderate effort as a seasonal TAC limit is approaching. In some cases, these efforts have had limited success because it is not possible to limit effort by vessels that are not willing to abide by voluntary, non-binding agreements.²⁸ When vessels break with the voluntary cooperative fishing plan, cooperative participants have a reduced incentive to limit their effort or maintain a stand-down. Voluntary management measures have often been a challenge in Regulatory Area 620 because that area can be feasibly prosecuted by participants that home-port in either the Western or the Central GOA. These challenges are among the reasons the Council is currently considering development of a "GOA Trawl Bycatch Management Program," which, in its current form, would establish a formal cooperative structure for both the pollock and non-pollock trawl fisheries.

If Chinook salmon PSC limits constrain groundfish harvest on a consistent annual basis, the Council and NMFS might determine that it is appropriate to review the limits established by Amendment 97 to determine whether they are practicable and consistent with National Standards 1 and 9. National Standard 1 states that conservation and management measures shall prevent overfishing while achieving optimum yield on a continuing basis. National Standard 9 states that management measures shall, to the extent practicable, minimize bycatch and, to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

3.6 Impacts of Alternative 2 – Allow Inseason Reapportionment

Alternative 2 would provide regulatory authority for NMFS to make inseason reapportionments of GOA Chinook salmon PSC that is projected to be surplus to the needs of the sector to which it was initially apportioned under Amendments 93 and 97. Chinook salmon PSC could be moved to another sector that is facing a PSC limit constraint. Multiple reapportionments could be made in the course of a single year, and NMFS would have the ability to move Chinook PSC back to the sector from which it was previously reapportioned, if that fishery were to face an unexpected constraint later in the year and residual PSC was available. NMFS would not expect to take the latter action described, as inseason managers would exercise caution in reapportioning PSC from a sector in which a later constraint might occur. The GOA trawl sectors affected by this action would be the directed pollock fishery (CVs), Rockfish Program CVs, non-Rockfish Program CVs, and non-Rockfish Program CPs. The Amendment 97 provision that creates an inseason rollover from the Rockfish Program CV sector to the non-Rockfish Program CV sector would not be modified under this action. Four of the five options under Alternative 2, would limit the scope of NMFS's authority to reapportion Chinook salmon PSC to or from specific GOA trawl sectors, or would limit the maximum amount that can be reapportioned. The other option (Option 4) would provide NMFS with flexibility in deciding whether or not to make the October 1 rollover from the Rockfish Program CV sector to non-Rockfish Program CVs, as is currently required under Amendment 97.

²⁸ Industry-led catch sharing plans in the Central GOA have failed in the past due to outside effort. The Area 620 pollock fishery in 2012 ("C" season) and 2013 ("D" season) were thought to have resulted in higher Chinook PSC when the catch share plan fell apart (J. Bonney. 2015. Alaska Groundfish Data Bank. Pers. Comm.).

Unlike many of the allocation decisions that the Council and NMFS face, the reapportionment of Chinook salmon PSC is not expected to have negative impacts on any group of groundfish harvesters. It may result in additional negative impacts on Chinook salmon users, however, by increasing the likelihood that additional Chinook PSC will be incurred. This action would allow some of the overall GOA Chinook salmon PSC limit that has been set in regulation (32,500 Chinook salmon per year) to be reapportioned from a sector with a projected “underage” of PSC, to a sector that is constrained by reaching or exceeding its Chinook PSC limit. If the sector from which the reapportionment was made subsequently needs additional Chinook PSC, further reapportionments could be made later in the year. If no sector is determined to have residual Chinook salmon PSC available under the limit that is set for it in regulation, a sector that has reached its limit would not receive an inseason reapportionment and would be closed to directed fishing. As noted in Sections 3.4.1.5 and 3.4.1.6, GOA trawl sectors should not anticipate relief from constraining PSC limits through future Emergency Rule actions.

The proposed action could, to an extent, reduce groundfish fishermen’s uncertainty regarding their ability to prosecute trawl fisheries under the existing PSC limits. The likelihood of a fishery closure could be reduced under this action. However, participants in one sector might be concerned about some of their initial PSC limit being reapportioned to another sector in which they do not participate. That concern would stem from the risk that the fisheries in which they participate might experience unexpectedly high PSC levels later in the year, after a reapportionment *from* their sector has been made and those Chinook PSC amounts have been consumed. Such a scenario would not necessarily constitute a pure benefit transfer, as many individuals participate in more than one of the sectors defined in this analysis. For example, many Central GOA CVs trawl for pollock, participate in a Rockfish Program cooperative, and also prosecute GOA non-pollock fisheries throughout the year. One user group that might be the most concerned about reapportionments from their sector would be Central GOA CVs that have a high dependency on the directed pollock fishery and, thus, would receive no benefit from a reapportionment to the non-pollock fisheries. That said, most CVs that fish GOA pollock in the C and D seasons are also active in other GOA trawl sectors. Pollock vessels that tend to focus on the early-season fisheries (A and B seasons) would be less exposed to the impact of a PSC closure that occurred mid-year.

This analysis does not attempt to forecast the actual amount of Chinook salmon PSC that might need to be reapportioned to a given sector. Quantitative impacts are, at this stage, limited to the example of the 2015 non-Rockfish Program CV closure as an example of a high-impact scenario. The process that NMFS Inseason Management would use to determine the necessary and available reapportionment amounts is described in Section 3.4.1.4. Based on that process, the number of Chinook salmon that would need to be reapportioned will vary annually, and by sector, depending on factors such as effort, projected PSC rates, and the amount of TAC remaining in the fishery or season. Inseason managers will synthesize that information and use professional judgment to determine the amount of Chinook salmon PSC to reapportion. Based on the uncertainty associated with a sector’s PSC demand over the remainder of a year, Inseason Management is expected to take a conservative approach that minimizes potential adverse impacts on the sector from which initial PSC apportionments were made. NMFS staff will engage sector participants and representatives directly in order to understand their anticipated fishing patterns and effort. The most vulnerable set of stakeholders among the groundfish fishing sectors would likely be individual harvesters that participate in the sector that is “funding” the reapportionment, but do not participate in the fishery that receives the Chinook PSC reapportionment. For example, Western GOA pollock participants are less likely

to benefit from PSC being reapportioned from the pollock sector to the non-Rockfish Program CV sector, since the latter fishery is primarily prosecuted by trawl vessels based in the Central GOA. Those Western GOA participants tend to have less financial dependency upon Federal fisheries later in the year, after a reapportionment would have occurred. Nevertheless, Western GOA trawlers might view inseason reapportionments as a constraint on or a barrier to their ability to increase effort in fisheries that occur after March.

Options that provide the most flexibility are likely to result in the greatest opportunity for this action to achieve the goals defined in the Purpose and Need statement (Section 1.2). Increased flexibility to access Chinook salmon PSC from various apportionments allows NMFS Inseason Management to determine the best course of action to facilitate the achievement of GOA groundfish TAC. If it appears that a sector is not acting in a manner consistent with the overall goals and objectives of the FMP, agency staff would have the option of not reapportioning Chinook salmon PSC, and allowing a fishery to close under the hard cap. Under Alternative 2, NMFS staff must determine:

- When sufficient Chinook salmon PSC limit amounts are available to be reapportioned, based on the anticipated effort in the fisheries;
- When fisheries are anticipated to reach their Chinook salmon PSC limit, and how much additional Chinook salmon PSC is needed to keep the fishery open; and
- Whether it is appropriate to reapportion Chinook salmon to a particular sector, based on its fishing behavior, and the steps that the sector has taken to minimize PSC usage to the extent practicable.

Based on the 2015 fishing year, NMFS determined that an increased threshold of 1,600 Chinook salmon was necessary to reopen the GOA non-Rockfish Program CV trawl fisheries. Because the closure occurred early in the fishing year, that amount of Chinook salmon PSC is used as a benchmark for the amount of Chinook salmon that might need to be reapportioned in a future year. While this amount is used as the benchmark in this discussion, it is acknowledged that future reapportionments may differ from this amount; sufficient data to generate reliable estimates are not currently available; even with a longer time series of fishing under Chinook salmon PSC hard caps, forecasting the need for reapportionments would require a large confidence interval, given the well-known annual variability in PSC levels. Nevertheless, additional years of data fishing under the new hard caps, and the restructured Observer Program would contribute to better estimates in a marginal sense. It is also difficult to predict how TACs will change in the future. Higher TACs, especially in the pollock and Pacific cod trawl fisheries, could impact the amount of Chinook salmon PSC allowances that are used in the pollock and the non-pollock fisheries. Pollock TACs have been increasing in recent years, and the increased effort required to harvest those fish could result in more Chinook salmon being taken, even if Chinook PSC rates per ton of pollock remain similar to the levels observed prior to the TAC increase.

Existing Chinook salmon PSC apportionments and data on historical PSC use would suggest that reapportionments between non-pollock CVs and non-pollock CPs are unlikely to provide substantial benefits most years. Table 3 shows that in years that the CV or CP sector would benefit from a reapportionment of Chinook salmon PSC, the other sector was unlikely to have residual Chinook PSC allowance amounts that would meet the constrained sector's needs. In years that one sector did have

sufficient residual Chinook salmon PSC to provide an inseason reapportionment, the other sector was not constrained by its PSC limit.

Reapportionments between the pollock fishery and the non-Rockfish Program CV sector would primarily benefit the non-pollock sector. Since Amendment 93 went into effect in 2012, the Chinook PSC apportionment to the pollock fishery has been sufficient to allow the fishery to remain open as long as TAC is available and one of the four seasons is open for directed fishing. Looking at historical data, including years prior to the implementation of Amendment 93, the pollock fishery took at least 8,000 fewer Chinook salmon than the 25,000 fish limit in every year except 2010. The Inshore pollock fishery reached the cap level in 2010 primarily because of one week when exceptionally high Chinook PSC was recorded; had that week been an “average” week, the PSC limit would not have been constraining in that year. Therefore, it seems likely that the GOA pollock sector would be able to provide at least an allowance of 1,600 Chinook salmon PSC to the non-Rockfish Program CV sector most years. Recall that 1,600 Chinook salmon was the amount deemed necessary to reopen the fall non-pollock fishery for 2015 (via the Emergency Rule), and that level is assumed to represent a high annual level of demand for additional Chinook salmon PSC in the non-Rockfish Program CV sector.

As discussed under Alternative 1, reapportionments from the Rockfish Program CV sector to the non-Rockfish Program CV sector are not currently available until October 1. Because this is the first year of the program, the Council has limited information about the nature of potential future reapportionments from that fishery. As noted in Section 3.4.1.3.3, no such reapportionment was made in 2015 due to low use of the 1,600 Chinook made available through the Emergency Rule and a late-season PSC event in the Rockfish Program sector. Nevertheless, it is worth considering that a small rollover (as defined under Amendment 97) might not provide significant relief to the community of Kodiak, Central GOA processors, and the Central GOA non-pollock CV fleet. A rollover of around several hundred Chinook PSC might not be sufficient to reopen a closed fall non-pollock fishery, or might not be enough to fully harvest the available Pacific cod B season TAC.²⁹ Future reapportionments from the Rockfish Program might provide a buffer against reaching the Chinook salmon limit, but it is unlikely that reapportionments from the Rockfish Program, alone, would provide complete relief to Central GOA stakeholders in the case of an early season closure of the non-Rockfish Program CV sector. Recall, also, that rollovers from the Rockfish Program would first be debited to cover any Chinook PSC overage that occurred in the non-pollock sector if that fishery had been closed. “Rollover PSC” would only be made available to support Pacific cod and flatfish fisheries after covering any such overage.

While recent data indicate that the Western GOA pollock fishery has been well under its Chinook salmon PSC limit, that sector has had difficulty harvesting the entire Area 610 pollock TAC in recent years. The underharvest of Western GOA pollock has been attributed, anecdotally, to difficulty finding fish that are aggregated in large schools. When pollock are more difficult to catch, harvesters may spend more time towing their nets through the water, which could result in higher PSC rates. Though uncertain, it is possible that increased abundance of harvestable pollock could increase Chinook salmon PSC. More abundant pollock would require relatively shorter tows to fill the codends. However, even if rates of Chinook PSC

²⁹ For reference, when this document was prepared for preliminary review in October 2015 (prior to the late-year Rockfish Program sector PSC event), NMFS inseason managers were projecting a rollover of approximately 275 Chinook PSC.

per ton of pollock are lower, increasing the total pollock catch might increase the gross number of Chinook salmon PSC. The uncertainty associated with annual Chinook salmon PSC rates makes it difficult to project catch into the future. Options that allow NMFS Inseason managers to review the fishery during the year and make projections based on observed fishery conditions are more reliable for determining the appropriate timing and amount of reapportionments. Should a difference in relative PSC demand develop between the Western and Central GOA pollock fisheries – each of which has a separate PSC limit under Amendment 93 – Alternative 2 would allow NMFS inseason managers to make reapportionments between those area-defined limits as if they were distinct sectors.³⁰

The analysts assume that the “uncertainty pool” buffer from Amendment 97 is not affected by this action. The calculation of the buffer will still be based on PSC performance relative to the eligible sectors’ initial apportionments (2,700 Chinook salmon for the non-Rockfish Program CV sector, or 3,600 Chinook salmon for the CP sector). If the aggregate Chinook salmon PSC taken by vessels operating in the non-Rockfish Program sector is less than 2,340 Chinook salmon, the sector would fish under a total apportionment of 3,060 Chinook salmon in the following year.³¹ This buffer essentially makes a limited amount of past PSC savings available for use in the following year, if unusually high PSC rates occur. The amount of Chinook PSC in the “buffer” would be less than or equal to the number of salmon avoided during the previous year – relative to the base PSC limit – so there is no possibility that average annual PSC in the sector would exceed 2,700. In that sense, the buffer does not exceed the upper limit of adverse effects on the Chinook salmon resource established by the Council; provides the fleet with flexibility in some instances; and, most importantly, keeps the fleet focused on achieving Chinook PSC levels that outperform the maximum amount allowed. To the latter point, a sector’s PSC avoidance efforts might benefit that sector in the future in the form of an earned “insurance” policy against the impacts of a year of abnormally high PSC encounter. As noted throughout the analyses supporting Amendment 97, Chinook salmon PSC is known to be highly variable, and not all of the factors that result in a high-encounter year can be perfectly controlled by the harvest sector.

Because NMFS must determine the availability and size of any Chinook salmon PSC reapportionment, the agency would need to consider possible tensions that a reapportionment could create between vessels that fish only for early-season pollock and Pacific cod, and vessels that also fish pollock, Pacific cod, or flatfish later in the year. Flatfish and Pacific cod fisheries are not only limited by Chinook salmon PSC, but also by TACs and halibut PSC. NMFS would need to consider the fact that reapportioning Chinook salmon to support a flatfish fishery might not be an efficient use in every case – or might not be worth the risk of causing a closure in the fishery from which the PSC was taken – because that flatfish fishery is likely to also be constrained by halibut PSC.

During years in which a constrained sector receives a Chinook salmon PSC reapportionment, the flexibility provided by Alternative 2 will likely increase the aggregate amount of Chinook salmon that are taken across all GOA trawl fisheries, relative to Alternative 1. Despite the potential increase in the number of Chinook salmon PSC taken in GOA trawl fisheries under Alternative 2, current Chinook salmon PSC regulations

³⁰ The Council spoke to this clarification at its October 2015 meeting.

³¹ For the CP sector, the performance threshold is 3,120 Chinook salmon, and the size of the buffer is 480. If the CP sector meets the performance threshold in one year, then its effective PSC limit for the following year would be 4,080 Chinook salmon.

encourage trawl operators to minimize Chinook PSC to the extent practicable. Note that this action would maintain the uncertainty pool buffer, so both the non-Rockfish Program CV sector and the CP sector continue to operate under an incentive to avoid PSC to at least a certain threshold. Moreover, having stated that reapportionments would not be made *from* a sector if that reapportionment would jeopardize the sector's ability to harvest its available TACs, the analysts would not expect any sector to feel that they must "use or lose" their initial total Chinook salmon apportionment by fishing harder, and at potentially higher PSC rates, earlier in the year.

Any marginal PSC increase should be evaluated in light of the 32,500 Chinook salmon hard cap that covers all GOA groundfish trawl fisheries. The EAs prepared for Amendments 93 and 97 analyze the impacts of the Chinook salmon PSC limits on Chinook salmon stocks from all regions of origin. The most recent available work on identification of genetic origin for Chinook salmon taken as PSC provides a similar picture of the regions of origin to what was analyzed and presented in the EAs for Amendments 93 and 97. The State of Alaska collected and analyzed 2,029 Chinook salmon PSC samples; those samples indicated that the U.S. West Coast stocks (Washington/Oregon/California) made up the largest portion of Chinook PSC taken in that GOA fishery (60 percent), with smaller contributions by stocks from British Columbia (31 percent), Coastal Southeast Alaska (6 percent), and the Northwest GOA (2 percent) (Guyon 2015). Genetic samples were also taken during the 2013 GOA arrowtooth flounder trawl fishery. Of the 279 samples taken, sampled PSC came from the U.S. West Coast (43 percent), British Columbia (39 percent), Coastal Southeast Alaska (14 percent), and Northwest GOA (3 percent) stocks (*ibid.*). Finally, the Guyon study also sampled Chinook salmon from an April 2013 haul that used a salmon excluder device in the Shelikof Strait near Kodiak Island. The stock composition of Chinook salmon PSC from that haul showed that the majority of those 95 Chinook salmon originated from the U.S. West Coast (79 percent), British Columbia (17 percent), and Coastal Southeast Alaska (3 percent).

Regardless of their stock of origin, Chinook salmon PSC must be avoided to the extent practicable under the general provisions of National Standard 9 and, more specifically, under the requirements of the BSAI and GOA Groundfish FMPs. Lower PSC levels benefit directed salmon fishery users (commercial, tribal, subsistence, and hatchery), as well as consumers of Chinook salmon. The proposed action is expected to slightly increase the number of Chinook salmon taken as PSC in years when reapportionments occur. It is known that Chinook salmon are highly valued by commercial salmon harvesters, sport fishermen, subsistence users, species that prey upon salmon (including ESA-listed species such as Puget Sound Southern Resident killer whales, Cook Inlet beluga whales, Western Aleutian Steller sea lions), and salmon stocks that are protected under the ESA and prioritized for conservation and recovery. However, the analysts cannot forecast the change in the number of Chinook salmon that would accrue to each user group as a result of this action.

However, the analysts conclude that under Alternative 2 the impact on the U.S. West Coast stocks would fall within the limits outlined in the 2007 supplemental biological opinion and the potential impact on the Alaska Chinook salmon resource. Also, genetic studies suggest that impacts on Chinook salmon stocks bound for Alaska river systems would be relatively small (one might expect that fewer than 300 of those fish would have originated in Alaska, based on the Emergency Rule). Impacts would only be realized in years when a reapportionment occurs. Those years the magnitude of the impact is proportionate to the number of reapportioned Chinook salmon taken as PSC in the trawl fishery. That number cannot be

projected because of the variability in Chinook salmon PSC taken in the trawl fisheries on an annual basis as discussed in Amendments 93 and 97 to the GOA Groundfish FMP. Impacts on Canadian stocks may also occur since some fish were determined to originate there.

The Council considered five different options that could be selected under Alternative 2. Each option is described in Section 2 of this document:

Selecting **Option 1** would allow NMFS to reapportion Chinook salmon PSC only between the GOA Inshore pollock sector and the non-Rockfish Program CV sector.³² As discussed above, this option would limit NMFS's flexibility to reapportion Chinook salmon from other fisheries (i.e., the Rockfish Program CV sector and the CP sector). The primary beneficiary of this option would be the non-Rockfish Program CVs. Based on historical performance and the size of the non-Rockfish Program CV sector's PSC limit relative to its expected use, it is unlikely that Chinook salmon PSC could be reapportioned from that sector to the pollock fishery in most years. Moreover, given the small size of the non-pollock sector's PSC apportionment, relative to that of the pollock fishery, any reapportionment that was available to the pollock fishery would provide a relatively small marginal benefit. Moreover, any PSC reapportionment to the pollock fishery might have to be divided between the Western and Central GOA pollock sectors if both areas were projected to exceed their limits. NMFS would likely determine the relative size of the reapportionments to those sectors based on expected effort.

The Chinook salmon PSC that would not be available for reapportionment under Option 1 relative to Alternative 2 (with no option selected) – i.e., PSC that is initially apportioned to the Rockfish Program CV sector and the CP sector – is expected to have little impact most years. Nevertheless, NMFS has indicated that it anticipates the possibility of making multiple small reapportionments throughout a PSC-constrained year. During some years, depending on the availability of residual Chinook PSC allowance amounts in the GOA pollock fishery, those small reapportionments could be important to a constrained non-Rockfish Program CV sector.

Recent experience in the Rockfish Program CV sector, as described in Section 3.4.1.3.3, underscores the unpredictability of Chinook salmon PSC encounters. While historical observation of that sector leading up to the implementation of Amendment 97 suggested a low probability of reaching that sector's annual Chinook PSC limit, such events cannot be ruled out. Selection Option 1 would mean that the Rockfish Program CV sector could not receive any benefit from the flexibilities afforded under Alternative 2.

Selecting **Option 2** would not limit the sectors from which Chinook salmon PSC could be reapportioned, nor would it limit the sectors that could receive an inseason reapportionment. Rather, this option would limit the amount of Chinook salmon PSC that could be reapportioned from any given sector, over the course of a year, to no more than 10 percent, 20 percent, or 30 percent of that sector's initial annual Chinook PSC apportionment. Table 22 shows the maximum number of Chinook salmon that could be reapportioned from the Inshore pollock fishery PSC limit. Presuming that the most likely reapportionment would flow from the pollock fishery, any of the three suboptions would allow up to (and beyond) 1,600 fish to be reapportioned.

³² This option includes the ability to reapportion Chinook salmon PSC between the Western GOA and Central GOA pollock fisheries' area-based PSC limits, as would be the case if Alternative 2 was selected without any of the options.

The Council clarified that the suboptions apply at the area-level for the GOA pollock sector, meaning that there are two scenarios where the straw-man reapportionment target of 1,600 Chinook PSC could not be reapportioned from the pollock fishery. Those scenarios would occur when the Central GOA pollock fishery does not have any excess Chinook PSC and the Council has selected the 10 percent or 20 percent reapportionment cap suboption; in that case, only up to 668 or 1,337 Chinook PSC would be available for reapportionment from the Western GOA pollock fishery to the non-Rockfish Program CV sector.

Table 22 Reapportionment limits of 10 percent, 20 percent, or 30 percent of the Inshore pollock fishery Chinook salmon PSC limit

	CG	WG	GOA Total
Status Quo Limits	18,316	6,684	25,000
10% reapportionment limit	1,832	668	2,500
20% reapportionment limit	3,663	1,337	5,000
30% reapportionment limit	5,495	2,005	7,500

Table 23 reports the maximum number of Chinook salmon that could be reapportioned from either the non-Rockfish Program CV sector or the CP sector under each of the three suboptions. The limits from the CV sector result in a maximum reapportionment of 810 Chinook salmon PSC. The CP sector apportionment is larger, so the maximum number of Chinook salmon that could be reapportioned from that sector is 1,080 Chinook salmon. It is assumed that the Rockfish Program reapportionment rules would not be changed under this action, so the reapportionment from that sector is limited by the initial apportionment to that sector, because any Chinook PSC remaining in the sector when the fishery closes is rolled over to the non-Rockfish Program CV sector. However, the timing of the PSC rollover depends on whether the Council selects Option 4 (discussed below). If the Council selected *only* Option 2, as many as 1,050 Chinook salmon could be rolled over from the Rockfish Program CV sector on October 1 (assuming the sector had not encountered any PSC up to that point). While unlikely, 1,050 Chinook salmon PSC represents 87.5 percent of the sector’s initial apportionment of 1,200 fish.

As stated earlier, it is unlikely that PSC would be reapportioned from CVs to CPs because in historical years during which one sector would have been constrained by the PSC, both sectors have been close to their limit. Based on historical data, neither the pollock fishery nor the Rockfish Program CV sector is expected to require additional Chinook PSC in most years (noting that the experience in the 2015 Rockfish Program CV sector illustrates the analysts’ inability to make probabilistic forecasts). Nevertheless, those two sectors would be the more likely recipients of any possible reapportionment from the non-Rockfish Program CV sector.

Table 23 Reapportionment limits of 10 percent, 20 percent, or 30 percent of the non-Rockfish Program CV sector Chinook salmon PSC limit

Non-pollock fisheries	Non-pollock fisheries			Rockfish
	CV	CP	Total	Program
Status Quo Limits	2,700	3,600	6,300	1,200
10% reapportionment limit	270	360	630	
20% reapportionment limit	540	720	1,260	
30% reapportionment limit	810	1,080	1,890	

There are two ways to consider the purpose of capping the amount of an initial PSC limit that can be reapportioned. The first conceivable purpose is to provide some level of protection for the sector that received the initial apportionment, and would see some of its Chinook salmon PSC allowance made available to another sector. Limiting the amount of Chinook salmon PSC allowance that may be reapportioned to another sector could provide some protection against reapportioning too much PSC early in the year, and not having enough Chinook salmon PSC allowance available at the end of the year. That potential negative outcome should be mitigated through NMFS's ability to reapportion Chinook back to the original sector, although there are transaction costs incurred. It is assumed that NMFS would take a precautionary approach when determining the needs of a sector to avoid this outcome. However, the uncertain nature of Chinook salmon PSC, as illustrated in the 2015 Rockfish Program CV sector, makes reapportionments difficult to determine with a high degree of certainty. NMFS staff have indicated that they foresee making several sequential reapportionments of small PSC amounts, rather than one large reapportionment of a size determined by the limited sector's anticipated PSC demand over the entire remainder of the year. That strategy should reduce the likelihood of large reapportionments flowing out of, and subsequently back into, a given sector. Small apportionments will allow NMFS staff to gather more information regarding the characteristics of that year's fishery, as it becomes available to managers. The characteristics of both sectors involved in a reapportionment are likely to change over the course of the season, as projected effort levels and the amount TAC remaining decline.

The second conceivable purpose would be to limit the maximum amount of Chinook salmon PSC that a sector may receive. Allowing large reapportionments to one sector might undermine the Council's intent in capping that sector at a certain level of imposed PSC waste in the first place. Even with a 10 percent reapportionment limit, the non-Rockfish Program CV sector could receive allowances of over 3,000 Chinook salmon PSC from all other sectors, combined; that would more than double the sector's annual Chinook PSC allowance. Accordingly, allowing maximum reapportionments could undermine the fleet's incentive to maintain an aggregate PSC level of fewer than 32,500 Chinook salmon. The concept of setting a maximum reapportionment amount that can flow to any particular sector is addressed under Option 5, below. NMFS could make reapportionment decisions on a case-by-case basis, considering how much flexibility the Council intends each sector to have. The Council has also clarified that different limits can be specified on a sector-by-sector basis, governing what can flow into, or out of, the sector, in the proportion of a sector's initial PSC limit.

Option 3 would prohibit the reapportionment of surplus Chinook salmon PSC allowances from any CV sector to the non-pollock/non-Rockfish Program CP sector.³³ The principal impact of this option would be to limit the reapportionment of Chinook salmon PSC from the pollock fishery to the non-pollock CP sector. A secondary impact would be the prohibition of Chinook PSC reapportionments from the non-Rockfish Program CV sector to the CP sector. As stated above, the non-Rockfish Program CV sector does not typically have excess Chinook salmon PSC during years in which the CP sector would need to access more than its base-limit of 3,600 Chinook salmon.

³³ This assumes that, for the purpose of this action, the Council considers the GOA pollock fishery as a CV fishery. While this is generally true, as discussed in Section 3.4.2, there have been six CPs that have reported minimal landings in the inshore pollock fishery since 2010.

The trawl CPs that operate in the GOA are, for the most part, Amendment 80 vessels. With one exception, these vessels fish within a cooperative structure, and have the opportunity to share information and implement fishing plans to harvest within GOA sideboard and PSC limits.³⁴ Participation in GOA flatfish fisheries is limited to the F/V *Golden Fleece* and Amendment 80 vessels that are “flatfish exempt” (meaning that they are permitted to target GOA flatfish based on their participation levels prior to the implementation of Amendment 80). The F/V *Golden Fleece* “may not be used for directed groundfish fishing for northern rockfish, pelagic shelf rockfish, pollock, Pacific cod, or Pacific ocean perch in the GOA and in adjacent waters open by the State of Alaska for which it adopts a Federal fishing season [i.e., a parallel fishery]” (§ 679.92(d)(1)(i)). In recent years, four Amendment 80 CPs have harvested Central GOA flatfish (see Table 13). Those Amendment 80 vessels are members of the same cooperative, and have the opportunity to coordinate their fishing activity. Because those vessels have the opportunity to work within a cooperative structure to minimize Chinook salmon PSC, they are in a better position to stay within their PSC limit than are the CVs that fish under a limited access system. In addition to the flatfish CPs, seven other CPs fish for rockfish in the Western GOA (outside of the Rockfish Program). These vessels are also members of Amendment 80 cooperatives, and have the ability to coordinate their fishing activities to avoid Chinook salmon PSC. Given these factors, restricting Chinook salmon PSC reapportionments from the CV sector to the CP sector is not expected to have a significant impact on the ability of CPs to harvest the available TAC.

Option 4 would add flexibility to the existing “Rockfish Program rollover” provision, established under Amendment 97, which moves unused Chinook salmon PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector on October 1 and November 15 of each year. Existing regulations and the language in the GOA Groundfish FMP frame the October 1 rollover as something that must happen on that date. In other words, all but 150 of the residual allowance of Chinook salmon PSC in the Rockfish Program CV sector are rolled over on October 1, regardless of remaining effort or anticipated PSC levels in that fishery over the remainder of the Rockfish Program season. Selection of Option 4 provides the Regional Administrator with flexibility in two directions. NMFS Inseason Management could make additional Chinook PSC allowance amounts available to the non-Rockfish Program CV sector prior to October 1, or NMFS could hold back Rockfish Program Chinook PSC allowances until later in the year. Each of these tools could be useful depending on effort levels, remaining TAC, and PSC rates in the two affected sectors. Allowing NMFS to make the rollover earlier in the year provides for a situation where the Rockfish Program CQ is nearly fully harvested by October, and recognizes the fact that many Rockfish Program CV participants move from that fishery into the non-pollock fisheries once they have checked out of the Program. Allowing NMFS to use the best available data to delay a rollover recognizes that the Rockfish Program CV sector might prosecute its fishery differently from one year to the next. For example, Rockfish Program cooperatives might delay their effort until later in the year to avoid characteristically higher Chinook salmon PSC rates in the summer, or because Central GOA processors were busy with directed salmon fisheries and unable to process all of the Rockfish Program CQ until those fisheries closed. In any case, adding flexibility to this provision would not be expected to increase the total amount of Chinook salmon PSC that would be used, and would allow for variations and contingencies in the fisheries, in accordance with National Standard 6.

³⁴ The F/V *Golden Fleece* qualified as an Amendment 80 vessel, but opted out of the BSAI program because it primarily prosecutes GOA fisheries.

Option 5 would cap the amount of reapportioned Chinook salmon PSC that any sector could receive in a single year, relative to its initial apportionment. The Council included a suboption range of 10 percent to 50 percent of the sector’s initial apportionment; a different proportional cap could be selected for each sector. The purpose of Option 5 is to ensure that sectors continue to fish subject to effective (post-reapportionment) PSC limits that remain consistent with the spirit of the hard caps that were established under Amendments 93 and 97; those caps were set with regard to historical PSC levels and in light of public comment, not meant to be undone under Alternative 2 of this action. Table 24 shows each sector’s maximum PSC limits if Option 5 were selected, relative to the initial apportionments.

If Option 5 is not selected, the only other check on post-reapportionment PSC limits would be Option 2, which limits the amount of any given sector’s initial apportionment that can be moved to other sectors (in aggregate). Option 5 would not affect or limit the amount of Chinook salmon PSC that could be moved from the Rockfish Program CV sector to the non-Rockfish Program CV sector via the existing Rockfish Program rollover provision. The Rockfish Program rollover was established under Amendment 97 at the same time that the Council selected the initial PSC limit apportionments for those two sectors (1,200 Chinook and 2,700 Chinook, respectively). The simultaneity of those two decisions indicates that the Council does not intend to increase that rollover amount through this action.

Table 24 Maximum annual reapportionments and maximum effective Chinook salmon PSC limits under Option 5

Sector	Initial PSC Limit	Maximum Annual Reapportionment				
		10%	20%	30%	40%	50%
Pollock						
<i>Central GOA</i>	18,316	1,832	3,663	5,495	7,326	9,158
<i>Western GOA</i>	6,684	668	1,337	2,005	2,674	3,342
Total	25,000	2,500	5,000	7,500	10,000	12,500
Non-Pollock/Non-RP	2,700	270	540	810	1,080	1,350
Rockfish Program CV	1,200	120	240	360	480	600
Non-Pollock CP	3,600	360	720	1,080	1,440	1,800
Sector	Initial PSC Limit	PSC Limit Under Maximum Annual Reapportionment				
		10%	20%	30%	40%	50%
Pollock						
<i>Central GOA</i>	18,316	20,148	21,979	23,811	25,642	27,474
<i>Western GOA</i>	6,684	7,352	8,021	8,689	9,358	10,026
Total	25,000	27,500	30,000	32,500	35,000	37,500
Non-Pollock/Non-RP	2,700	2,970	3,240	3,510	3,780	4,050
Rockfish Program CV	1,200	1,320	1,440	1,560	1,680	1,800
Non-Pollock CP	3,600	3,960	4,320	4,680	5,040	5,400

Notes: Maximum non-Rockfish Program CV sector PSC limit does not include Rockfish Program Rollover PSC; Maximum non-Rockfish Program CV sector and non-pollock CP sector PSC limits do not include Amendment 97 “uncertainty buffer.”

Table 24 shows the difference between a sector’s initial annual PSC limit and the maximum effective PSC limit that would be applied as part of Alternative 2 Option 5. Summing across sectors for a given reapportionment cap (i.e., 10 percent, 20 percent, 30 percent, 40 percent and 50 percent) does not yield a realistic maximum effective GOA trawl PSC limit. It is not possible for all sectors to receive

reapportionments in the same year; in that case, no sector would be sufficiently below its initial PSC limit to provide other sectors with additional Chinook salmon PSC.

During its deliberations, the Council considered whether a percentage-based cap on PSC reapportionments should be applied before or after any carried “incentive buffer” (Amendment 97) from the previous year was taken into consideration. Table 25 shows the maximum reapportionment amounts that would be available to the CP sector and the non-Rockfish Program CV sector if their individual PSC performance had met the Amendment 97 threshold in the previous year. At final action, the Council clarified that Option 5 would not consider the buffer (see Section 2), meaning that the figures reported in Table 24 represent the maximum effective PSC limits under the preferred alternative.

Table 25 Maximum effective Chinook salmon PSC limits for sectors carrying an Uncertainty Buffer (Amendment 97) under Option 5

Sector	Initial PSC Limit	Uncertainty Buffer	Effective PSC Limit	PSC Limit Under Maximum Annual Reapportionment				
				10%	20%	30%	40%	50%
Non-Pollock/Non-RP CV	2,700	360	3,060	3,366	3,672	3,978	4,284	4,590
Non-Pollock CP	3,600	480	4,080	4,488	4,896	5,304	5,712	6,120

3.7 Summation of the Alternatives with Respect to Net Benefit to the Nation

This section does not attempt to calculate annual estimates of net benefits to the Nation for each alternative and option. Net economic benefits are the estimated difference in the sum of net present values of producer and consumer surpluses for each alternative, relative to the no action alternative. By that definition, net benefits to the Nation would not change under Alternative 1, the no action alternative. A sector would be closed to directed fishing when it reaches its annual Chinook salmon PSC limit. The only reapportionment that could occur under Alternative 1 is from the Rockfish Program CV sector on or after October 1, if sufficient Chinook salmon PSC allowances are available.

Alternative 2, the action alternative, would provide NMFS with greater flexibility to reapportion the existing GOA Chinook salmon PSC limit of 32,500 fish between sectors. The responsibility to reapportion Chinook salmon will require the Regional Administrator to consider the costs and benefits of each reapportionment on a case-by-case basis, using the best available data on projected effort, PSC rates, and remaining TAC. After the May 2015 closure to the non-Rockfish Program CV sector, NMFS’s estimated potential forgone gross revenues in that groundfish sector of approximately \$4.6 million in ex-vessel value and \$11.3 million in gross first wholesale value. Those values are not intended to represent producer surplus. However, the increase in gross revenue for those fisheries is likely to translate to increased net benefits for the groundfish harvesting and processor sectors, as well as the community of Kodiak, Alaska, and other non-fishing stakeholders. Consumer surplus is not estimated, but to the extent that marginally more products from these fisheries are sold to U.S. consumers, as a result of allowing PSC reapportionments, Alternative 2 is expected to increase net U.S. consumer surplus. These benefits would be somewhat mitigated by losses to directed Chinook salmon harvesters and processors,³⁵ as well as stakeholders in the commercial, recreational, and subsistence Chinook salmon fisheries, as well as U.S.

³⁵ Note that, in some cases, the harvesters and processors of groundfish and Chinook salmon are the same.

consumers of commercially harvested Chinook salmon. In addition, there remains an unaccounted for welfare loss accruing from any potential for increased mortality to ESA-listed or otherwise depleted Chinook stocks, attributable to expanded risk of PSC in GOA groundfish fisheries. While not readily amenable to estimation in the current context, ESA listing nonetheless implies a very significant risk of unrecoverable loss, requiring an immediate response. Acknowledgement of the risk of this potentially significant welfare loss is critical in weighing Chinook salmon PSC management options. In summation, NMFS's ability to make inseason reapportionments of Chinook salmon PSC allowance amounts is anticipated to increase total net benefits to the Nation, subject to the uncertainty of impacts to ESA-listed and otherwise threatened Chinook stocks. In the latter regard, the Council and NMFS have a responsibility to closely monitor this aspect of GOA Chinook PSC.

3.8 Council's Preferred Alternative

The Council selected a preferred alternative for this action in December 2015. As noted in Section 2, the preferred alternative is Alternative 2 (the action alternative), including Options 3, 4, and 5. Alternative 2 allows the NMFS Alaska Region Administrator, through inseason management, to reapportion unused Chinook salmon PSC between GOA trawl sectors. Options 3 and 5 each establish a constraint on the reapportionment of Chinook PSC. Option 3 prohibits Chinook PSC reapportionments from flowing from the CV trawl sectors to the CP trawl sector. Option 5 caps the amount of reapportioned Chinook PSC that any CV trawl sector may receive; the cap is set at the amount of Chinook PSC that equals 50 percent of that sector's basic initial annual PSC limit (as currently defined in regulation). Option 4 provides NMFS additional flexibility with regard to the timing and the amount of the previously established rollover of Chinook PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector.

The Council expressed its intent to strike a balance between two key factors: maintaining the conservation-based intents of Amendments 93 and 97, and providing flexibility for the management of GOA trawl sectors in the face of Chinook salmon PSC encounter levels that vary greatly and unpredictably on an annual basis. In providing the GOA trawl fleet with limited additional opportunities to harvest groundfish during years of high Chinook salmon PSC encounter, the Council emphasized that its preferred alternative would not jeopardize the efficacy of existing PSC limits that were set to prevent adverse impact on salmon species and particular stocks of conservation concern.³⁶ Moreover, the Council noted that its preferred alternative is not designed to provide preference to one particular trawl sector over another.

The Council clarified that its preferred alternative was selected with consideration of the impact of Chinook salmon PSC on all stocks, and not necessarily limited to ESA-listed stocks or stocks that return to spawn in Alaska waters. For this reason, the Council did not heavily weight information on the genetic stocks of origin of Chinook taken in GOA trawl fisheries, which has recently shown evidence that the salmon taken as PSC originate from a variety of Alaskan and non-Alaskan runs. The Council recognized that non-Alaska salmon runs – including those that are not ESA-listed – are important to a variety of U.S. stakeholders. Moreover, all Chinook salmon that are found at times in the GOA support Alaska's recreational, subsistence, and charter sport fishing sectors, and stakeholders that reside in some of the same communities that depend upon the groundfish trawl industry for their livelihood and culture.

³⁶ The preferred alternative would not allow for average annual Chinook salmon PSC in the GOA trawl fisheries to exceed the regulatory hard cap of 32,500 fish per year.

Regarding the ESA more generally, the Council stated that it relied upon ESA consultations on Chinook salmon, and on marine mammals that prey upon Chinook salmon, when setting the GOA trawl Chinook PSC limits in Amendments 93 and 97. The Council considers this action to be a minor adjustment to existing regulations, and so it has incorporated the description of those consultations and the Environmental Assessments here by reference.

Noting the annual variability in Chinook PSC levels across trawl sectors, this analysis does not attempt to project future PSC demand. The Council anticipates that, according to historical data, the pollock sector will be able to operate under its Chinook PSC cap in most years. On the other hand, Amendment 97 set the Chinook PSC limits for the non-pollock trawl sectors close to historical use levels; because of this, the Council acknowledges that those sectors are more likely to be constrained by Chinook salmon PSC in some years. The preferred alternative accords with National Standard 6 – allowing for variations among, and contingencies in, fisheries and catches – by creating a link between the PSC limits in sectors that are either more likely or less likely to be closed due to an unexpected and difficult to avoid PSC spike.

During its public deliberation in reaching a preferred alternative, the Council acknowledged that allowing PSC reapportionment to a sector that has reached its annual limit potentially raises the total (GOA-wide) level of Chinook PSC in that year, relative to the status quo. The Council articulated that this occasional trade-off is necessary in order to balance the National Standards. The Council noted that the adverse social and economic effects of an early fishery closure could be severe in GOA coastal communities that depend on the groundfish resource. The Council continued to note that existing PSC limits are set at levels that protect the Chinook salmon resource, and that measures to incentivize PSC minimization to the extent practicable are already in place (i.e., the Amendment 97 “uncertainty buffer”).

The Council articulated three factors that dispel the notion that sectors will drastically reduce their effort to avoid Chinook salmon as a result of this action. First, the preferred alternative does not guarantee that Chinook PSC reapportionments will necessarily be available in a given year. Chinook encounter levels are highly variable across years, and the years in which a sector reaches its PSC limit are likely to be years in which other GOA trawl sectors are experiencing similarly high Chinook PSC levels, thus, reducing the possibility of reapportionment actions. Second, NMFS Inseason managers would not necessarily make an immediate reapportionment to a closed sector, so while the preferred alternative could prevent a total season closure for a sector, the possibility that fishing opportunities might be forgone still exists. For example, the preferred alternative could have reopened the non-Rockfish Program CV sector after the closure that occurred on May 3, 2015, but the reapportionment might not have been made at the time that would have re-opened the late-spring flatfish fishery. Third, most reapportionments are likely to originate from the pollock sector, and most of that sector’s Chinook PSC occurs later in the year. Inseason managers would be less apt to make large PSC reapportionments from that sector, until they are satisfied that the sector has enough Chinook salmon allowance to meet projected PSC demand and fully prosecute its fishery.

The Council did not select Option 1, which would have precluded any Chinook PSC reapportionment from flowing to the Rockfish Program CV sector. Recent experience has shown that the Rockfish Program CV sector’s annual Chinook PSC limit of 1,200 fish is not significantly greater than the sector’s historical PSC levels that were used to set the cap under Amendment 97. Moreover, 1,200 Chinook salmon is a low enough number that a single isolated PSC event could, when folded into NMFS’s catch estimation procedure, close

the fishery. Such an event was observed in November 2015, as described in Section 3.4.1.3.3 of this document.

The Council did not select Option 2, which would have limited the amount of Chinook PSC that can be reapportioned *from* a given sector. The purpose of this option was to preserve the intent of the previous actions that set Chinook salmon PSC limits with respect to historical use and at levels that protect the resource (Amendments 93 and 97). In other words, the Council does not want to weaken the incentive for a sector to avoid Chinook salmon, by implying the opportunity exists to fish under an effective hard cap (post-reapportionment) that is significantly higher than what was previously agreed upon and established in regulation. However, the Council realized that capping reapportionment in terms of the sector that is “supplying” the excess Chinook PSC allowances could have the unintended effect of aiding one sector but not another; and the question of which sector receives the additional PSC would be answered somewhat arbitrarily, based upon the timing of when a PSC limit was reached. For example, this analysis suggests that the pollock trawl sector is the most likely to have Chinook PSC allowance amounts available for reapportionment to other sectors. Reapportionments from the pollock sector might be capped so that they total no more than 2,500 Chinook salmon (10 percent of 25,000). If the pollock sector uses fewer than 15,000 Chinook PSC – as it did in 2011, 2013, 2014, and 2015 – at least 10,000 Chinook could be available for reapportionment. One non-pollock sector might have reached its PSC limit early in the year, and received reapportioned Chinook PSC from the pollock sector that accounts for most of the pollock sector’s 2,500 fish reapportionment limit. There might not be enough remaining Chinook PSC allowance available for reapportionment from the pollock sector to reopen a second non-pollock sector, which might have actually gone to greater lengths to avoid PSC but was closed due to a late season “lightning strike” event. In short, the Council observed that the pollock sector is relatively “over-funded” with its Chinook PSC allowance, relative to other GOA trawl sectors, and capping reapportionment from the source-sector could create avoidable regulatory barriers that prevent the achievement of this action’s purpose and need. The Council does address the need to maintain the intents of Amendments 93 and 97, and did so by selection Option 5, which is described later in this section.

The Council selected Option 3, which prohibits the reapportionment of residual Chinook PSC allowances *to* the GOA trawl CP sector. In reaching this recommendation, the Council noted that the CP sector does not typically exceed its Amendment 97 hard cap level (only once since 2010), and that the sector is eligible to earn and carry forward additional Chinook PSC allowance amounts by meeting the Amendment 97 “uncertainty buffer,” which recent historical data suggest the sector will do in most years. The Council also emphasized the fact that all but one of the GOA trawl CPs are already affiliated with an Amendment 80 cooperative, thus, providing additional tools for that fleet to prosecute the available groundfish within its Chinook PSC limit.

The Council selected Option 4, which modifies the existing rollover of residual Chinook PSC from the Rockfish Program CV sector to the non-Rockfish Program CV sector on October 1. Previously, regulations were written such that the rollover was required to occur on that specified date, and that the amount of the rollover was predetermined (all but 150 of the Chinook PSC remaining in the Rockfish Program CV sector’s annual limit of 1,200 fish). This option gives NMFS discretion to make the rollover on a later date, or in a smaller or larger amount. The additional flexibility is consistent with the overall intent of this action, and with the other options selected. The Council noted the potential need to keep more Chinook salmon PSC in

the Rockfish Program CV sector, as future conditions might push effort in that fishery later into the season. Moreover, if the non-Rockfish Program CV sector has a sufficient amount of Chinook PSC allowance remaining in its annual apportionment on October 1, there could be little reason to place the Rockfish Program fishery in a position that is more exposed to closure upon a single PSC encounter. Finally, the Council noted that most of the vessels participating in the Rockfish Program CV sector also prosecute late-year non-pollock fisheries (Pacific cod and flatfish). Providing additional management flexibility decreases the likelihood that participants would have to forgo one part of their annual fishing portfolio for another.

The Council selected Option 5, which caps the amount of reapportioned Chinook PSC that a sector can receive in a single year. In contrast to Option 2, this option ties the percentage-based cap to the sector that would be receiving the reapportionment, thus, preserving the intents of Amendments 93 and 97 without unnecessarily limiting opportunities for other sectors to receive reapportionments (likely from the pollock sector). By capping reapportionments, the Council is balancing the flexibility goal of Alternative 2 with the PSC minimization directive of National Standard 9. Had the Council chosen not to select Option 5 (or Option 2), this action could decrease the incentive to avoid Chinook salmon to a much greater extent. During its final deliberation, the Council noted that under Option 5 the most likely “maximum reapportionment” that could occur in a year is 1,950 Chinook salmon. That conclusion is based on the assumption that reapportionments would be made from the pollock sector to the Rockfish Program CV sector and the non-Rockfish Program CV sector. With a 50 percent reapportionment cap, the Rockfish Program CV sector could receive up to 600 reapportioned Chinook PSC (50 percent of 1,200), and the non-Rockfish Program CV sector could receive up to 1,350 reapportioned Chinook PSC (50 percent of 2,700).³⁷ The Council noted that 1,950 Chinook salmon is equal to 6 percent of the total annual GOA trawl Chinook PSC limit (32,500 fish), though nothing in the preferred alternative would allow total Chinook PSC to exceed the GOA-wide aggregate cap. In speaking to its selection of the 50 percent reapportionment cap – as opposed to lower percentages that were considered – the Council highlighted the difficulty, if not impossibility, of identifying the precise minimum amount of PSC that each sector would need in order to keep operating and supporting its dependent stakeholders in all future years. The Council cited annual variability in PSC levels, the short-term shocks in estimated Chinook PSC that vary from the actual levels due to basket sampling estimates being extrapolated to the whole haul, and the unpredictable effects of environmental change and hatchery salmon releases on Chinook abundance in the GOA fishing areas.

In summation, the Council stated that its preferred alternative is particularly responsive to National Standards 1, 6, 8, and 9. Those standards, and the manner in which they are met by this action, are further described in Section 4.1 of this document.

³⁷ The Council clarified that these percentage-based caps are applied in reference to each sector’s base-PSC limit. In other words, the non-Rockfish Program CV sector’s reapportionment cap would be equal to 50% of 2,700 Chinook salmon, regardless of whether or not the sector is carrying an “uncertainty buffer” earned by meeting the PSC avoidance threshold in the previous year.

4 Magnuson-Stevens Act and FMP Considerations

4.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery and Conservation Act (Magnuson-Stevens Act). 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.

The alternatives and options included in this amendment package do not increase the amount of Chinook salmon PSC allowed in the GOA trawl fisheries. The considered action simply provides the Regional Administrator the flexibility to reapportion Chinook salmon PSC that is projected to be surplus to the needs in one groundfish trawl sector, to one or more other groundfish trawl sectors that would be closed to directed fishing before optimum yield can be achieved.

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

The information presented in this RIR is based on the best and most recent scientific information that is available to the analysts.

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.

This action does not change how the Chinook salmon resource is managed as a unit throughout its range.

National Standard 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such 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.

This action does not discriminate between residents of different states. Under the preferred alternative, Chinook salmon PSC would be reapportioned between sectors that have members who are residents of Alaska, as well as other states. The Regional Administrator will be tasked with ensuring that any reapportionments are fair and equitable to all fishermen, calculated to promote conservation, and carried out so that no particular individual, corporation, or other entity acquires an excessive share of the GOA trawl fishing opportunities.

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.

This action meets this National Standard. Providing flexibility within the established Chinook salmon PSC limits reduces the likelihood that directed fisheries will be closed before achieving optimum yield harvest levels, under the constraint of existing PSC limits that are already established in regulation.

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 flexibility to reapportion GOA Chinook salmon PSC allowance amounts is designed to account for variations among fisheries, fishery resources, and catches. The preferred alternative is particularly responsive to the annual variability in the PSC rates that are experienced within a given groundfish trawl fishery from year to year.

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

This action is designed to avoid unnecessary duplication of costs by providing the Regional Administrator the inseason authority to reapportion GOA Chinook salmon PSC allowance amounts that are surplus to the needs of the original recipient sector. This action does not include any unnecessary duplication of management and conservation measures.

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 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.

The purpose of this action is to avoid situations where the GOA trawl groundfish fisheries are closed to directed fishing due to excess Chinook salmon PSC. The importance of the GOA trawl fisheries and the fishery resources to the GOA fishing communities, especially Kodiak, are taken into account. The flexibility to reapportion Chinook salmon PSC allowance amounts is intended to provide sustained participation by these communities and minimize adverse economic impacts that would result from early closures.

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 does not change the Chinook salmon PSC limits that were set under Amendment 93 and Amendment 97 to the GOA Groundfish FMP. The action recognizes that fishing conditions change annually and that those changes impact how practical it is for a sector to stay under its Chinook salmon PSC limit. Providing the Regional Administrator the flexibility to reapportion PSC allowances between sectors

recognizes the difficult nature of avoiding Chinook salmon PSC under certain conditions, while not increasing the overall limit.

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

This action does not change the regulations that promote safety at sea. The analysts have not identified any unanticipated effects of the action alternative that would impair the safety of human life at sea, directly or indirectly.

4.2 Section 303(a)(9) Fisheries Impact Statement

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for, (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another regional fishery management council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The RIR/IRFA (NPFMC 215) prepared for this plan amendment constitutes the fishery impact statement. The likely effects of this action, including effects on fishery participants and fishing communities, are analyzed and described throughout the RIR/IRFA. The effects of this action on safety of human life at sea are evaluated in Section 4.1, under National Standard 10. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the GOA Groundfish FMP.

This action affects the groundfish fisheries in the EEZ off Alaska, which are under the jurisdiction of the Council. Impacts on participants in fisheries conducted in adjacent areas under the jurisdiction of other regional fishery management councils are not anticipated as a result of this action.

5 Preparers and Persons Consulted

Preparers

Darrell Brannan	NPFMC Contractor
Sam Cunningham	NPFMC
Dr. Lewis Queirolo	NMFS AKRO

Contributors

Michael Fey	AKFIN
Steve MacLean	NPFMC

Persons Consulted

Elizabeth Chilton	NMFS AKRO SF
Mary Furuness	NMFS AKRO SF
Brandee Gerke	NMFS AKRO SF
Gretchen Harrington	NMFS AKRO SF
Josh Keaton	NMFS AKRO SF
Glenn Merrill	NMFS AKRO SF
Jennifer Mondragon	NMFS AKRO SF
Jennifer Watson	NMFS AKRO SF
Julie Bonney	Alaska Groundfish Data Bank

6 References

- Alaska Fisheries Science Center (AFSC). 2015 Observer Sampling Manual. Fisheries Monitoring and Analysis Division, North Pacific Groundfish Observer Program. AFSC, 7600 Sand Point Way N.E., Seattle, Washington, 98115. Document available:
http://www.afsc.noaa.gov/FMA/Manual_pages/MANUAL_pdfs/manual2015.pdf.
- Cahalan, J., J. Gasper, and J. Mondragon. 2014. Catch sampling and estimation in the federal groundfish fisheries off Alaska, 2015 edition. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-286, 46 p. Document available: <http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-286.pdf>.
- Faunce, C. H. 2015. Evolution of observer methods to obtain genetic material from Chinook salmon bycatch in the Alaska pollock fishery. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-288, 28 p. Available at: <http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-288.pdf>.
- Guyon, J. R., H. T. Nguyen, C.M. Guthrie, III, J. Bonney, K. McGauley, K. Hansen, and J. Gauvin. 2015. Genetic stock composition analysis of Chinook salmon bycatch samples from the rockfish and arrowtooth flounder 2013 Gulf of Alaska trawl fisheries and the Gulf of Alaska salmon excluder device test. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-289, 19 p.
- Himes-Cornell, A., K. Hoelting, C. Maguire, L. Munger-Little, J. Lee, J. Fisk, R. Felthoven, C. Geller, and P. Little. 2013a. Community profiles for North Pacific fisheries - Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-259, Volume 6, 348 p.
- Himes-Cornell, A., K. Hoelting, C. Maguire, L. Munger-Little, J. Lee, J. Fisk, R. Felthoven, C. Geller, and P. Little. 2013b. Community profiles for North Pacific fisheries - Alaska. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-259, Volume 5, 212 p.
- National Marine Fisheries Service (NMFS), Protected Resource Division, Pacific Northwest Region. 1994. Endangered Species Act – Section 7 Reinitiation of Consultation. Biological Opinion. Groundfish Fisheries Conducted under the Bering Sea and Aleutian Islands and Gulf of Alaska Fishery management Plans of the North Pacific Fishery Management Council.
- NMFS. 2007. Endangered Species Act Section 7 Consultation – Supplemental Biological Opinion. Supplemental Biological Opinion Reinitiating Consultation on the November 20, 2000 Biological Opinion regarding Authorization of Bering Sea/Aleutian Islands Groundfish Fisheries. NMFS, Northwest Region. January 11, 2007. 25pp.
- NMFS. 2013a. 2013 Annual Deployment Plan for Observers in the Groundfish and Halibut Fisheries off Alaska. 39 pp plus appendices. Available at:
http://alaskafisheries.noaa.gov/sustainablefisheries/observers/ADP_Final_2013.pdf.
- NMFS. 2013b. 2014 Annual Deployment Plan for Observers in the Groundfish and Halibut Fisheries off Alaska. National Oceanic and Atmospheric Administration, 709 West 9th Street. Juneau, Alaska 99802. Available at: <http://alaskafisheries.noaa.gov/sustainablefisheries/observers/adp2014.pdf>.
- NMFS. 2014. 2015 Annual Deployment Plan for Observers in the Groundfish and Halibut Fisheries off Alaska. National Oceanic and Atmospheric Administration, 709 West 9th Street. Juneau, Alaska 99802. Document available:
<http://alaskafisheries.noaa.gov/sustainablefisheries/observers/final2015adp.pdf>.
- NMFS. 2015. Steiner, E., L. Pfeiffer, A. Harley, M. Guldin, and T. Lee. Economic Data Collection Program Catcher Vessel Report (2009-2012). NOAA Fisheries Northwest Fisheries Science Center. Seattle, Washington.

- NPFMC. 2015. Regulatory Impact Review/ Initial Regulatory Flexibility Act Analysis: Allow the Reapportionment of Chinook Salmon PSC between the Pollock and Non-Pollock Gulf of Alaska Trawl Fisheries (Amendment 103). Anchorage, Alaska
- NPFMC. 2014. Environmental Assessment/Regulatory Impact Review/ Initial Regulatory Flexibility Act Analysis of Chinook Salmon Prohibited Species Catch in the Gulf of Alaska Non-Pollock Trawl Fisheries (Amendment 97). Anchorage, Alaska
- NPFMC. 2012. Environmental Assessment/Regulatory Impact Review/ Initial Regulatory Flexibility Act Analysis of Chinook Salmon Prohibited Species Catch in the Gulf of Alaska Pollock Trawl Fisheries (Amendment 93). Anchorage, Alaska
- Stelle, W.W. 2012. Memorandum from William W. Stelle, Jr. Re-initiation of Endangered Species Act Section 7 Consultation on Incidental Catcher of Chinook Salmon in the Gulf of Alaska Groundfish Fisheries. January 9, 2012. NWR-2010-6825. 9pp.

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