



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OREGON 97232

May 27, 2020

Dear Recipient:

In accordance with provisions of the National Environmental Policy Act (NEPA), we announce the publication of the Final Environmental Assessment and Finding of No Significant Impact (FONSI) for increasing the 2020 annual catch limit (ACL) for shortbelly rockfish (*Sebastes jordani*).

The proposed action is to adjust the 2020 ACL of shortbelly rockfish to a level that reflects new information regarding shortbelly rockfish abundance. This adjustment will accommodate incidental bycatch of shortbelly rockfish in Pacific Coast groundfish trawl fisheries, while continuing to minimize bycatch and discourage development of a targeted fishery for shortbelly rockfish.

The action is described in the analysis contained in the supporting Environmental Assessment included in the Proposed Regulatory Amendment under the Pacific Coast Groundfish Fishery Management Plan prepared collaboratively by the Pacific Fishery Management Council and the National Marine Fisheries Service's (NMFS) West Coast Region.

The Proposed Regulatory Amendment under the Pacific Coast Groundfish Fishery Management Plan also includes actions to adjust catch limits for cowcod (*Sebastes levis*) south of 40°10' N latitude. These changes would not alter the harvest control rule or associated ACL. Therefore, the impacts remain the same as previously considered under the Final Environmental Impact Statement for Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods thereafter (FEIS) for Pacific Coast Groundfish.

The National Oceanic and Atmospheric Administration's (NOAA)'s Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities: Companion Manual for NOAA Administrative Order 216-6A requires that NOAA prepare and publish a FONSI that concludes the NEPA process for an EA.

The NMFS has made available the Final EA electronically through the NOAA Fisheries [West Coast Regional NEPA website](#). The FONSI is included as Section 3.3 of the Final Environmental Assessment.

Sincerely,

for Barry A. Thom
Regional Administrator



**Environmental Assessment/Regulatory Impact Review/Regulatory
Flexibility Act Analysis/Magnuson-Stevens Act Analysis**

**Proposed Regulatory Amendment under the Pacific Coast Groundfish
Fishery Management Plan**

May 2020

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Abstract: The proposed actions are to 1) eliminate the 2020 annual catch target (ACT) for cowcod (*Sebastes levis*) south of 40°10' N lat. with an adjustment to the set-aside or off-the-top deduction from the ACL, and 2) increase the 2020 annual catch limit (ACL) of shortbelly rockfish (*S. Jordan*) to avoid negative socioeconomic impacts to the West Coast groundfish fishery.

Cowcod south of 40°10' N lat. is one of two West Coast groundfish stocks currently managed under a rebuilding plan. Cowcod is also a quota species in the West Coast trawl catch share program with very small individual fishing quotas (IFQs) allocated to quota shareholders based on the sector's allocation of the 2020 ACT of 6 metric ton (mt). As such, cowcod is a constraining species to California trawlers south of 40°10' N lat. According to the 2019 stock assessment adopted by the Pacific Fishery Management Council (Council) at their September 2019 meeting, cowcod has now attained a healthy and rebuilt status. As the stock has increased in abundance, incidental bycatch of cowcod has been increasingly difficult to avoid. Some groundfish trawlers south of 40°10' N lat. are prematurely approaching their

vessel limits of cowcod threatening their ability to prosecute their fishery. The Council is interested in providing some economic relief by raising or eliminating the ACT, with a possible reduction to the research yield set-aside. These actions would increase the annual cowcod vessel limit for affected Limited Entry groundfish trawl fishery participants south of 40°10' N lat.

Shortbelly rockfish is one of the most abundant rockfish species in the California Current and is not targeted in any West Coast fishery (Field, *et al.* 2007a,b). While shortbelly rockfish are most abundant along the continental shelf break between the northern end of Monterey Bay and Point Reyes, California and around the Channel Islands in the Southern California Bight (Love, *et al.* 2002; Moser, *et al.* 2000; Pearson, *et al.* 1991a; Phillips 1964), they have increasingly been encountered and incidentally caught in midwater trawl fisheries in waters north of 40°10' N lat. as far north as northern Washington. The observed magnitude of encounters of shortbelly rockfish north of 40°10' N lat. in recent years is unprecedented and may be the result of a climate change-driven distributional shift and/or the effect of large recruitments. It appears both explanations are contributing factors given evidence of continued high recruitment and abundance in the core habitats off southern and central California (see Section 4.7). The shortbelly ACL of 500 mt was exceeded in 2018 and 2019. The Council is interested in specifying a higher shortbelly ACL in 2020 than the 500 mt ACL in regulations to avoid premature closure of groundfish fisheries that incidentally take shortbelly rockfish.

List of Acronyms and Abbreviations

ABC	acceptable biological catch
ACL	annual catch limit
ACT	annual catch target
AM	accountability measure
B ₀	unfished equilibrium spawning stock biomass or spawning output
B _{MSY}	The biomass estimated to result in maximum sustainable yield of a stock and the prescribed biomass target for West Coast groundfish stocks
CA	California
CalCOFI	California Cooperative Oceanic Fisheries Investigations
CCA	Cowcod Conservation Area
CP	catcher-processor
Council	Pacific Fishery Management Council
E.O.	Executive Order
EA	Environmental Assessment
EC species	Ecosystem Component species
EEZ	Exclusive Economic Zone
EFP	exempted fishing permit
F	instantaneous harvest rate
FG	fixed gear
FMP	fishery management plan
FR	<i>Federal Register</i>
GAP	Groundfish Advisory Subpanel
GEMM	Groundfish Expanded Mortality Multiyear
GMT	Groundfish Management Team
HCR	harvest control rule
HG	harvest guideline
IFQ	individual fishing quota
IO-PAC	Input-Output Model for Pacific Coast Fisheries
IRFA	Initial Regulatory Flexibility Analysis
LE	limited entry (sectors of the West Coast groundfish fishery)
m	meter or meters
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MHW	marine heatwave
mt	metric ton or tonne
MS	Mothership
MW	midwater
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWFSC	Northwest Fisheries Science Center
OA	open access (sector of the West Coast groundfish fishery)
OFL	overfishing limit
OR	Oregon
OY	optimum yield

P*	overfishing probability (the Council's risk tolerance for potential overfishing due to the scientific uncertainty in estimating the OFL)
PCGFMP	Pacific Coast Groundfish Fishery Management Plan
PPA	preliminary preferred alternative
Pac FIN	Pacific Fisheries Information Network
QP	quota pounds
RCA	Rockfish Conservation Area
Ricin	Recreational Fisheries Information Network
RFA	Regulatory Flexibility Act
RFAA	Regulatory Flexibility Act Analysis
RIR	Regulatory Impact Review
RREAS	Rockfish Recruitment and Ecosystem Analysis Survey
SBA	Small Business Act
SCB	Southern California Bight
SPR	spawning potential ratio
SSC	Scientific and Statistical Committee
SWFSC	Southwest Fisheries Science Center
WA	Washington
WCGOP	West Coast Groundfish Observer Program

Table of Contents

EXECUTIVE SUMMARY	7
1 INTRODUCTION	10
1.1 Purpose and Need.....	12
1.2 History of this Action.....	13
1.3 Description of Management Area and Affected Fisheries	18
2 DESCRIPTION OF ALTERNATIVES	19
2.1 Alternatives for Cowcod South of 40°10' N lat.	19
2.1.1 No Action	19
2.1.2 Alternative 1 (Preferred): Eliminate the 2020 ACT for Cowcod South of 40°10' N lat.....	19
2.2 Alternatives for Shortbelly Rockfish.....	19
2.2.1 No Action	19
2.2.2 Alternative 1 (Preferred): Specify a 2020 ACL of 3,000 mt for Shortbelly Rockfish	19
2.2.3 Alternative 2: Specify a 2020 ACL for Shortbelly Rockfish of 4,184 mt.....	20
2.3 Comparison of Alternatives	20
2.4 Rationale for the Council's Preferred Alternative.....	22
2.4.1 Cowcod Preferred Alternative: Eliminate the 2020 ACT for cowcod south of 40°10' N lat. and decrease the research set aside to 1 mt. The cowcod annual vessel limit is 1,264 mt.....	22
2.4.2 Shortbelly Rockfish Preferred Alternative: Specify a 2020 ACL of 3,000 mt for shortbelly rockfish ...	22
2.5 Alternatives Considered but not Analyzed Further	23
3 TIERED ENVIRONMENTAL ASSESSMENT	24
3.1 Tiering.....	24
3.2 Resource Components Addressed in the Analysis	25
3.2.1 Target Species.....	25
3.2.2 Ecosystem.....	33
3.2.3 Protected Species	35
3.2.4 Habitat	36
3.2.5 Socioeconomic.....	38
3.3 Finding of No Significant Impact (FONSI).....	38
3.3.1 Background.....	38
3.3.2 Significance Review	39
3.3.3 Determination	42
4 REGULATORY IMPACT REVIEW	43
4.1 Statutory Authority.....	43
4.2 Purpose and Need for Action	44
4.3 Alternatives	44
4.4 Methodology for Analysis of Impacts.....	44
4.5 Description of the West Coast Groundfish Limited Entry Trawl Fishery	45
4.5.1 Management Pursuant to the Pacific Coast Groundfish FMP.....	45
4.5.2 Number of Vessels Affected by the Proposed Action	45
4.5.3 Fishery Participation and Revenue	48
4.5.4 Communities.....	50
4.5.5 Vessel Engagement and Dependency	50
4.6 Impacts of Alternatives on Cowcod South of 40°10' N lat.	52
4.6.1 Impacts of the No Action Alternative.....	54
4.6.2 Impacts of Cowcod Alternative 1	54
4.7 Impacts of Alternatives on Shortbelly Rockfish	54

4.7.1	Impacts of the No Action Alternative.....	57
4.7.2	Impacts of Shortbelly Alternative 1.....	57
4.7.3	Impacts of Shortbelly Alternative 2.....	58
4.8	Management and Enforcement Considerations.....	60
4.9	Summation of the Alternatives with Respect to Net Benefit to the Nation.....	60
5	INITIAL REGULATORY FLEXIBILITY ANALYSIS.....	61
5.1	Introduction.....	61
5.2	IRFA Requirements.....	61
5.3	Definition of a Small Entity.....	62
5.4	Reason for Considering the Proposed Action.....	64
5.5	Objectives of Proposed Action and its Legal Basis.....	64
5.6	Number and Description of Directly Regulated Small Entities.....	64
5.7	Recordkeeping, Reporting, and Other Compliance Requirements.....	65
5.8	Federal Rules that may Duplicate, Overlap, or Conflict with Proposed Action.....	65
5.9	Description of Significant Alternatives to the Proposed Action that Minimize Economic Impacts on Small Entities.....	65
6	MAGNUSON-STEVENSON ACT.....	67
6.1	Magnuson-Stevens Act National Standards.....	67
7	PREPARERS AND PERSONS CONSULTED.....	71
8	REFERENCES.....	72

List of Tables

Table 1.	Estimated total fishing-related mortality (in mts) by sector of cowcod south of 40°10' N lat. on the U.S. West Coast, 2002-2019.....	16
Table 2.	Estimated total fishing-related mortality (in mts) by sector of shortbelly rockfish on the U.S. West Coast, 2002-2019.....	17
Table 3.	Summary of the features of the alternatives for cowcod south of 40°10' N lat.	21
Table 4.	Summary of the features of the alternatives for shortbelly rockfish.....	21
Table 5.	The number of LE trawl vessels that attained or exceeded 90 percent of the annual vessel limit of cowcod south of 40°10' N lat., 2011-2015 from Table 7 in the West Coast Groundfish Trawl Catch Share Program Five-year Review document.....	46
Table 6.	The number of participating commercial whiting and non-whiting sector vessels by sector and fishery in 2017 (from Somers et al. 2019).....	48
Table 7.	Nominal revenue (\$1,000s) from groundfish landings, 2013–17, by IOPAC port and fishery sector. Confidential data is excluded as indicated by “Conf.” Totals and averages for those rows are for non-confidential data only as indicated by shading.....	49
Table 8.	Engagement and dependence on groundfish and non-groundfish resources by port group in West Coast fisheries using total inflation-adjusted revenue, 2016-2018.....	51
Table 9.	Groundfish engagement (ex-vessel revenue in port as percent of ex-vessel coastwide revenue) and dependence (ex-vessel revenue in port as percent of total ex-vessel revenue in port), using current (inflation-adjusted) dollars for 2018.....	52
Table 10.	Summary of the economic effects of the alternatives for cowcod south of 40°10' N lat.	53
Table 11.	Projected loss in personal income in millions of \$USD associated with fishery closures by month. Source Table C-18 in Appendix C from 2019-2020 harvest specifications and management measures document.....	56
Table 12.	Source of projected cumulative impacts of fishery closures based on the IO-PAC model results depicted in Table 11. Scenarios with projected loss in personal income in millions of \$USD associated with early fishery closures.....	57
Table 13.	Summary of the features and economic effects of the alternatives for shortbelly rockfish.	59

List of Figures

Figure 1. Estimated total mortality of cowcod south of 40°10' N lat. by commercial and recreational sectors and through research activities. 2019 total mortality is uncertain and incomplete with commercial catches estimated through December 5, 2019 and recreational catches through September 2019.	14
Figure 2. Total fishing-related mortality of shortbelly rockfish on the West Coast, 2002-2019. Mortalities in 2019 are estimated through December 5, 2019. The dotted horizontal line is the 2020 ACL in regulations.	15
Figure 3. Locations of RREAS and CalCOFI sampling. RREAS locations are subdivided among North, North-Central, Core, North-Southern and Southern regions. The CalCOFI stations depict the 66 core stations that have been sampled regularly since 1951.	28
Figure 4. Mean abundance of young of the year shortbelly rockfishes from North (N), North-Central (NC), Core (C), South-Central (SC) and South (S) regions of the RREAS.	29
Figure 5. Mean winter larval shortbelly abundances from core CalCOFI stations from 1951-2018. Identification of 2017 are not yet complete and 2017 data was excluded from the plot.	30
Figure 6. Encounter frequency (number of positive tows with shortbelly rockfish/total number of tows each year) of shortbelly rockfish in the NMFS West Coast Bottom Trawl Survey, 2003-2018.	31
Figure 7. Total 2019 catches through the end of June and the end of August for two of the California Groundfish Collective boats with high cowcod catch in relation to annual vessel limit alternatives (horizontal lines). Permission was given from the CGC to show the catch of the two boats with the highest cowcod catch, which are listed as numbers as to not identify the names of the boats.	47

Executive Summary

The proposed actions are to 1) increase the 2020 annual catch limits (ACL) for shortbelly rockfish from 500 mt to 3,000 mt, 2) eliminate the 2020 annual catch target (ACT) for cowcod south of 40°10' N lat., and 3) reduce the research set-aside for cowcod south of 40°10' N lat. from 2 mt to 1 mt to increase the annual vessel limit in the trawl catch share program south of 40°10' N lat. Both stocks are managed under the Pacific Coast Groundfish Fishery Management Plan (FMP).

Purpose and Need

Purpose and Need for the Cowcod Action

The purpose of this action is to remove the ACT for cowcod in 2020 south of 40°10' N lat., given the improved state of the cowcod stock, and to reduce the yield set-aside for cowcod mortality in research activities, based on anticipated research impacts in 2020. The proposed action increases the annual vessel limit of cowcod in the trawl catch share program south of 40°10' N lat. from 858 lbs to 1,264 lbs.

Action is needed to reduce the risk that vessels fishing south of 40°10' N lat. in the groundfish trawl individual fishing quota (IFQ) program will reach their annual vessel limit for cowcod in 2020 and have to cease fishing in the trawl IFQ program for the remainder of the year, which would result in severe adverse economic impacts on those vessels and fishing communities in the area.

Purpose and Need for the Shortbelly Rockfish Action

The purpose of this action is to review and adjust the ACL for shortbelly rockfish in 2020 to a level that will accommodate incidental bycatch of this stock given recent high bycatch in groundfish trawl fisheries, while continuing to minimize bycatch and discourage development of a targeted fishery for shortbelly rockfish.

Action is needed to reduce the risk of closures or constraints in groundfish trawl fisheries due to the possibility of high bycatch of shortbelly rockfish in 2020, and avoid the adverse economic impacts to West Coast fishing communities that would result from such closures or constraints, while continuing to protect the availability of shortbelly rockfish as important forage in the California Current Ecosystem.

Alternatives

Cowcod Alternatives

Alternatives for the cowcod action are:

No Action: Maintain the 6 mt cowcod ACT for 2020. Cowcod annual vessel limit is 858 lbs.

Alternative 1 (Preferred): Eliminate the 6 mt cowcod ACT for 2020 and manage fisheries to stay within the 10 mt ACL. Reduce the research set-aside to 1 mt. The cowcod annual vessel limit under this alternative is 1,264 lbs.

Shortbelly Rockfish Alternatives

Alternatives for the shortbelly rockfish action are:

No Action: Maintain the 500 mt shortbelly rockfish ACL for 2020.

Alternative 1 (Preferred): Increase the 2020 shortbelly rockfish ACL to 3,000 mt.

Alternative 2: Increase the 2020 shortbelly rockfish ACL to equal the proposed 2021 acceptable biological catch (ABC) of 4,184 mt.

Environmental Assessment

The Environmental Assessment for shortbelly rockfish alternatives identifies information necessary to understand the affected environment, the potential impacts of each alternative and criteria to evaluate the significance of these impacts. This EA is tiered off the Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods Thereafter Final Environmental Impact Statement as updated by the 2017-18 EA and the 2019-2020 EA. Although changes are proposed to the cowcod ACT and allocations, these changes would not alter the Harvest Control Rule or associated ACL. The impacts associated with the proposed alternatives for cowcod remain the same as previously analyzed in the 2019-2020 EA. The impacts associated with the proposed shortbelly ACL alternatives for target and non-target species would be negligible as the harvest limits for shortbelly and other target species would remain below overfishing limits. Impacts of the shortbelly ACL alternatives on the California Current Ecosystem, particularly forage availability, would not be significant since there have been anomalously high abundance of forage species such as northern anchovy, and higher than average production of several marine predators in 2018-19. Impacts of the shortbelly rockfish ACL alternatives on protected species would not be significant as predators that feed on shortbelly rockfish do not exclusively prey on shortbelly when other species are abundant; and shortbelly is one of many species in predator diets, and the action would reduce risk of increased bycatch of Chinook salmon by the whiting fishery. Impacts of the shortbelly ACL alternatives on bottom habitat would be negligible as EFH bottom habitat is not affected by the proposed shortbelly action because the affected fishery sector predominantly uses mid-water trawl gear. Impacts on groundfish EFH, including prey availability, would not be significant since the increased shortbelly bycatch is a result of an overall increase in abundance and range extension of shortbelly rockfish. Overall the shortbelly ACL action alternatives would have a positive, non-significant impact on socioeconomics by lessening the potential for an early closure of midwater trawl fisheries.

Regulatory Impact Review

The preferred cowcod Alternative 1 would potentially mitigate the constraint imposed by the low cowcod vessel limit in the 2020 IFQ trawl fishery south of 40°10' N lat. by eliminating the ACT and increasing the vessel limit by basing the annual vessel limit solely on the trawl allocation of the fishery harvest guideline (HG) of the ACL. The conservation objectives of the cowcod rebuilding plan would not be compromised by this action since all rebuilding alternatives are predicated on staying within the prescribed ACLs and associated harvest control rule (HCR),

which are not proposed to change in 2020. Further, the 2019 cowcod stock assessment indicates rebuilding objectives are already attained since the stock is now estimated to be above its biomass management target (B_{MSY}). The Council adopted the 2019 assessment and the National Marine Fisheries Service (NMFS) has declared the stock to be rebuilt.

Shortbelly rockfish Alternatives 1 and 2 would mitigate the potential constraint imposed by the low 2020 ACL if incidental bycatch once again exceeds the ACL. The low ACL of 500 mt, was set at less than 9 percent of the ABC and was intended to accommodate bycatch levels as observed through 2017, discourage targeting, and continue to protect the availability of shortbelly rockfish as a forage species. In recent years, there has been a northward shift in shortbelly rockfish distribution and abundance, resulting in increased bycatch levels in midwater trawl fisheries such as those targeting Pacific whiting. The proposed action to increase the 2020 ACL should not harm the stock since the abundance appears to be high and the stock is not targeted in any fishery.

Increasing the 2020 ACL should not induce targeting since shortbelly rockfish are small and not marketable. As such, a longer-term solution may be a reconsideration of an Ecosystem Component (EC) species designation with a continued monitoring requirement. An EC species designation for 2020 is not considered as part of this proposed action.

Regulatory Flexibility Act Analysis

The preferred cowcod Alternative 1 would directly impact two groups: quota share owners of cowcod south of 40°10' N latitude and catcher vessel owners who operate vessels south of 40°10' N latitude and have the potential to encounter cowcod. The preferred cowcod alternative would have neutral to positive impacts for Limited Entry (LE) trawl participants who own quota for this species and/or fish south of 40°10' N latitude. Quota owners that are able to sell increased quota amounts may benefit. Most IFQ vessels do not operate south of 40°10' N latitude and would experience no impacts from the preferred alternative.

The preferred alternative for shortbelly rockfish will primarily affect LE trawl vessels, especially midwater trawl vessels targeting Pacific whiting and semi-pelagic rockfish (i.e., non-whiting) north of 40°10' N lat. given the sectors and gear experiencing the highest bycatch of shortbelly rockfish in recent years. The preferred alternative would have neutral to positive impacts for these vessels since the higher ACL for shortbelly rockfish would reduce the risk of an early closure to their fishing if increased levels of shortbelly rockfish occurs in 2020. This proposed rule is not expected to place small entities at a competitive disadvantage to large entities or expected to reduce profit for small entities.

Magnuson-Stevens Act National Standards

The preferred alternatives for cowcod and shortbelly rockfish meet the 10 National Standards as contained in the Magnuson-Stevens Act. The proposed actions do not increase the risk of overfishing of either cowcod or shortbelly rockfish, or any other groundfish stock. The fundamental objective of the proposed actions is to remove regulatory barrier to better achieve OY of target species while continuing to minimize bycatch of incidental species, using the best scientific information available. A brief discussion of how each alternative is consistent with the National Standards is provided.

1 Introduction

This document analyzes proposed management measures that would apply to cowcod south of 40°10' N lat. in the trawl fishery and coastwide shortbelly rockfish, both managed in the Pacific Coast Groundfish Fishery Management Plan (FMP). The measures under consideration include: 1) to eliminate the 2020 ACT for cowcod south of 40°10' N lat., coupled with a decrease of the research set-aside to 1 mt, and 2) to increase the 2020 ACL for shortbelly rockfish.

This document is an Environmental Assessment/Regulatory Impact Review/Regulatory Flexibility Act Analysis/Magnuson-Stevens Act Analysis (EA/RIR/RFAA/MSA). An EA/RIR/RFAA/MSA provides assessments of the environmental impacts of a proposed action and its reasonable alternatives (the EA), the benefits and costs of the alternatives and the distribution of impacts (the RIR), identification of the small entities that may be affected by the alternatives (RFAA), and analysis of how the alternatives align with the National Standards (MSA). This EA/RIR/RFAA/MSA addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act, the National Environmental Policy Act, Presidential Executive Order 12866, and the Regulatory Flexibility Act. An EA/RIR/RFAA/MSA is a standard document produced by the Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) West Coast Region to provide the analytical background for decision-making.

Catch data from 2002 to 2018 used in these analyses, including estimates of dead discards for these species, were provided by the National Marine Fisheries Service Northwest Fisheries Science Center (NMFS NWFSC) Observer Program in their Groundfish Expanded Mortality Multiyear (GEMM) product (Somers, *et al.* 2019). Estimated landings in 2019 (as of February 19, 2020) were downloaded from the Pacific Fisheries Information Network (Pac FIN).

Cowcod South of 40°10' N lat.

The National Marine Fisheries Service (NMFS) declared cowcod south of 40°10' N lat. overfished in January 2000, after Butler *et al.* (1999) estimated the 1998 spawning biomass to be at 7 percent of B_0 , well below the 25 percent minimum stock size threshold. Cowcod has been managed with *de minimus* harvest specifications (optimum yields [OYs]/ACLs of 2.4 - 10 mt) under a rebuilding plan since that time.

Overfished species, such as cowcod, were designated as a quota species under FMP Amendment 20 which established the West Coast trawl catch share program. This was done as an expedient measure to control the incidental bycatch of overfished species in the trawl fishery through IFQ management. Vessel limits for LE trawl participants in the catch share program control the amount of quota pounds (QP) of a quota species registered to a vessel with the intent to prevent excessive control of quota by a participant. Vessel limits are determined based on the trawl participant's apportionment of the trawl sector's allocation of a quota species' ACL or ACT if one is specified.

The 2020 ACL and ACT for cowcod south of 40°10' N lat. are 10 mt and 6 mt, respectively. The 2020 vessel limits for cowcod are based on an apportionment (17.7 percent) of the 6 mt ACT. Public comment at the Council's June 2019 meeting by participants in the trawl fishery south of 40°10' N lat. urged the Council and NMFS to increase or eliminate the ACT to effect a higher

cowcod vessel limit. While no entity exceeded the annual cowcod vessel limit in 2018 and 2019, some trawl participants were highly concerned that they might exceed their vessel limit in 2019 and 2020 despite efforts to avoid incidental cowcod bycatch. Once the annual vessel limit is attained, the vessel needs to cease fishing for the rest of the year. This poses a significant economic cost to affected participants since they cannot fish their remaining quota of healthy target species. While there is no regulatory mechanism to avoid such impacts, the GMT recommended increasing or eliminating the 2020 cowcod ACT to potentially avoid such impacts. They also posed the option of reducing the yield set-aside or off-the top deduction of yield from the ACL to account for research activities, limits for exempted fishing permits (EFPs), and incidental bycatch in non-groundfish fisheries.

It has been anticipated that cowcod would be increasingly difficult to avoid in groundfish fisheries south of 40°10' N lat. given the prediction cowcod would be rebuilt at the start of 2019. This prediction is confirmed based on the results of the 2019 cowcod stock assessment adopted at the September 2019 Council meeting, which estimates the spawning stock is at 57 percent of B_0 at the start of 2019 (Dick and He 2019). The Council recommended to NMFS the stock be declared rebuilt. New harvest specifications will be considered for 2021 and beyond based on the results of the new assessment. The action the Council is considered in September and November was to eliminate the 2020 ACT to avoid impacts to affected trawl fishery participants in the interim before new harvest specifications are implemented in 2021.

The Council adopted the range of alternatives described in Section 2.1 and the preliminary preferred alternative (PPA) for this proposed action at its September 2019 meeting in Boise, Idaho. Final action occurred at the November 2019 Council meeting in Costa Mesa, California.

Shortbelly Rockfish

The expectation of eventual development of a domestic commercial fishery (Kato 1981) led to past efforts to estimate stock abundance and productivity (Lenard 1980, Pearson et al. 1989, Pearson et al. 1991a) as well as evaluations of commercial potential. The first ABC for shortbelly rockfish was set by the Council at 10,000 mt for 1983 through 1989. A stock assessment by Pearson et al. (Pearson, *et al.* 1991b) estimated that allowable catches for shortbelly might range from 13,900 to 47,000 mt per year, based on life history data and hydro acoustic survey estimates of abundance. Subsequently, the Council established an ABC of 23,500 mt, which was reduced to 13,900 mt in 2001 based on observations of poor recruitment throughout the 1990s and the continued lack of a targeted fishery. Yet despite several attempts to develop a commercial fishery for shortbelly in the 1990s, domestic fishery landings had never exceeded 80 mt per year along the West Coast.

Shortbelly rockfish was assessed as a research assessment to understand the potential environmental determinants of fluctuations in the recruitment and abundance of an unexploited rockfish population in the California Current ecosystem (Field, *et al.* 2007a,b). The assessment showed that substantive population variability has occurred over the study period for an (effectively) unexploited species in the California Current. The results of the assessment indicated the shortbelly rockfish stock was healthy and above B_{MSY} with an estimated spawning stock biomass of 67 percent of its unfished biomass in 2005.

Shortbelly rockfish were initially considered for an Ecosystem Component (EC) species designation under FMP Amendment 23. Rather than classifying shortbelly rockfish as an EC species, the Council chose to recommend a restrictive ACL of 50 mt, which was below recent catch levels, for the 2011-2012 and the 2013-2014 management cycles. The ACL was increased to 500 mt beginning in 2015 to prevent unavoidable bycatch from prematurely shutting down emerging midwater trawl fisheries targeting yellowtail and widow rockfish. The 500 mt ACL is less than 9 percent of the ABC and is a level of harvest meant to accommodate unavoidable incidental bycatch of shortbelly rockfish while allowing the remaining harvestable surplus of the stock to be available as forage for species in the California Current ecosystem. Despite that, the apparent increase in abundance and range expansion to northern waters has resulted in a large bycatch of shortbelly rockfish in midwater trawl fisheries targeting Pacific whiting. The 500 mt shortbelly rockfish ACL was exceeded by 8 mt (102 percent of the ACL) in 2018 and an estimated 154 mt in 2019 (131 percent of the ACL) (as of February 19, 2020).

The Council is therefore proposing an increase in the 2020 shortbelly rockfish ACL to avoid the potential of early fishery closures if the ACL is again exceeded. The Council adopted the range of alternatives described in Section 2.2 and a PPA for this proposed action at its September 2019 meeting in Boise, Idaho. The Council took final action at its November 2019 meeting in Costa Mesa, California.

1.1 Purpose and Need

Purpose and Need for the Cowcod Action

The purpose of this action is to remove the ACT for cowcod in 2020 south of 40°10' N lat., given the improved state of the cowcod stock, and to reduce the yield set-aside for cowcod mortality in research activities, based on anticipated research impacts in 2020.

Action is needed to reduce the risk that vessels fishing south of 40°10' N lat. in the groundfish trawl individual fishing quota (IFQ) program will reach their annual vessel limit for cowcod in 2020 and have to cease fishing in the trawl IFQ program for the remainder of the year, which would result in severe adverse economic impacts for those vessels and the fishing communities in the area.

Purpose and Need for the Shortbelly Rockfish Action

The purpose of this action is to review and adjust the ACL for shortbelly rockfish in 2020 to a level that will accommodate incidental bycatch of this stock given recent high bycatch in groundfish trawl fisheries, while continuing to minimize bycatch and discourage development of a targeted fishery for shortbelly rockfish.

Action is needed to reduce the risk of closures or constraints in groundfish trawl fisheries due to the possibility of high bycatch of shortbelly rockfish in 2020, and avoid the adverse economic impacts to West Coast fishing communities that would result from such closures or constraints, while continuing to protect the availability of shortbelly rockfish as important forage in the California Current Ecosystem.

1.2 History of this Action

Cowcod South of 40°10' N lat.

Cowcod south of 40°10' N lat. have been managed conservatively under a rebuilding plan since the stock was declared overfished in 2000. In 2001 cowcod became a prohibited species (i.e., no allowable retention) and most of their habitat in the Southern California Bight (SCB) south of Pt. Conception at 34°27' N lat. was closed to bottom fishing. Two Cowcod Conservation Areas (CCAs) in the SCB, were selected due to their high density of cowcod. The larger of the two areas (CCA West) is a 4,200 square mile area west of Santa Catalina and San Clemente Islands. A smaller area (CCA East) is about 40 miles offshore of San Diego, and covers about 100 square miles. Bottom fishing is prohibited deeper than 40 fathom (FM) within the CCAs.

The current cowcod rebuilding plan specifies a spawning potential ratio (SPR) harvest rate of 82.7%, which is used to set the ACL. A high ACT of 6 mt (deducted from the 10 mt ACL) was specified to accommodate a higher research take anticipated in the CCAs when the NMFS Hook and Line survey was allowed to fish sites within these areas. The GMT has since recommended reducing or eliminating the ACT since cowcod catch is projected to be well within the ACL even with a greater research take.

Annual vessel limits for cowcod and other trawl quota species are in place to minimize hoarding of quota for any one species, especially a constraining stock such as cowcod south of 40°10' N lat. These management measures have resulted in a successful rebuilding of cowcod. Dick and He (2019) estimate the stock has attained a depletion of 57 percent of B_0 (above the B_{MSY} management target of 40 percent) at the start of 2019. The Council recommended to NMFS to declare the stock rebuilt.

The default HCR for a stock transitioning from a rebuilding to a healthy status is to set the ACL equal to the ABC under the current overfishing probability (P^*) in regulations. However, such a dramatic change in cowcod harvest specifications is not considered under this action which seeks to eliminate the 2020 ACT already in regulations. The harvest specifications projected in the 2019 assessment will be considered by the Council and NMFS in a separate process for managing the West Coast groundfish fishery in 2021 and beyond.

The Council received public comment in June 2019 from affected trawl fishery participants south of 40°10' N lat. requesting relief from the very small annual vessel limits for cowcod. They commented that cowcod have been increasingly hard to avoid in the last two years and some trawl fishermen are approaching their annual vessel limit prematurely, which threatens their ability to target healthy stocks such as chilipepper rockfish, thornyheads, and sablefish. The recent increase in total mortalities of cowcod absent significant changes to management measures that would affect cowcod bycatch bolsters the claim of cowcod being increasingly difficult to avoid (Table 1 and Figure 1). The GMT recommended the action to increase or eliminate the 2020 cowcod ACT, with a possible adjustment to the 2020 cowcod set-aside, as a means to provide relief to affected trawl fishery participants. This proposed action does not change the 2020 ACL for cowcod; however, it does recommend eliminating the 2020 ACT and reducing the research set-aside to 1 mt or 50% of the set-aside under the No Action alternative.

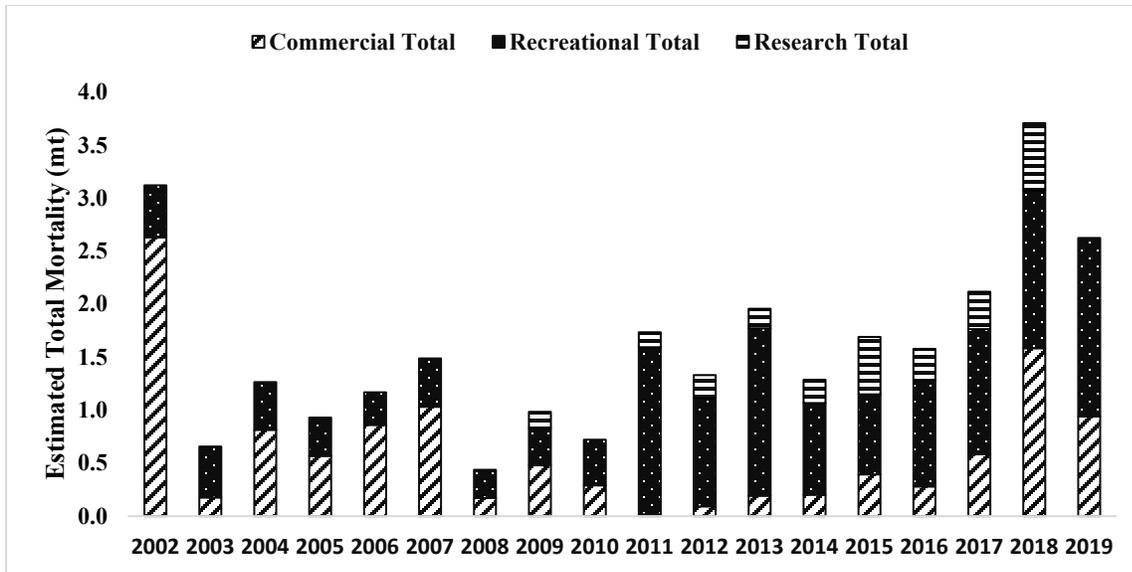


Figure 1. Estimated total mortality of cowcod south of 40°10' N lat. by commercial and recreational sectors and through research activities. 2019 total mortality is uncertain and incomplete with commercial catches estimated through December 5, 2019 and recreational catches through September 2019.

Shortbelly Rockfish

Shortbelly rockfish have never been targeted and are recognized as an important forage species in the California Current ecosystem with the center of its population distribution historically on the shelf/slope break off central California (Field, *et al.* 2008). The Council originally considered designating shortbelly rockfish an EC species when FMP Amendment 23 was being considered but ultimately decided to specify a low 50 mt ACL to accommodate unavoidable incidental bycatch beginning in 2011. This ACL was considered a safe level of harvest that would not disrupt groundfish fisheries while allowing the remaining harvestable surplus of the stock to be available as forage. This low level of bycatch was considered safe given the observed mortalities at that time; the 2002-2009 average coastwide annual total mortality was 14.4 mt (Table 2).

The ACL was raised to 500 mt in 2015 in anticipation of the re-emergence of the midwater trawl rockfish fishery after widow and canary rockfish were declared rebuilt. Incidental bycatch remained low until 2017 when it abruptly increased by an order of magnitude and has been increasing since (Table 2; Figure 2). Most of this bycatch occurred in the Pacific whiting midwater trawl fisheries north of 40°10' N lat. Total mortalities in 2018 groundfish fisheries have just been reconciled by the West Coast Groundfish Observer Program (WCGOP). The 500 mt ACL was exceeded by 8 mt in 2018 and by an estimated 154 mt in 2019 (catch data extracted on February 19, 2020).

The Council received public comment at their June 2019 meeting from representatives of the at-sea whiting fishery asking for inseason relief given the high bycatch of shortbelly rockfish and an increase in the 2020 shortbelly rockfish ACL to avoid exceeding the ACL again. The at-sea whiting fleets employ a fishery monitoring company, Sea State, Inc., to monitor each catcher vessel's bycatch in near real time. When there is a large bycatch event (aka a "lightning strike") for a non-target species of concern, Sea State notifies the entire fleet of the location and magnitude

of the bycatch event and advises vessels to move from these bycatch “hot spots”. There were a number of shortbelly rockfish lightning strikes during the 2019 whiting fishery. While the fleets were not necessarily monitoring shortbelly rockfish bycatch as a noted species of concern (shortbelly rockfish were rarely encountered north of 40°10’ N lat. and the fleet does not operate in the south), these lightning strikes in such a short period compelled the fleet to investigate and self-reported these bycatches to NMFS. They also immediately implemented the Sea State protocol to move from these bycatch areas and actively avoid shortbelly rockfish. NMFS responded with a public notice to all fishery participants, including shoreside trawl vessels that do not employ Sea State, to avoid shortbelly rockfish and the areas where the at-sea fleets experienced high bycatch. While the ACL had not been exceeded at the time of the June 2019 Council meeting, it was clear this would happen given the season was ongoing and sector whiting allocations were not close to being attained. NMFS advised the Council and industry they would not automatically close the 2019 fishery upon attainment of the shortbelly rockfish ACL and urged avoidance to minimize shortbelly rockfish bycatch. It is notable the incidental shortbelly rockfish catch rate has decreased since the fleets began actively avoiding them. The GMT and Groundfish Advisory Subpanel (GAP, the groundfish industry advisory body for the Council) recommended increasing the 2020 shortbelly rockfish ACL to avoid a disruption of coastwide fisheries, especially midwater trawl fisheries targeting Pacific whiting and healthy semi-pelagic rockfish species north of 40°10’ N lat. (Table 2 and Figure 2), should the ACL again be exceeded.

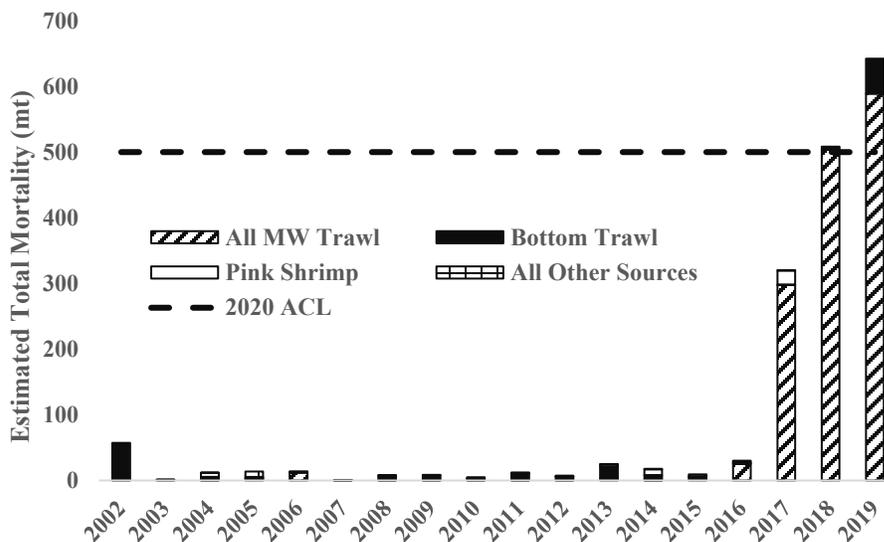


Figure 2. Total fishing-related mortality of shortbelly rockfish on the West Coast, 2002-2019. Mortalities in 2019 are estimated through December 5, 2019. The dotted horizontal line is the 2020 ACL in regulations.

Table 1. Estimated total fishing-related mortality (in mts) by sector of cowcod south of 40°10' N lat. on the U.S. West Coast, 2002-2019.

Year	Commercial Fisheries									California Recreational	Research	Estimated Fishing Mortality
	IFQ/Co-op Management		Non-IFQ									
	Bottom Trawl	Fixed Gear	California Halibut	Sea Cucumber	Pink Shrimp	Ridgeback Prawn	Non-Nearshore Fixed Gear	Nearshore Fixed Gear	Incidental Fisheries			
2002	2.61	--	--	--	--	--	0.02	--	--	0.49	--	3.12
2003	0.18	--	--	--	--	--	--	--	0.00	0.48	--	0.66
2004	0.72	--	0.00	--	0.01	--	0.05	--	0.03	0.45	--	1.26
2005	0.57	--	--	--	--	--	0.00	0.00	--	0.36	--	0.93
2006	0.86	--	--	--	--	--	--	--	--	0.31	--	1.17
2007	1.00	--	0.02	--	--	--	0.01	--	--	0.46	--	1.49
2008	0.17	--	--	--	--	--	--	--	--	0.27	--	0.44
2009	0.42	--	--	--	--	--	0.06	--	--	0.35	0.15	0.98
2010	0.26	--	--	--	--	--	--	--	0.03	0.43	--	0.72
2011	0.02	--	--	--	--	--	--	--	--	1.58	0.14	1.73
2012	0.09	--	--	--	--	--	--	--	--	1.02	0.22	1.33
2013	0.19	--	--	--	--	--	--	--	--	1.58	0.18	1.96
2014	0.18	0.01	--	0.00	--	--	0.01	0.00	--	0.86	0.22	1.29
2015	0.39	--	--	--	--	--	--	--	--	0.76	0.54	1.69
2016	0.28	--	--	--	0.00	--	--	--	--	1.00	0.29	1.58
2017	0.42	--	--	--	0.09	0.07	--	--	0.01	1.18	0.35	2.12
2018	0.42	--	--	--	0.08	0.10	0.99	--	--	1.49	0.63	3.71
2019 a/	0.94		NA							1.68	NA	2.62

a/ Catches to date (12/5/2019) are incomplete. All commercial catches are combined and were downloaded from the GMT scorecard available on the PacFIN web site on December 5, 2019. The CA recreational catch is estimated through September 2019 and was downloaded from the RecFIN database on December 5, 2019.

Table 2. Estimated total fishing-related mortality (in mts) by sector of shortbelly rockfish on the U.S. West Coast, 2002-2019.

Year	Commercial Fisheries													Washingt on Tribal Shoreside	Research	Estimated Fishing Mortality
	IFQ/Co-op Management						Non-IFQ									
	Bottom Trawl	Fixed Gear	Mid- Water Rockfish	Shores ide Mid- Water Hake	At- sea Mid- Water r Catcher Proce ssor	At-sea Mid- Water Moth ership /Catcher Vessel	Californ ia Halibut	Sea Cuc umber	Pink Shrimp	Ridgeback Prawn	Non- Near shore Fixed Gear	Nearshore Fixed Gear	Incidental Fisheries			
2002	56.61	--	--	0.07	0.48	0.10	0.00	--	--	--	--	--	--	--	--	57.26
2003	0.47	--	--	0.04	0.49	0.02	--	--	--	--	--	--	0.01	--	--	1.03
2004	5.29	--	--	0.01	0.00	0.02	0.05	--	6.42	--	--	0.00	0.04	--	--	11.82
2005	0.84	--	--	--	0.01	2.69	--	--	1.91	--	--	--	--	--	8.21	13.65
2006	0.84	--	--	0.28	0.31	11.24	--	--	--	--	--	--	--	--	1.10	13.77
2007	0.24	--	--	--	0.00	0.01	--	--	0.06	--	0.02	--	--	0.03	0.33	0.69
2008	7.03	--	--	0.00	--	--	--	--	--	--	0.02	--	--	--	1.21	8.26
2009	7.42	--	--	0.05	--	--	--	--	--	--	--	0.00	--	--	1.09	8.57
2010	2.47	--	--	0.33	--	0.00	--	--	0.24	--	--	--	0.00	--	1.77	4.80
2011	10.55	--	--	0.00	--	--	--	--	0.21	--	--	--	--	--	1.45	12.21
2012	5.46	--	--	0.09	0.02	0.27	--	--	0.38	--	--	--	--	--	1.22	7.44
2013	18.22	0.00	0.02	2.12	0.00	0.73	--	--	3.49	--	--	--	--	0.02	0.50	25.10
2014	8.02	0.00	--	0.01	0.01	0.00	--	--	8.92	--	--	--	0.00	--	0.74	17.69
2015	4.49	--	0.01	0.73	0.02	0.01	--	--	0.93	--	--	--	--	--	3.09	9.28
2016	0.60	--	0.00	22.88	0.24	1.91	--	--	2.23	--	--	--	--	--	2.16	30.03
2017	0.58	--	3.64	125.31	140.81	27.73	--	0.00	21.54	0.04	--	--	--	0.01	0.57	320.21
2018	0.69	--	31.75	243.65	85.89	142.16	--	--	3.02	0.67	0.03	--	--	0.00	0.48	508.35
2019a/	64.13	--	--	214.34	31.13	344.52	--	--	--	--	--	--	--	--	--	654.12

a/ 2019 estimated catches are incomplete and considered draft until reconciled by the West Coast Groundfish Observer Program (anticipated in September 2020). The estimated catch was obtained from the Apex Dashboard (Report GMT 007) on the PacFIN web site on February 19, 2020. Commercial catches for all other years were downloaded from the PacFIN web site on December 5, 2019.

1.3 Description of Management Area and Affected Fisheries

The management area for this action is the Exclusive Economic Zone (EEZ)—defined as 3–200 nautical miles from state baselines along the coasts of Washington, Oregon, and California—and communities that engage in fishing in waters off these states. The Pacific Coast Groundfish Fishery management Plan (PCGFMP) Figure 3-1 depicts this management area and is incorporated by reference.

2 Description of Alternatives

The alternatives in this chapter were designed to accomplish the stated purpose and need for the action.

This section is based on the range of alternatives and the FPA adopted by the Council in September 2019 and November 2019 meetings, respectively.

2.1 Alternatives for Cowcod South of 40°10' N lat.

2.1.1 No Action

No regulatory amendment would be considered to revise the 2020 ACT for cowcod south of 40°10' N lat. Annual vessel limits for cowcod would be 858 lbs based on an apportionment of the trawl allocation of the 2020 ACT of 6 mt.

2.1.2 Alternative 1 (Preferred): Eliminate the 2020 ACT for Cowcod South of 40°10' N lat.

Federal regulations would be amended to eliminate the 2020 ACT of 6 mt for cowcod south of 40°10' N lat. under Cowcod Alternative 1. The annual vessel limit for cowcod would be based on an apportionment of the trawl allocation of the 2020 ACL of 10 mt. The effect of adjusting the set-aside to account for research activities in non-groundfish is explored by analyzing the following options.

Reduce the 2020 research set-aside by:

- Option 1: No adjustment: set-aside remains 2 mt. Cowcod annual vessel limit is 1,124 lbs.
- Option 2 (Preferred): 50%: set aside is 1 mt. Cowcod annual vessel limit is 1,264 lbs.
- Option 3: 75%: set aside is 0.5 mt. Cowcod annual vessel limit is 1,335 lbs.

2.2 Alternatives for Shortbelly Rockfish

2.2.1 No Action

No regulatory amendment would be considered to revise the 2020 ACL of 500 mt for shortbelly rockfish.

2.2.2 Alternative 1 (Preferred): Specify a 2020 ACL of 3,000 mt for Shortbelly Rockfish

Federal regulations would be amended to implement a 2020 ACL of 3,000 mt for shortbelly rockfish under Shortbelly Alternative 1. This alternative was recommended by the [GAP in September](#) to avoid overly constraining midwater trawl fisheries north of 40°10' N lat. in 2020.

2.2.3 Alternative 2: Specify a 2020 ACL for Shortbelly Rockfish of 4,184 mt

Federal regulations would be amended to implement a 2020 ACL of 4,184 mt for shortbelly rockfish under Shortbelly Alternative 2. Under this alternative the 2020 ACL would be equal to the proposed 2021 ABC, which is a common harvest control rule for healthy West Coast groundfish stocks with an estimated depletion above B_{MSY} .

2.3 Comparison of Alternatives

The tables below (Table 3 and Table 4) summarize the features under each alternative for cowcod south of 40°10' N lat. and shortbelly rockfish.

Table 3. Summary of the features of the alternatives for cowcod south of 40°10' N lat.

Feature	No Action (mt, lbs)		Alt. 1 (mt, lbs)					
			No Adj. to Set-aside		1/2 Set-aside (Pref.)		1/4 Set-aside	
ACL	10	22,046	10	22,046	10	22,046	10	22,046
Set-aside	2	4,409	2	4,409	1	2,205	0.5	1,102
Fishery HG	8	17,637	8	17,637	9	19,842	9.5	20,944
ACT	6	13,228	NA	NA	NA	NA	NA	NA
Non-trawl Allocation (64%)	3.8	8,466	5.1	11,288	5.8	12,699	6.1	13,404
Trawl Allocation (36%)	2.2	4,850	2.9	6,349	3.2	7,143	3.4	7,540
Annual Vessel limit (17.7%)	0.4	858	0.5	1,124	0.6	1,264	0.6	1,335
Increase in vessel limit (lbs)		0		265		406		476
Increase in vessel limit (%)		0%		31%		47%		55%

Table 4. Summary of the features of the alternatives for shortbelly rockfish

Feature	No Action (mt)	Alternative 1 (mt)	Alternative 2 (mt)
OFL	6,950	6,950	6,950
ABC	5,789	5,789	5,789
ACL	500	3,000	4,184

2.4 Rationale for the Council's Preferred Alternative

In November 2019, the Council selected the Preferred Alternatives for the measures addressed in this document. The sections below detail the Preferred Alternatives. The No Action alternative is not shown as it is detailed above in Section 2.1.1.

2.4.1 Cowcod Preferred Alternative: Eliminate the 2020 ACT for cowcod south of 40°10' N lat. and decrease the research set aside to 1 mt. The cowcod annual vessel limit is 1,264 mt.

Federal regulations would be amended to eliminate the 2020 ACT of 6 mt for cowcod south of 40°10' N lat. under Cowcod Alternative 2. The annual vessel limit for cowcod would be based on an apportionment of the trawl allocation of the 2020 ACL of 10 mt. The set-aside to account for research activities would be reduced by 50% to 1 mt. The cowcod annual vessel limit is 1,264 lbs. This alternative meets the stated purpose and need to reduce the risk that IFQ vessels south of 40°10' N latitude will reach their individual vessel limits of cowcod in 2020 and have to cease fishing in the IFQ fishery for the remainder of the year, which would result in adverse economic impacts on those vessels and fishing communities in the area.

2.4.2 Shortbelly Rockfish Preferred Alternative: Specify a 2020 ACL of 3,000 mt for shortbelly rockfish

Federal regulations would be amended to increase the 2020 ACL for shortbelly rockfish to 3,000 mt. The high bycatch in recent years is likely due to a high abundance and northward extension in distribution of shortbelly rockfish. As discussed in the [November GMT Statement](#) and in Section 3.2.1, recent scientific surveys data suggests that the overall shortbelly rockfish population size was very high from 2017-2019, may continue to be high in 2020, and that the population size in southern California was close to average in 2017 and 2018. Shortbelly rockfish is one of many forage fish in the California Current Ecosystem and other forage species such as anchovy are also relatively high in abundance. As also noted in the GMT report, the high abundance of shortbelly rockfish and other forage species such as anchovy at this time, suggests that bycatch of shortbelly rockfish up to at least the proposed 2021-2022 ABC of 4,184 mt will not harm either the shortbelly rockfish stock or the overall forage base available, and there is no conservation risk in taking up to at least that amount. Furthermore, the GMT's bootstrap projections of a maximum catch of 1,000 mt are highly speculative, due to the volatile, lightning-strike type bycatch events that have occurred, in addition to lower-level accumulating bycatch. The bootstrap projections are also based on recent observations of an unprecedented northward shift of shortbelly rockfish and are therefore highly uncertain. Testimony from the fishing industry demonstrated how the low ACL for shortbelly rockfish can affect the trawl sectors' operations at an individual vessel level. There is no need to risk constraining the whiting fishery due to shortbelly rockfish bycatch at this time, or moving shortbelly rockfish higher in relative bycatch avoidance priority compared to where it currently is, which could negatively impact Pacific whiting operational costs and/or increase the bycatch risk for species of greater conservation concern. Therefore, the Council recommended adopting the ACL of 3,000 mt as the final 2020 ACL, which is just under 75% of the proposed 2021-2022 ABC and should be sufficient to avoid constraining Pacific whiting fishing while continuing to ensure shortbelly rockfish are available as forage.

2.5 Alternatives Considered but not Analyzed Further

The Council initially considered an alternative that increased the 2020 cowcod ACT at their September 2019 meeting. Such an alternative was rejected since the change in the cowcod annual vessel limit was only marginally increased and such a minor increase did not meet the need of affected trawl IFQ participants in the Council's judgement.

In the Council's initial consideration of addressing the trawl bycatch of shortbelly rockfish in their workload planning discussions in June, the idea of designating shortbelly rockfish as an Ecosystem Component species in 2020 was rejected. The analysis and rulemaking was judged to be too complex for an expeditious rulemaking and could not be completed in time to meet the need of the action (i.e. measures in place for 2020).

The Council considered a shortbelly rockfish alternative that would set the 2020 ACL equal to the 2020 ABC of 5,789 mt. However, this alternative was rejected since the new ABC considered for 2021 and beyond was lower due to the Scientific and Statistical Committee's recommendation to specify a higher sigma value and a category 3 designation for shortbelly rockfish resulting in a lower ABC ([September 2019 SSC Statement](#)). Therefore, the Council specified a high ACL alternative of 4,184 mt under Shortbelly Rockfish Alternative 2 for analysis that is consistent with the proposed lower ABC for 2021 and beyond.

3 Tiered Environmental Assessment

There are four required components for an environmental assessment. The need for the proposal is described in Chapter 1, and the alternatives in Chapter 2. This chapter addresses the probable environmental impacts of the proposed action and alternatives (the socioeconomic impacts of this action presented in the Regulatory Impact Review (RIR) and Regulatory Flexibility Analysis (Chapters 4 and 5). A list of agencies and persons consulted is included in Chapter 7. This chapter evaluates the direct, indirect, and cumulative impacts of the alternatives and options on the various resource components.

For each resource component, the analysis identifies information necessary to understand the affected environment, the potential impacts of each alternative, and criteria to evaluate the significance of these impacts.

3.1 Tiering

NEPA regulations at 40 CFR 1508.28 define “tiering” as follows:

“the coverage of general matters in broad environmental impact statements (such as national program or policy documents) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements), incorporating by reference the general discussion and concentrating solely on the issues specific to the statement subsequently prepared” (40 CFR 1508.28).

In 2015, NMFS published the Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods Thereafter Final Environmental Impact Statement (EIS) (PFMC and NMFS 2015; hereafter, “the 2015 EIS”). This EIS analyzed the impacts of both the proposed action of implementing harvest specifications and management measures for the 2015–2016 biennial period and the long-term impacts of the harvest policy framework used to set biennial harvest specifications and the range of management measures necessary to control catch consistent with harvest specifications. NEPA documents for subsequent biennial periods, including the 2019-2020 EA, evaluated changes from default harvest policies and environmental impacts outside the range of impacts evaluated in the 2015 EIS.

This EA is also tiered from the 2015 EIS (as updated by the 2017-18 EA and the 2019-2020 EA) and therefore incorporates the general discussions from those documents while concentrating on the proposed changes for 2020, the Council’s proposed change to the shortbelly rockfish Harvest Control Rule (HCR).

Although changes are also proposed to the cowcod ACT and allocations, these changes would not alter the HCR or associated ACL. Section 4.1 of the 2019-2020 EA explains that the stock assessments and harvest specification projections, as captured in the 2015 EIS and in analyses informing management in subsequent biennial cycles, assume that ACLs are fully attained during the projection period as a default; that is, realized catch equals the ACL. Therefore, the impacts associated with the proposed alternatives for cowcod remain the same as previously analyzed in the 2019-2020 EA and cowcod is not discussed further in this EA.

This EA tiers off the cumulative effects analysis presented in Section 5 of the 2019-2020 EA. Overall, when the proposed action in the 2019-2020 EA was considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, the incremental effect was not expected to result in any significant cumulative impacts, positive or negative, for any affected resource.

Consistent with 2019-2020 EA the geographic scope of this analysis focuses on actions related to the management unit of species in the Groundfish FMP. The geographic scope for groundfish, habitat, and protected species is the West Coast Exclusive Economic Zone (EEZ). For the socioeconomic environment, the geographic scope is defined as those U.S. fishing communities directly involved in the harvest or processing of Council-managed resources, particularly those of the states of Washington, Oregon, and California. The temporal scope of the cumulative effects analysis in this EA is consistent with the 2019-2020 EA, through the 2019–2020 biennial period. The 2020 ACL for shortbelly rockfish will be replaced in 2021 using the best available scientific information developed as part of the 2021-2022 harvest specifications action.

There are no present or reasonably foreseeable future actions not contemplated in the 2019-2020 EA that would have a substantial impact on the resource components addressed in this analysis. Groundfish Amendment 21-4 was effective in early 2020. Salmon bycatch minimization measures in the groundfish fishery are expected to be effective mid-2020. These actions have or would not result in a substantial change in fishing location, timing, effort, authorized gear types, or harvest levels. Therefore, they are not considered in the cumulative effects analysis for this action. No other reasonably foreseeable future actions were identified.

3.2 Resource Components Addressed in the Analysis

In tiering from the 2015 EIS and 2019-2020 EA, this EA focuses only on the changes that relate to the affected environment or environmental consequences for the proposed shortbelly ACL action. The 2018 Groundfish Stock Assessment and Fishery Evaluation (SAFE; PFMC 2018) details the status of groundfish stocks, the fisheries and fishing communities, EFH, and factors affecting safety of life at sea.

The affected environment is described in detail in the 2015 Programmatic EIS and the 2019-2020 EA. The large recruitment and radiation of shortbelly rockfish north of 40°10' N lat. was not understood nor anticipated in either the 2015 Programmatic EIS or the 2019-2020 EA. Therefore, this is discussed in the sections below along with other pertinent updates regarding the status of affected environment.

3.2.1 Target Species

3.2.1.1 Status of Shortbelly Rockfish

Shortbelly rockfish would be affected by the proposed action. Shortbelly rockfish is a healthy and valuable forage species and estimated to have the highest productivity of any West Coast rockfish (Field, *et al.* 2007a,b). Shortbelly rockfish is not targeted in any commercial or recreational fisheries and is only taken incidentally. The stock was last assessed as a research assessment, and

biomass was estimated to be at 67% of unfished levels in 2005 (Field, *et al.* 2007a,b). The 2020 OFL and ABC of 6,950 mt and 5,789 mt, respectively are based on the findings of the stock assessment. The 2019-2020 ACL of 500 mt was set at a low level to accommodate the small amounts of shortbelly rockfish that are incidentally caught and ensure access to co-occurring species while recognizing the stock's importance as a forage fish.

It is posited the order of magnitude increase in shortbelly rockfish bycatch since 2017 was likely due to a climate driven northerly range extension potentially fueled by exceptionally large recruitment in California from 2013-2018 (Schroeder *et al.* 2019, Thompson *et al.* 2019). It is interesting to note that pink shrimp trawl bycatch of shortbelly rockfish in 2017 increased by nearly an order of magnitude relative to the average bycatch in the previous 15 years before returning to an average level in 2018 (Table 2 and Figure 2). Incidental rockfish caught in recent year pink shrimp fisheries tend to be very small young-of-the-year (YOY) fish given the fish excluder grates mandated in pink shrimp trawls. The 2017 spike in shortbelly rockfish bycatch in the pink shrimp fishery could also be indicative of a large recruitment.

To determine if the shortbelly rockfish bycatch could have appreciably harmed the overall population, it is important to address two questions. First, what is the overall status of the stock (e.g., is it relatively robust or depleted)? Second, has the distribution of the entire population shifted north or has the northern limit of its range expanded north while remaining in its historic range?

The last stock assessment of shortbelly rockfish was conducted in 2007 (Field *et al.*, 2007a, b). Given that the population size is known to be highly dynamic (Moser *et al.*, 2000; Field *et al.*, 2007a,b) it is possible that the population size and distribution changed in the ensuing 13 years. Two data sets with information on shortbelly, the Rockfish Recruitment and Ecosystem Analysis Survey (RREAS) and the California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey sets were examined to provide some insight into overall population size and distribution, respectively.

The RREAS uses midwater (30 m) trawls to capture young of the year rockfishes and provides an index of annual rockfish recruitment (Dick and MacCall, 2014; Dick *et al.*, 2017). The "Core" RREAS sample locations are between Monterey Bay and Bodega Bay, California and have been sampled annually since 1990 (Figure 3). The survey expanded to include North-Central, South-Central, and Southern parts of California in 2004 and far North California in 2013 (Figure 4). The RREAS provides information on the relative number of rockfish that survive to become pelagic juveniles. Because mortality for pelagic juveniles is much lower than for larvae, the number of pelagic juveniles correlates positively with the number of one year olds the following year and the number of adults in subsequent years. Thus, if the number of pelagic juveniles is high (i.e., recruitment is high), then it is likely that there will be high numbers of adults in the future. Because 50% of 2-year old shortbelly rockfish are sexually mature (Love *et al.*, 2002), a high recruitment class is likely to augment the spawning stock biomass after just two years. Ageing analyses indicate that 12-year old shortbelly rockfish are common but abundances begin to drop off rapidly at 13 + years old. Hence, a strong recruitment class is likely to comprise a significant portion of the adult population from 2 to 12 years after birth.

The California Current Ecosystem (CCE) experienced a Marine Heatwave (MHW) from 2014-2016, resulting in the warmest 3-year period on record (Jacox, et al., 2017). The unusual oceanographic conditions during the MHW were highly conducive for shortbelly recruitment (Figure 4). In addition, shortbelly recruitment was high in several regions off California in 2013. With the exception of the South (southern California), all RREAS regions recorded historically high shortbelly rockfish recruitment between 2013 and 2016, and recruitment in the Core region in 2013 was more than an order of magnitude higher than previous values dating back to 1990 (Figure 4). Recruitment remained high in 2017 throughout California, and recruitment was 2nd highest in 2017 since 2013 in the North and third highest since 2004 in the South (Figure 4). The extraordinarily high recruitment events between 2013 and 2017 suggest that overall adult shortbelly population size was very high in 2018 and 2019, as virtually all shortbelly rockfish are mature by age 3 (Field et al. 2007a,b). The large recruitment events that occurred 2014-2017, would be expected to contribute to a larger overall biomass until these cohorts are removed from the population through either fishing or natural mortality.

CalCOFI data can help inform whether the shortbelly rockfish stock as a whole moved north versus it is occupying both its historic range that includes southern California as well as the new territory in the north. CalCOFI has systematically collected plankton samples off California since 1951 and is the longest-running ocean monitoring program on the planet (Figure 3). The patterns of mean shortbelly larvae abundance collected by oblique net tows (McClatchie, 2014) during winter, which is the peak shortbelly rockfish spawning season (Moser et al., 2000; Moser et al., 2001) were examined (Figure 5). Larval abundance correlates with adult biomass (Hsieh et al., 2005), and larval abundances is used as an index of spawning stock biomass (Dick and MacCall, 2014). If larval abundance is low in southern California, then it is likely that adult population size is also low and suggests that the stock has redistributed to the north. Alternatively, if larval abundances in southern California are average or high, then there is evidence that the range has expanded rather than shifted.

Shortbelly rockfish larval abundance was slightly below average in 2018 in southern California. Larval abundance in 2018 was the 26th highest out of 48 sample years. It thus appears that while shortbelly rockfish are not booming in southern California, they are present at levels consistent with the long-term average. Notably, the highest shortbelly recruitment in southern California did not occur until 2017, so it is not surprising that spawning stock biomass, inferred through larval abundance, was not elevated in 2018.

Taken together, RREAS and CalCOFI surveys suggest that the overall shortbelly rockfish population was very high in 2018-2019, and that the population size in southern California is at close to average level. The presence of shortbelly rockfish in southern California does not necessarily preclude the possibility that the bulk of the population moved from central or northern California into Oregon and Washington, but it does show that this species has not abandoned the southern portion of its range within California.

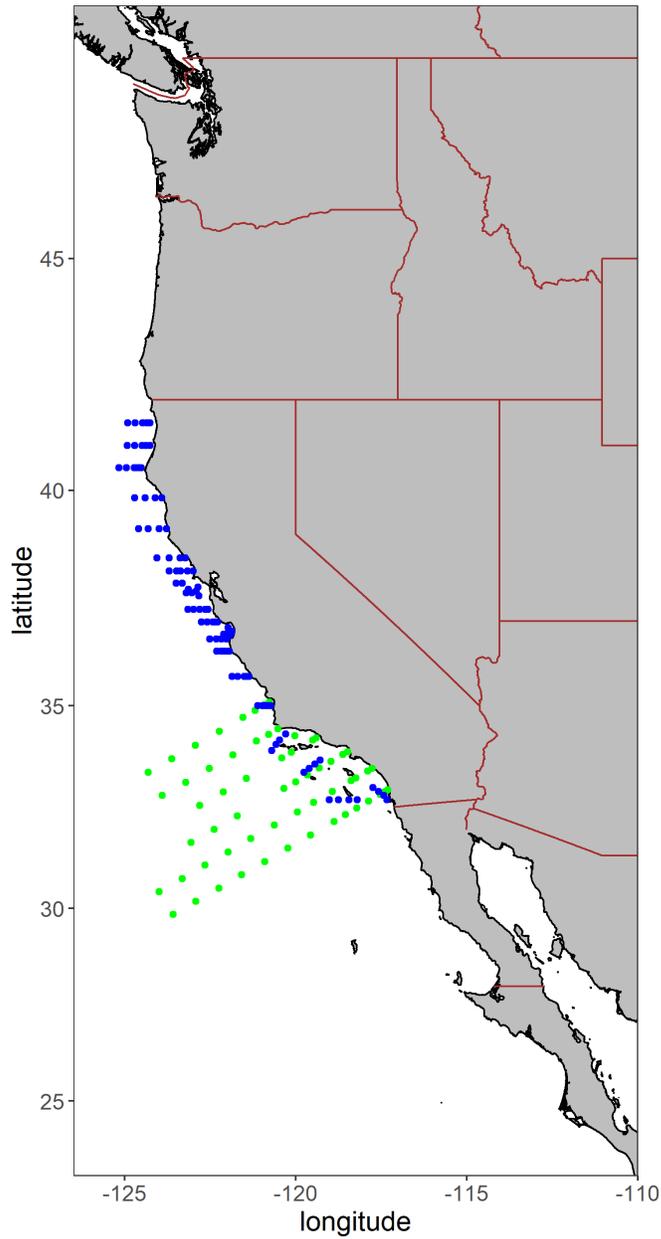


Figure 3. Locations of RREAS and CalCOFI sampling. RREAS locations are subdivided among North, North-Central, Core, North-Southern and Southern regions. The CalCOFI stations depict the 66 core stations that have been sampled regularly since 1951.

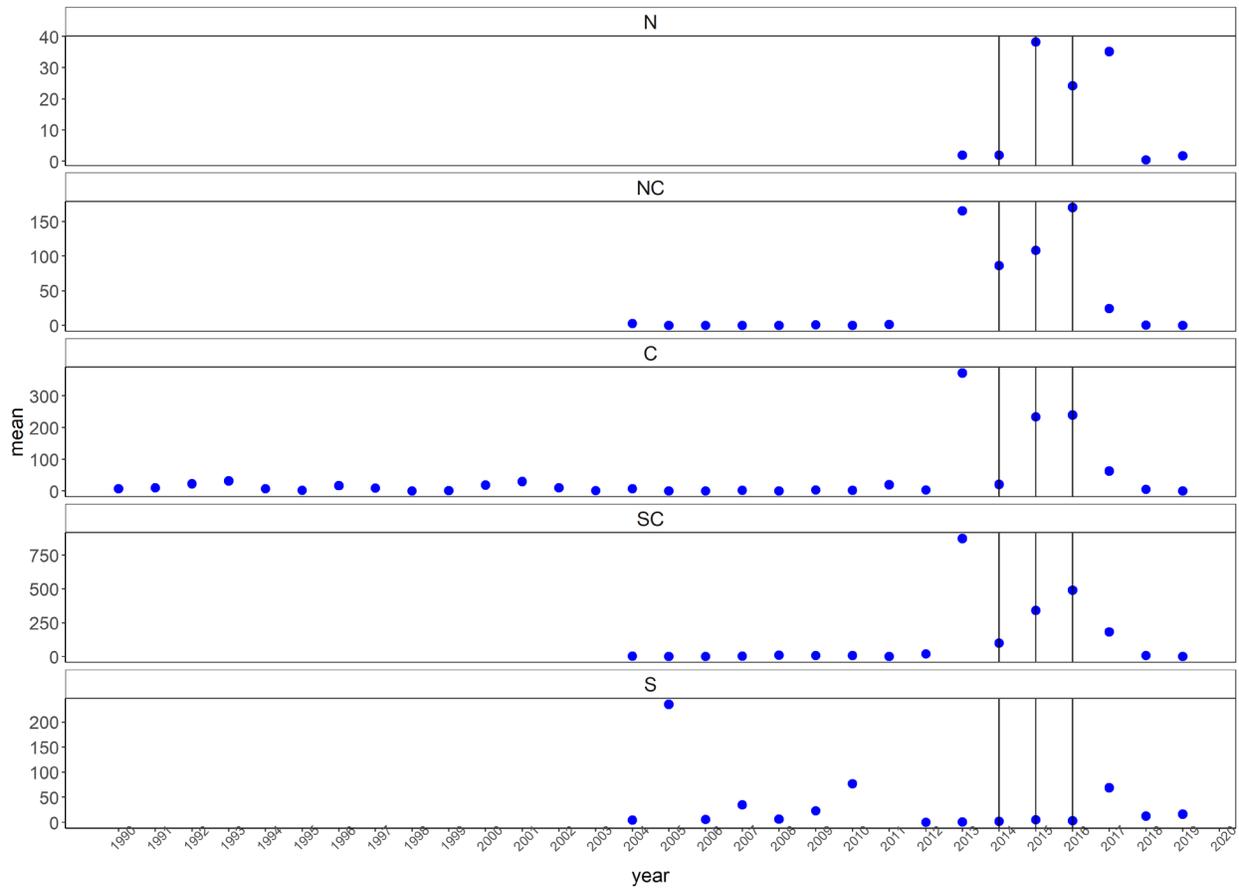


Figure 4. Mean abundance of young of the year shortbelly rockfishes from North (N), North-Central (NC), Core (C), South-Central (SC) and South (S) regions of the RREAS.

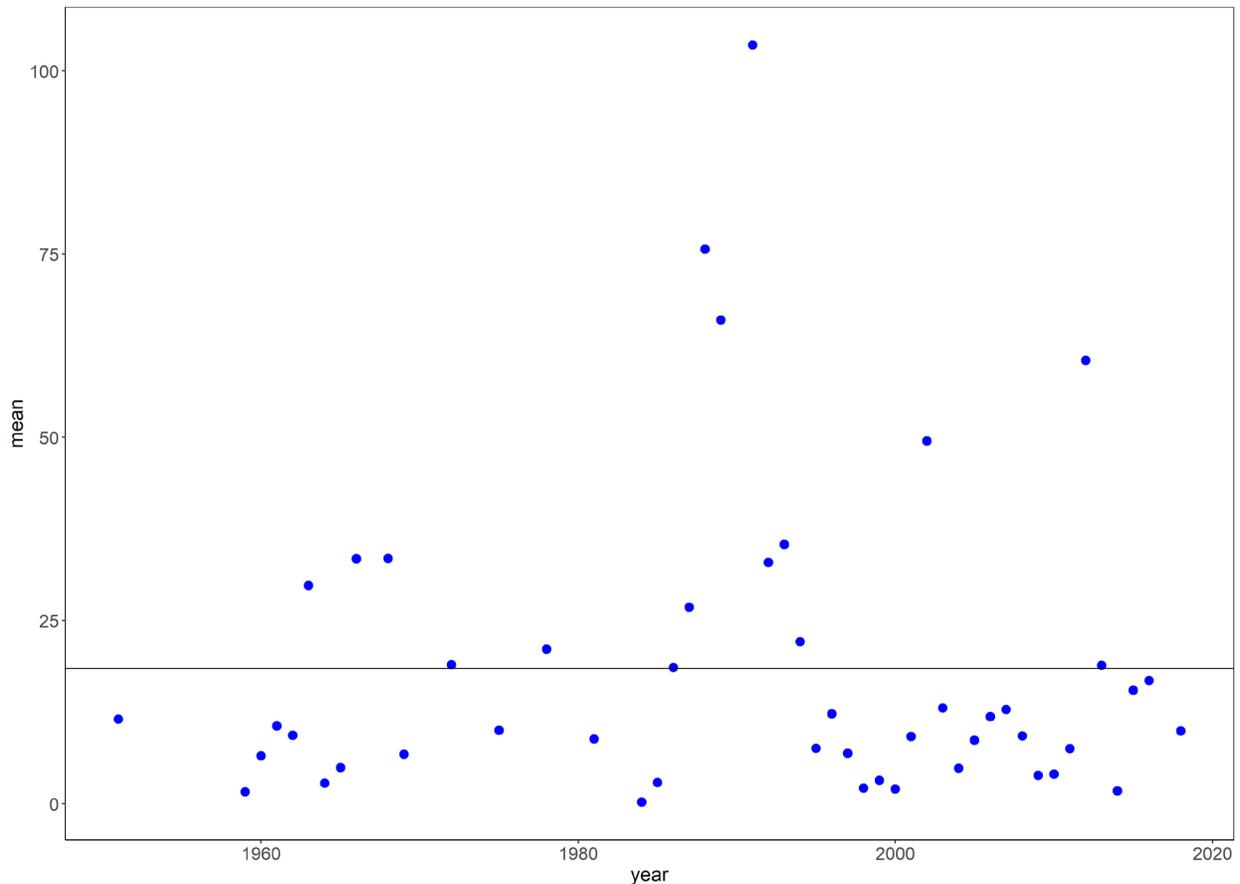


Figure 5. Mean winter larval shortbelly abundances from core CalCOFI stations from 1951-2018. Identification of 2017 are not yet complete and 2017 data was excluded from the plot.

Encounters of shortbelly rockfish in the NMFS West Coast Bottom Trawl Survey were also explored to ascertain whether there was a recent distribution shift of shortbelly rockfish northward or whether the increased bycatch in trawl fisheries north of 40°10' N lat. may have been the result of increased coastwide recruitment. While the bottom trawl survey does not deploy gear selective to a pelagic rockfish such as shortbelly rockfish, the relative encounter rate of shortbelly rockfish north and south in the survey over time shows there have been increased encounters of shortbelly rockfish in the survey off Oregon and Washington since 2013. In addition, there has been a significantly increased encounter rate in the north since 2017 without a coincident decrease in the shortbelly rockfish encounter rate off California (Figure 6). This supports the conclusion that the shortbelly rockfish population did not simply shift to northern waters and the relative abundance of shortbelly rockfish in waters off California has not decreased in recent years. Increased encounters of shortbelly rockfish in northern midwater trawl fisheries is more likely the result of increased recruitment and biomass coastwide coupled with an expansion of its geographic range on the West Coast. It is still unclear whether this pattern of abundance and distribution will persist in the near future.

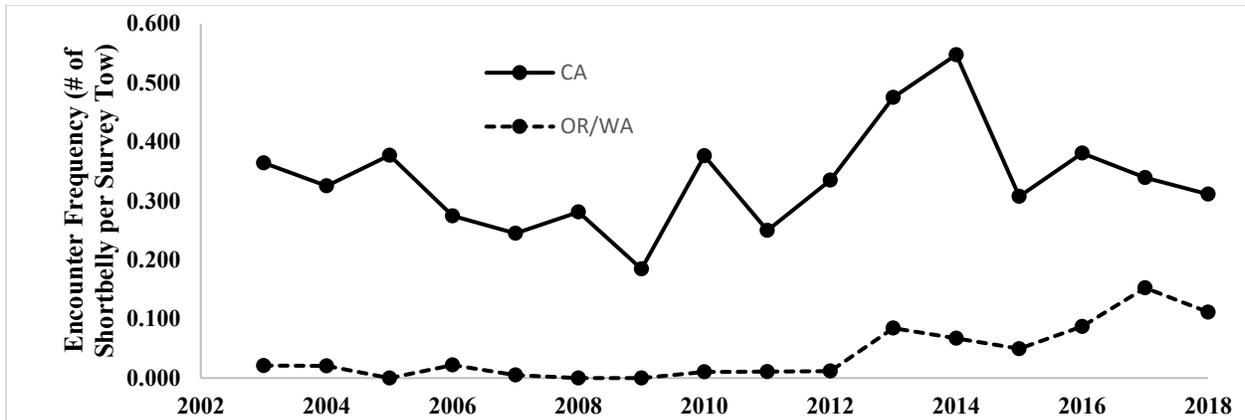


Figure 6. Encounter frequency (number of positive tows with shortbelly rockfish/total number of tows each year) of shortbelly rockfish in the NMFS West Coast Bottom Trawl Survey, 2003-2018.

These data provide empirical evidence that the coastwide shortbelly rockfish population was very high in 2018-2019, and that the population size in southern California is close to average levels. Evaluation of the West Coast Groundfish Bottom Trawl Survey supports the conclusion that the shortbelly rockfish population did not simply shift to northern waters and the relative abundance of shortbelly in waters off California has not decreased in recent years. Increased encounters of shortbelly in northern midwater trawl fisheries is more likely the result of increased recruitment and biomass coastwide coupled with an expansion of its geographic range on the West Coast

3.2.1.2 Effects of the Alternatives

All the shortbelly rockfish action alternatives contemplate increasing the shortbelly rockfish ACL above the No Action 500 mt and are considered as an intermediary measure to reduce the risk of early fishery closures in 2020. The shortbelly rockfish alternatives of increasing the 2020 ACL up to 3,000 mt or 4,184 mt, are anticipated to continue to allow access of fisheries targeting co-occurring species without jeopardizing the shortbelly rockfish population or its role in the ecosystem.

Recent survey and fishery data provide evidence that the coastwide biomass of shortbelly rockfish has increased dramatically in recent years. The analyses provided above document the increased density of shortbelly rockfish north of 40°10' N lat. without a compensating decrease of density in the south. The alternative ACLs are below the Maximum Sustainable Yield (MSY) and therefore would allow for continued surplus production and would not decrease shortbelly rockfish biomass below target harvest levels.

In June 2019, the Pacific Fishery Management Council's Groundfish Management Team (GMT) conducted a bootstrap simulation analysis based on 2017-2019 bycatch levels. This analysis projected the total mortality of shortbelly rockfish from all fishing sectors if the Pacific whiting fisheries caught their entire remaining whiting allocation in 2019, adjusted for the assumed tribal

reapportionment. The results of the bootstrap analysis estimated that the 2019 total mortality of shortbelly rockfish would likely exceed 1,000 mt, or greater (see the GMT's [June 2019 statement](#)).

The GAP recommended the Council select an ACL that is higher than expected bycatch to account for future uncertainty and in order to avoid creating negative impacts on other species of concern such as chinook salmon ([see GAP's November 2019 statement](#)). If the ACL was set too low and the stock size continued to increase resulting in higher bycatch levels, the potential for fishery closures would continue to exist. The GAP recommended an ACL of 3,000 mt to ensure there is reduced risk of closing the groundfish fisheries while still leaving an amount remaining under the expected ABC in recognition of shortbelly rockfish's ecological importance and avoid overly constraining midwater trawl fisheries north of 40°10' N lat. in 2020.

Members of industry are also taking active measures to improve shortbelly avoidance strategies and reduce bycatch. In testimony to the Council in November, Pacific whiting fishermen explained they need to do this not only to reduce the risk of an early fishery closure, but to increase the value of their landed catch given how the spinous shortbelly rockfish caught incidentally in a whiting tow destroy the whiting as they are impinged in the cod end. This is a new challenge to the industry and they explained they are working collaboratively to better differentiate acoustic signatures of schools of Pacific whiting and shortbelly rockfish. Through the Sea State program, vessels fishing in the at-sea whiting fishery already collaborate to identify areas of higher concentration of other sensitive species and they have pledged to the same to avoid shortbelly rockfish. It is likely shortbelly rockfish avoidance strategies will be pursued by the northern midwater trawl fleets if shortbelly continue to persist in the north in high densities regardless of the ACL alternative specified in 2020.

Under the high ACL Alternative 2, the ACL would be set at an amount equal to the anticipated 2021 ABC, which takes into account the new sigma value applied to the ABC. This increased sigma value provides an additional reduction from the OFL to account for increased uncertainty as the number of years increases since a stock assessment was completed (see the Pacific Council's Scientific and Statistical Committee's (SSC's) recommendation on sigma from their [March 2019 statement](#)). The SSC also downgraded the shortbelly assessment from a category 2 (data-moderate) to a category 3 (data-poor) assessment recognizing "the time since the last assessment (2007) now exceeds half the life span of this species and the time-varying sigma for a category 2 stock with a P* of 0.40 in 2021 (14 years since last assessment) and 2022 (15 years) is approaching the category 3 sigma" (see the SSC's [September 2019 statement](#)). There are larger sigmas, which translates into higher ABC buffers, for category 3 stocks relative to category 1 and 2 stocks. These decisions resulted in a proposed 2021 ABC of 4,184 mt, rather than the status quo 5,789 mt. The Council therefore changed the Alternative 2 ABC/ACL for shortbelly rockfish to 4,184 mt for consideration in 2020 to maintain consistency with these decisions.

The Council chose the Preferred Alternative 1 of specifying a 3,000 mt 2020 shortbelly ACL at their November 2019 meeting. This ACL was determined to pose less risk of an early closure of the 2020 whiting fishery or the midwater rockfish trawl fishery north of 40°10' N lat., while not compromising the shortbelly rockfish's importance as a forage species.

Given the increased abundance of shortbelly rockfish, northerly expansion of range, and active incentives to avoid bycatch of shortbelly rockfish, compared to the No Action Alternative, there

would be no significant impacts to the shortbelly rockfish population of setting the 2020 ABC to 3,000 mt or up to the ABC of 4,184 mt. Both alternatives are below the MSY estimated in the 2007 assessment when the stock was limited to a southerly distribution and was likely at lower overall abundance levels. The Preferred Alternative 1 of a 3,000 mt 2020 ACL is more precautionary than Alternative 2 and allows a larger amount of harvestable surplus for forage species.

This action is not anticipated to increase harvest of other groundfish target species compared to the No Action Alternative, with the exception of the whiting fishery which would be able to continue fishing to their sector allocations and not risk an early fishery closure due to increased bycatch of shortbelly rockfish.

The impacts of the No Action alternative of shortbelly rockfish and other groundfish target species would be the similar as the impacts under the preferred alternative as described in the 2019-2020 EA. Given the recent high recruitment events of shortbelly rockfish, the overall stock would likely remain highly abundant as the recent strong year classes continue to mature and contribute to the spawning stock biomass. It is unclear whether shortbelly rockfish distribution will return to a more limited range in southern waters or remain abundant in northern waters as seen in past three years.

Cumulative Effects on Target Species

Considering the direct and indirect impacts of the proposed action when added to the impacts of past, present, and reasonably foreseeable future actions previously analyzed in the 2015-16 EIS and 2019-20 EA, the cumulative impacts of the proposed action are determined to be not significant for target species.

3.2.2 Ecosystem

3.2.2.1 Status

Ecosystems consist of communities of organisms interacting with their physical environment. Within marine ecosystems, competition, predation, and environmental disturbance cause natural variation in recruitment, survivorship, and growth of fish stocks. Human activities, including commercial and recreational fishing, can also influence the structure and function of marine ecosystems. Fishing may change predator-prey relationships and community structure, introduce foreign species, affect trophic diversity, alter genetic diversity, alter habitat, and damage benthic habitats.

The Council's Fishery Ecosystem Fishery Management Plan describes the California Current as a major eastern boundary current that is dominated by strong coastal upwelling, and is characterized by fluctuations in physical conditions and productivity over multiple time scales (PFMC 2013). The food webs in these types of ecosystems tend to be structured around Coastal Pelagic Species (CPS) that exhibit boom-bust cycles over decadal time scales (PFMC 2013). By contrast, the top trophic levels of such ecosystems are often dominated by HMS such as salmon, tuna, billfish and marine mammals, whose dynamics may be partially or wholly driven by processes in entirely different ecosystems, even different hemispheres (PFMC 2013).

The California Current Integrated Ecosystem Assessment (CCIEA) State of the California Current Reports ([Agenda Item E.1.a, NMFS Report 1, March 2019](#), [Agenda Item G.1.a, NMFS Report 1, March 2020](#)) characterize the current status of the CCE, as derived from environmental, biological, economic and social indicators. The status is generally reported by key biogeographic boundaries, including the Northern CCE (north of Cape Mendocino), “Central CCE” (areas between Cape Mendocino and Point Conception), and the “South CCE,” as areas south of Point Conception.

The most unusual feature of the forage community in 2019 was that northern anchovy (*Engraulis mordax*) larval abundances from CalCOFI were nearly double the previous highs from the 1960s ([Agenda Item E.1.a, NMFS Report 1, March 2019](#), [Agenda Item G.1.a, NMFS Report 1, March 2020](#) and Thompson et al. 2019). Further, adult northern anchovy were at record highs throughout most of California based on RREAS midwater trawl surveys. In 2019, market squid, juvenile coho and chum salmon, and several jellies have been abundant forage species in the North CCE. In the Central CCE, adult sardine, which were the most abundant in a decade, market squid and several myctophid species provide abundant forage, while juvenile rockfish had lower abundance following the high peaks in 2014-2017 period. In the South CCE, the forage community has been characterized by abundant larval anchovy and warm-water mesopelagic fishes. As noted above, larval anchovy abundance was the greatest it has been in the history of the CalCOFI time series while larvae of other forage species including rockfish, were near long-term averages or below average for cooler water mesopelagics, sardine, mackerels, sanddabs.

California sea lions (*Zalophus californianus*) fed copiously on northern anchovy and had very high pup productivity in recent years. High northern anchovy recruitment from 2014-2019 suggest that high northern anchovy abundance will continue in coming years. Further north in Oregon, the reproductive rate of a piscivorous bird, common murre (*Uria aalge*), was positively anomalous in 2018 and 2019 for the first time since 2010. Common murre fed mostly on smelts and juvenile flatfishes in 2018, suggesting that abundances of these forage fishes were high in Oregon waters in 2018.

Taken together, surveys of forage and predators throughout the CCE in 2018 and 2019 indicate that forage species other than shortbelly rockfish were unusually abundant and that there was higher than average production of several marine predators.

3.2.2.2 Effects of the Alternatives

The 2015 EIS evaluated the effect of groundfish fishery removals under different harvest policies on trophic composition and interactions (see Section 4.5 in the 2015 EIS). It is not anticipated that an increase in fishing mortality of shortbelly rockfish would negatively affect the role of shortbelly rockfish as forage in the ecosystem. NOAA Fisheries surveys and 2018-2019 State of the California Current reports provide evidence of above average forage conditions in the California Current Ecosystem with higher abundances of forage species such as anchovy and a high overall shortbelly rockfish population in 2018-2019 (Thompson et al. 2019). Further, the higher ACL under the action alternatives are well below the shortbelly rockfish OFL of 6,950 mt, with the impacts under the Preferred Alternative 1, well below the specified 2020 ABC of 5,789 mt or the proposed 2021 ABC of 4,184 mt. The high abundance of additional forage species including northern anchovy, may also lessen any potential impact of shortbelly rockfish bycatch on higher trophic levels in the CCE.

Given the comparative analyses of shortbelly rockfish abundance north and south of 40°10' N lat. provided in Section 3.2.1.1, there has been no decline of shortbelly rockfish density south of 40°10' N lat. The range extension north of 40°10' N lat. is likely to provide another forage species for predators in the north. Field et al. (2007a,b) also concluded the predators in the south preying on shortbelly rockfish in their study did not exclusively prey on shortbelly rockfish when other prey species were abundant; and shortbelly rockfish was one of many species in predator diets. The effect of the shortbelly rockfish recruitment and radiation in the north is likely adding to a thriving forage base.

The No-Action Alternative of maintaining the 2020 ACL of 500 mt may have neutral to positive impacts to forage in the CCE, as other forage species such as northern anchovy are anomalously abundant.

Cumulative Effects on the Ecosystem

Considering the direct and indirect impacts of the proposed action when added to the impacts of past, present, and reasonably foreseeable future actions, the cumulative impacts of the proposed action are determined to be not significant for the ecosystem. The incremental contribution of the proposed action to the cumulative effects would be negligible given the short term nature of this action and that the harvest limits for shortbelly and other target species would remain below overfishing limits.

3.2.3 Protected Species

Protected species considered in this action are the same as considered in the 2015 EIS and 2019 EA (see Section 3.5 in the 2015 EIS, and Section 3.4 in the 2019 EA). This includes those listed under the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA), as well as the effects of actions on seabirds not listed under ESA.

3.2.3.1 Effects of the Alternatives

There are no significant impacts of either alternative (ACL of 3,000 mt or 4,182 mt) to species listed under the Endangered Species Act (ESA), marine mammals, and seabirds. As described in Section 3.2.2, Field et al. (2007a,b) concluded from their study that predators in the south that were preying on shortbelly rockfish did not exclusively prey on shortbelly when other prey species were abundant; and shortbelly was one of many species in predator diets. The State of the California CCE IEA also reports that California sea lions (*Zalophus californianus*) fed copiously on northern anchovy and had very high pup productivity in recent years, and further north in Oregon, the reproductive rate of a piscivorous bird, common murre (*Uria aalge*), was positively anomalous in 2018 and 2019 for the first time since 2010.

The shortbelly rockfish alternatives of increasing the ACL to 3,000 mt or 4,182 mt, may also provide a positive impact to salmon, as the whiting fishery balances avoiding bycatch of multiple species including Chinook and coho salmon. Increasing the shortbelly ACL reduces the constraints and risks of fishery closures due to bycatch of shortbelly rockfish and therefore allows the whiting fleet to actively avoid and minimize bycatch of species of concern, such as Chinook salmon and coho salmon.

The GMT projected impacts of implementing avoidance behaviors to reduce bycatch of shortbelly rockfish ([GMT Statement June 2019](#)). These projections indicated that if the whiting fishery avoided certain depths, including the 100-200 fathom depth zone where bycatch rates have been high from 2017 to 2019, the 500 mt ACL of shortbelly rockfish would still be exceeded. In addition, the depth avoidance behavior may compromise the ability of the fishery to efficiently catch whiting and may result in increased bycatch of other constraining species, including species of higher conservation concerns such as Chinook salmon and coho salmon.

The No-Action Alternative of maintaining the 2020 ACL of 500 mt would continue surplus production of shortbelly rockfish and potential forage in the CCE. Maintaining the 2020 ACL of 500 mt may also result in increased bycatch of species with higher conservation concern such as Chinook salmon and coho salmon, as the whiting fishery moves fishing efforts to avoid bycatch of shortbelly rockfish. The No Action Alternative would have negligible impact on non-salmonid protected species because shortbelly is just one of many species in predator diets.

Cumulative Effects on Protected Species

Considering the direct and indirect impacts of the proposed action when added to the impacts of past, present, and reasonably foreseeable future actions, the cumulative impacts of the proposed action are determined to be not significant for protected species. The incremental contribution of the proposed action to the cumulative effects would be negligible given the short term nature of this action and the negligible to slightly positive impact of the proposed action on protected species.

3.2.4 Habitat

3.2.4.1 Status

Fishing operations may change the abundance or availability of certain habitat features used by managed fish species to spawn, breed, feed, and grow to maturity. These changes may reduce or alter the abundance, distribution, or productivity of species. The effects of fishing on habitat depend on the intensity of fishing, the distribution of fishing with different gears across habitats, and the sensitivity and recovery rates of specific habitat features.

The Council and NMFS have updated available habitat information, and their understanding of the impacts of fishing on habitat, in periodic 5-year reviews of the EFH components in the Council fishery management plans. The 5-year review of groundfish EFH was completed in 2012. These 5-year reviews have not indicated findings different from those in the 2005 EFH EIS with respect to fishing effects on habitat. Maps and descriptions of EFH for groundfish species are available in the applicable fishery management plan.

3.2.4.2 Effects of the Alternatives

Federal regulations to implement the MSA's requirements for EFH at 50 CFR 600.815(a)(7) also regard human activities that may affect species that are the prey of FMP species as having potential effects on EFH functionality. While prey species are not considered habitat, the availability of prey species is considered a component of EFH, similar to temperature, water quality, or sediment type. The loss of prey species within EFH may affect the ability of a managed species to use that EFH

as feeding habitat just as, for example, significant shifts in water quality may affect the ability of a managed species to use an EFH area as feeding habitat.

The 2015 EIS describes impacts of fishing gear on groundfish EFH; effects vary by gear and benthic substrate type. Midwater or pelagic trawls are used to harvest Pacific whiting and some rockfish species off Washington and Oregon. In the Groundfish EFH RCA modifications recently implemented ([Amendment 28 of Groundfish FMP](#)), the general effects of midwater trawl gear were identified as being limited to (1) removal of prey species, (2) direct removal of adult and juvenile groundfish, (3) occasional contact with the bottom, and (4) effects resulting from loss of trawl gear, potentially resulting in impacts to bottom habitats and ghost fishing (Whitmire and Wakefield 2019).

The shortbelly rockfish alternatives of increasing the ACL to 3,000 mt or 4,182 mt are aimed to allow continuation of current levels of harvesting in the Pacific whiting and midwater rockfish fisheries and would not increase overall fishing effort or targeting of shortbelly rockfish. Increased bycatch of shortbelly rockfish in the whiting fishery and midwater trawl fishery may occur if shortbelly rockfish abundance remains high or further increases in the northern waters. This would not be expected to have significant impacts on groundfish EFH, including prey availability, since the increased shortbelly bycatch is a result of an overall increase in abundance and range extension of shortbelly rockfish. As discussed in section 3.2, NOAA Fisheries survey data and fishery data show strong evidence that overall shortbelly rockfish abundance has increased in recent years. Furthermore, while recruitment trends in recent years are close to average levels in southern CCE, they have been high in the northern CCE where the whiting fishing primarily occurs, and therefore resulting in increased interactions.

Impacts of the midwater trawl to bottom habitats might be similar to what is described for bottom trawls over similar habitats, though the geographic extent and frequency of impacts would be much smaller (Appendix C Part 1. of the Pacific Coast Groundfish FMP (Whitmire and Wakefield, 2019)). There are no additional impacts to EFH beyond those previously disclosed in the 2015 EIS and 2019-2020 EA. Section 4.1.1 in the 2015 EIS evaluates the long-term impacts of groundfish fishery management on EFH. EFH bottom habitat is not affected by the proposed shortbelly action because the affected fishery sector predominantly uses mid-water trawl gear.

The No Action Alternative would continue the harvest levels and fishing effort described in the 2019-2020 EA.

Cumulative Effects on Habitat

Considering the direct and indirect impacts of the proposed action when added to the impacts of past, present, and reasonably foreseeable future actions, the cumulative impacts of the proposed action are determined to be not significant for habitat. The incremental contribution of the proposed action to the cumulative effects would be negligible given the short term nature of this action and the negligible impact of the proposed action on habitat.

3.2.5 Socioeconomic

3.2.5.1 Status

The status of the socioeconomic resource is describe in section 4.5 of the RIR.

3.2.5.2 Effects of the Alternatives

The effect of the alternatives on socioeconomics are described in sections 4.6 and 4.7 of the RIR. Overall the action alternatives would have a positive, non-significant impact on socioeconomics by lessening the potential for an early closure of midwater trawl fisheries. The No Action Alternative could have negative, no significant impacts on socioeconomics if it results in an early closure of the midwater trawl fisheries.

Cumulative Effects on Socioeconomics

Considering the direct and indirect impacts of the proposed action when added to the impacts of past, present, and reasonably foreseeable future actions, the cumulative impacts of the proposed action are determined to be not significant for socioeconomics. The incremental contribution of the proposed action to the cumulative effects would be negligible to slightly positive given the short term nature of this action and the positive impact of the proposed action on socioeconomics

3.3 Finding of No Significant Impact (FONSI)

3.3.1 Background

Proposed Action:

The proposed action is to increase the 2020 annual catch limits (ACL) for shortbelly rockfish in the Pacific coast groundfish fishery. Details of the action can be found in the Environmental Assessment (EA). This action is tiered from the Final Environmental Impact Statement (EIS) for Harvest Specifications and Management Measures for 2015-2016 and Biennial Periods Thereafter (as updated by the 2017-18 EA and the 2019-2020 EA).

Alternatives Evaluated in the Environmental Assessment:

No Action: Maintain the 500 mt shortbelly rockfish ACL for 2020.

Alternative 1: Increase the 2020 shortbelly rockfish ACL to 3,000 mt.

Alternative 2: Increase the 2020 shortbelly rockfish ACL to equal the proposed 2021 acceptable biological catch (ABC) of 4,184 mt.

Selected Alternative:

NMFS selected Alternative 1. This is the Pacific Fishery Management Council's Final Preferred Alternative from its November 2019 meeting.

3.3.2 Significance Review

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 C.F.R. § 1508.27). In addition, the Companion Manual for National Oceanic and Atmospheric Administration Administrative Order 216-6A provides sixteen criteria, the same ten as the CEQ Regulations and six additional, for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. *Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?*

No. The proposed action is not reasonably expected to cause significant beneficial or adverse impacts. The proposed action would sufficiently avoid constraining the whiting fishing while continuing to ensure shortbelly rockfish are available as forage. The impacts of the proposed action on the human environment are described in Section 3 of the EA.

2. *Can the proposed action reasonably be expected to significantly affect public health or safety?*

No. The proposed action will not affect the safety of human life at sea. The proposed action is a change in the management of the fishery and would not result in other health or safety effects.

3. *Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?*

No. The Pacific Coast groundfish fishery is not known to take place in any unique areas such as historic or cultural resources, park land, farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. The fishery operates in marine waters off the west coast of the United States. The proposed action would not alter terrestrial resources. The proposed action does not include any new construction or changes to fishing areas. Therefore, it not expected to significantly impact unique characteristics of the geographic area listed above.

4. *Are the proposed action's effects on the quality of the human environment likely to be highly controversial?*

No. The effects of the proposed action are not expected to be highly controversial. All decisions under this action are based on the best scientific information available. Additionally, this is a short term action that will only be effective through 2020. The shortbelly rockfish ACL for 2021 and 2022 will be evaluated and set through the 2021-2022 harvest specifications action. The impacts of the proposed action on the human environment are described in Section 3 of the EA.

5. *Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

No. The effects of the proposed action on the human environment are described in Section 3 of the EA. Under the proposed action, the shortbelly rockfish ACL will be set below the ABC. This is a sustainable level and based on the best available science. Additionally, this is a short term action that will only be effective through 2020. The shortbelly rockfish ACL for 2021 and 2022 will be evaluated and set through the 2021-2022 harvest specifications action. Therefore, the effects of the proposed action on the human environment are not likely to be highly uncertain or involve unique or unknown risks.

6. *Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?*

No. Groundfish fishery management measures, such as the shortbelly rockfish ACL, are set biennially based on best available scientific information. This is a short term action that will only be effective through 2020. The shortbelly rockfish ACL for 2021 and 2022 will be evaluated and set through the 2021-2022 harvest specifications action. Therefore, the proposed action will not be setting precedents for future actions with significant effects or represent a decision in a principle about a future consideration.

7. *Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?*

No. The cumulative effects of the proposed action are detailed in section 3 of the EA. Overall, when the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, the incremental effect of the proposed action would not likely result in cumulatively significant impacts, either positive or negative.

8. *Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?*

No. The impacts of the proposed measures on the human environment are described in section 3 of the EA. No impacts to districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places are expected to occur. Additionally, no impacts are expected that may cause loss or destruction of significant cultural, scientific, or historical resources.

9. *Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?*

No. The proposed action is not expected to have a significant impact on endangered or threatened species, or their critical habitats. The impacts of the proposed action on endangered and threatened species and critical habitat are described in section 3.2.3 of the

EA. An increase in the shortbelly ACL for 2020 may allow the whiting fleet to actively avoid and minimize bycatch of species of concern, such as Chinook salmon and coho salmon. This could have a positive, non-significant impact on these listed salmonids. This action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in the Endangered Species Act consultations for the groundfish fishery.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

No. The proposed action is not expected to alter fishing methods or activities such that they would threaten a violation of Federal, state, or local law or requirements imposed for the protection of the environment.

11. Can the proposed action reasonably be expected to significantly adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

No. The proposed action does not change the timing or location of fishing, nor does it include any new gear adjustments that could change interactions with marine mammals. Therefore, the proposed action is not expected to significantly adversely affect stocks of marine mammals as defined by the Marine Mammal Protection Act.

12. Can the proposed action reasonably be expected to significantly adversely affect managed fish species?

No. While the proposed action increases the 2020 shortbelly rockfish ACL, the ACL would be set below the ABC and is expected to prevent overfishing as well as promote long-term sustainable yield of shortbelly rockfish. The effects of the proposed action on target species are discussed in section 3.2.1 of the EA. The proposed action is not anticipated to increase harvest of other groundfish target species, with the exception of the Pacific whiting fishery which would be able to continue fishing to their sector allocations and not risk an early fishery closure due to increased bycatch of shortbelly rockfish.

13. Can the proposed action reasonably be expected to significantly adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

No. The effects of the proposed action on habitat are discussed in section 3.2.4 of the EA. The proposed action would not be expected to have significant impacts on groundfish essential fish habitat, including prey availability, since the increased shortbelly rockfish bycatch is likely a result of an overall increase in abundance and range extension of shortbelly rockfish. The proposed action does not change gear, methods, or overall distribution of fishing effort, nor does it change any essential fish habitat closures currently in effect. Therefore, the proposed action is not expected to significantly adversely affect essential fish habitat.

14. Can the proposed action reasonably be expected to significantly adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

No. The effects of the proposed action on ecosystems are discussed in section 3.2.2 of the EA. The proposed action does not open any new areas to fishing that are currently closed. Therefore, the proposed action is not expected to adversely affect vulnerable or sensitive marine or coastal ecosystems.

15. Can the proposed action reasonably be expected to significantly adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

No. As described in section 3.2.2 of the EA, an increase in fishing mortality of shortbelly rockfish under the proposed action would not negatively affect the role of shortbelly rockfish as forage in the ecosystem. NOAA Fisheries surveys and State of the California Current reports also indicate above average forage conditions in the California Current Ecosystem with higher abundances of forage species such as anchovy and a high overall shortbelly rockfish population in 2018-2019. The high abundance of additional forage species, may also lessen any potential impact of shortbelly rockfish bycatch on higher trophic levels in the California Current Ecosystem. Additionally, this is a short-term action that will only be effective through 2020. The shortbelly rockfish ACL for 2021 and 2022 will be evaluated and set through the 2021-2022 harvest specifications action. For these reasons, the proposed action is not expected to significantly adversely affect biodiversity or ecosystem functioning.

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

No. Activities under the proposed action will not involve the transport of non-indigenous species. The proposed action does not encourage or allow fishing practices in areas that are not already subject to groundfish fishing. Therefore, the proposed action is unlikely to result in the introduction or spread of a nonindigenous species.

3.3.3 Determination

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the Proposed Regulatory Amendment under the Pacific Coast Groundfish Fishery Management Plan, it is hereby determined that the action to increase the 2020 shortbelly rockfish annual catch limit to 3,000 mt in the Pacific Coast groundfish fishery will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an environmental impact statement for this action is not necessary.



May 27, 2020

For Barry A. Thom
Regional Administrator
West Coast Region
National Marine Fisheries Service

Date

4 Regulatory Impact Review

This Regulatory Impact Review (RIR) examines the benefits and costs of two proposed regulatory amendments: 1) to eliminate the 2020 ACT for cowcod south of 40°10' N lat. and 2) to increase the 2020 ACL for shortbelly rockfish.

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.

4.1 Statutory Authority

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

The groundfish fishery in the EEZ off Washington, Oregon, and California is managed under the PCGFMP. The proposed action under consideration would amend Federal regulations at 50 CFR 660. Actions taken to amend FMPs or implement other regulations governing these fisheries must meet the requirements of Federal law and regulations.

The Council and NMFS consider the proposed actions compliant with the PCGFMP. Mid-cycle changes to harvest specifications and adjustments to management measures are allowed under special circumstances and considerations.

Changes to the shortbelly ACL can be made as allowed in Section 5.5.1 of the PCGFMP which states:

“...OFLs, ABCs, ACLs, OYs, ACTs, HGs, and quotas may only be modified in cases where a harvest specification announced at the beginning of the biennial fishing period is found to have resulted from incorrect data or from computational errors. If the Council finds that such an error has occurred, it may recommend the Secretary publish a notice in the Federal Register revising the incorrect harvest specification at the earliest possible date.”

The shortbelly rockfish default harvest control rule is a constant catch value intended to accommodate observed bycatch levels, discourage targeting, and continue to protect the availability of shortbelly rockfish as a forage species. The 2018 WCGOP data and estimates of shortbelly rockfish bycatch were not available when setting the 2019 and 2020 harvest specifications and this new information compels this consideration.

The cowcod ACT is a management measure intended to address the uncertainty in research impacts and ensure total mortality is within the ACL. Updated information on cowcod research is now available and indicates that a lower set-aside will accommodate planned research activities. PCFMP Section 6.2D describes the process for modifying management measures, which includes a two Council meeting process and a regulatory amendment.

4.2 Purpose and Need for Action

The purpose and need for the proposed action is described in Section 1.1.

4.3 Alternatives

The range of alternatives is described in Chapter 2.

4.4 Methodology for Analysis of Impacts

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

alternatives. The analyst then provides a qualitative assessment of the net benefit to the Nation of each alternative, compared to No Action.

This analysis was prepared using data from the Pacific Fisheries Information Network (PacFIN), the Recreational Fisheries Information Network (RecFIN), and the NMFS West Coast Groundfish Observer Program (WCGOP). These sources provide the best available data on fishery participation and vessel characteristics. The analysis provided in this draft RIR/IRFA was provided by members of the GMT and Council staff.

4.5 Description of the West Coast Groundfish Limited Entry Trawl Fishery

4.5.1 Management Pursuant to the Pacific Coast Groundfish FMP

The Magnuson-Stevens Act and the PCGFMP are founded on two principle mandates: 1) the need to conserve fish stocks, marine resources, and marine ecosystems; and 2) the need to provide net economic benefits to the nation through sustainable management of fisheries. The conservation mandate is addressed in the PCGFMP through its harvest management framework, among other elements of the FMP. Overfishing is prevented by establishing an overfishing limit (OFL) based on the best scientific information available with mechanisms established to prevent total mortality from exceeding the OFL. Harvest limits are buffered by accounting for scientific uncertainty in estimating the OFL by specifying an ABC lower than the OFL with increasingly larger buffers when scientific uncertainty is higher. The Council will often decide a more precautionary harvest limit by specifying an ACL lower than the ABC in cases when there is greater management uncertainty and/or a greater conservation concern. The default HCR for a stock below its biomass management target is a formulaic reduction of the ACL relative to the ABC that is progressively greater when estimated depletion is lower (i.e., the 40-10 and 25-5 rules). Rebuilding plans tend to have even greater ACL buffers to accomplish rebuilding objectives. A further buffer is considered when management and catch monitoring uncertainty are particularly high, as in the case of cowcod south of 40°10' N lat., by specifying an ACT lower than the ACL. Management measures are designed to stay within an ACT when one is specified.

The economic mandate is addressed by managing for optimum yield (OY, the harvest level that provides the greatest long-term economic benefits to the nation) and is operationally implemented by deciding management measures that are estimated to attain but not exceed ACLs. Further objectives in the PCGFMP that address the economic mandate are deciding management measures and allocations that are fair and equitable to all fishery participants and fishing-reliant communities on the U.S. West Coast.

4.5.2 Number of Vessels Affected by the Proposed Action

Cowcod South of 40°10' N lat.

There are a limited number of vessels in the LE trawl sector directly affected by the proposed action. Most of the coastwide trawl fleets operate north of 40°10' N lat. and only the bottom trawl fishery between 34°27' N lat. and 40°10' N lat. (bottom trawl gear is not deployed in the high relief habitats south of Pt. Conception) and the recreational fishery south of 34°27' N lat. tend to incidentally catch cowcod (Table 1). Vessels actively fishing bottom trawl gear south of 40°10'

N lat. approaching the annual cowcod vessel limit are directly affected. Eliminating the 2020 ACT will increase all sector allocations; however, non-trawl sectors have not been close to reaching their allocation limits and therefore likely not affected by this action. The direct effect contemplated by the proposed action increases the annual vessel limit in the LE trawl fishery by 17.7 percent of whatever increase in the trawl sector’s allocation (36 percent) of the ACT or ACL under Alternative 1.

The Council recently completed a formal review of the trawl catch share program (the West Coast Groundfish Trawl Catch Share Program Five-year Review document is available [here](#)). It was acknowledged that the consequence of exceeding an annual vessel limit for a low quota stock like cowcod south of 40°10’ N lat. “may force that vessel out of the groundfish fishery for many years”. In the five-year review of the trawl catch share program, it was estimated there were six vessels cumulatively (some vessels may have attained or exceeded 90% of the annual vessel limit in more than one year during that period) that attained or exceeded the annual vessel limit for cowcod south of 40°10’ N lat. through the first five years of the program (Table 5). Given the increased incidental bycatch in the LE trawl fishery in recent years (Table 1 and Figure 1), the number of vessels with high attainment of the annual cowcod vessel limit has likely increased.

As of September 1, 2019, two of the vessels in the California Groundfish Collective (CGC) have already caught half or more of the vessel cap for 2019 (Figure 7). The vessels would likely be much closer to their vessel caps if not for precautionary behavior in response to the cumulative cowcod catch earlier in the year. If they exceed their vessel caps, they would be completely unable to fish for at least the rest of the year. Given these severe consequences, even getting within half of their vessel caps creates the potential for extreme hardship.

Solutions to this problem, including the potential for an exempted fishing permit (EFP), removing the ACT, and/or reviewing set aside amounts, were forwarded by the Council for more analysis to address the constraining vessel caps while remaining below the overall ACL. The National Marine Fisheries Service expects to issue the CGC an EFP for 2020 that would allow their vessels to pool their cowcod vessel caps. This EFP would provide expeditious relief for the CGC vessels only, whereas the action being considered to remove the cowcod ACT and modify the set-aside amount could benefit all IFQ vessels operating south of 40°10’ N lat.

Table 5. The number of LE trawl vessels that attained or exceeded 90 percent of the annual vessel limit of cowcod south of 40°10’ N lat., 2011-2015 from Table 7 in the [West Coast Groundfish Trawl Catch Share Program Five-year Review document](#).

2011	2012	2013	2014	2015
1	2	0	1	2

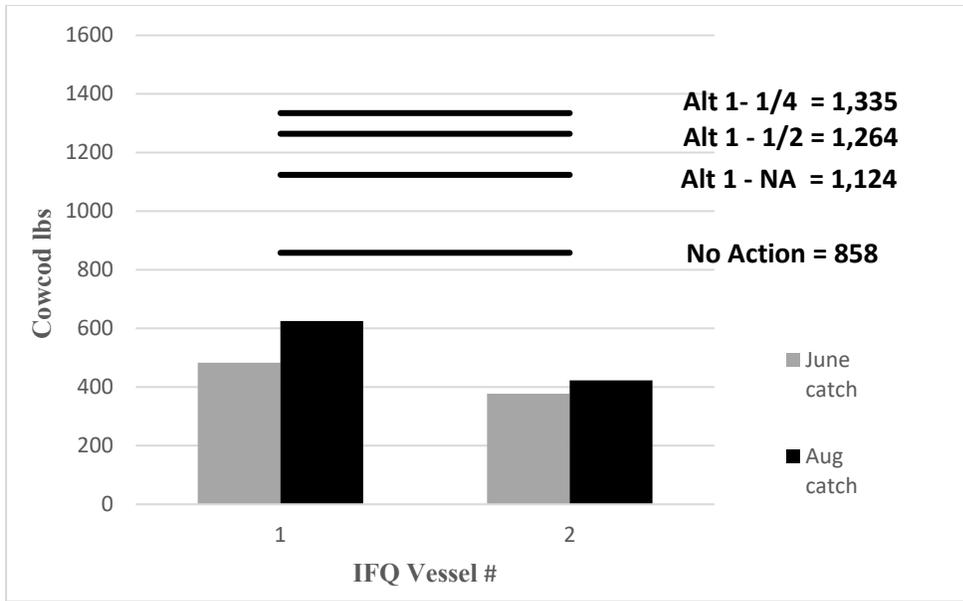


Figure 7. Total 2019 catches through the end of June and the end of August for two of the California Groundfish Collective boats with high cowcod catch in relation to annual vessel limit alternatives (horizontal lines). Permission was given from the CGC to show the catch of the two boats with the highest cowcod catch, which are listed as numbers as to not identify the names of the boats.

In November, the Northwest Fisheries Science Center staff provided an update that the end of year projection for the 2019 hook and line and bottom trawl surveys’ cowcod take was estimated to be 0.47 mt, noting this was a preliminary estimate. The 2019 research projection is very close to the 0.5 mt associated with “Alternative 1: ¼ set-aside” yet expected to be below the 1.0 mt set-aside associated with “Alternative 1: ½ set-aside”, so this option is preferred. If research exceeds the 1.0 mt set-aside, research studies would not be canceled and the overage would be unlikely to cause a risk to the 10 mt ACL, as total mortality has been ~1-3 mt per year since 2011. Higher impacts could occur due to the stock rebuilding, but, at the same time, the stock has been gradually rebuilding, which means a sudden large increase in removals for 2020 compared to the last few years is not anticipated. This option would better reflect the increasing trend in research take, which is presumably related to increased cowcod abundance as well as the hook and line survey fishing in the Cowcod Conservation Areas starting in 2014, while still allowing for an increased vessel cap and fishery flexibility.

Shortbelly Rockfish

The proposed action will primarily affect LE trawl vessels, especially midwater trawl vessels targeting Pacific whiting and semi-pelagic rockfish (i.e., non-whiting) north of 40°10’ N lat. given the sectors and gear experiencing the highest bycatch of shortbelly rockfish in recent years (Table 2 and Figure 2). In 2017, the at sea fleet targeting whiting included 4 Motherships, 15 catcher vessels delivering to Motherships (MS/CV) and 9 catcher processor vessels. In addition there were 25 shoreside catcher vessels targeting whiting and 17 midwater trawl catcher vessels targeting non-whiting rockfish species (Table 6).

Table 6. The number of participating commercial whiting and non-whiting sector vessels by sector and fishery in 2017 (from Somers et al. 2019).

Sector	Fishery	Number of Vessels
Whiting	Mothership	4
	MS Catcher Vessels	15
	Catcher-Processor	9
	Shoreside	25
Non-whiting	Midwater Trawl	17
	Open Access Hook and Line	605
	Limited Entry Hook and Line	3
	Open Access Pot gear	151
	Limited Entry Pot Gear	15
	Bottom Trawl	61

4.5.3 Fishery Participation and Revenue

Revenue by sector and port group from recent groundfish landings are provided in Table 7.

Table 7. Nominal revenue (\$1,000s) from groundfish landings, 2013–17, by IOPAC port and fishery sector. Confidential data is excluded as indicated by “Conf.” Totals and averages for those rows are for non-confidential data only as indicated by shading.

Port Group	Shoreside IFQ (Non-whiting) ^{a/}	Shoreside IFQ Trawl (Whiting)	Non Nearshore Fixed Gear	Nearshore Fixed Gear	Other	Grand Total	Annual Average
Puget Sound	Conf.		\$7,142		\$143	\$11,984	\$2,396.79
North WA coast					\$39	\$3,066	\$613
South and central WA coast	\$5,827	Conf.	\$5,652		\$204	\$11,682	\$2,336
Astoria	\$55,874	\$35,431	\$3,199	\$5	\$2,376	\$96,885	\$19,377
Tillamook			\$269	\$867	\$12	\$1,148	\$230
Newport	\$23,463	\$37,713	\$11,284	\$286	\$1,777	\$74,523	\$14,905
Coos Bay	Conf.		\$5,869	\$385	\$282	\$6,536	\$1,307
Brookings	\$11,096		\$4,054	\$4,715	\$116	\$19,981	\$3,996
Crescent City	Conf.		\$1,194	\$1,464	\$9	\$2,667	\$533
Eureka	\$19,025		\$2,321	\$133	\$44	\$21,523	\$4,305
Fort Bragg	\$11,526		\$5,738	\$969	\$91	\$18,324	\$3,665
Bodega Bay			\$2,836	\$79	\$32	\$2,947	\$589
San Francisco	\$3,125		\$2,493	\$757	\$344	\$6,719	\$1,344
Monterey	\$1,892		\$3,225	\$1,380	\$111	\$6,607	\$1,321
Morro Bay	\$5,761		\$5,866	\$6,123	\$359	\$18,109	\$3,622
Santa Barbara	Conf.		\$10,397	\$1,302	\$510	\$12,210	\$2,442
Los Angeles			\$2,520	\$276	\$117	\$2,914	\$583
San Diego			\$3,423	\$67	\$90	\$3,580	\$716

a/ Includes non-trawl.

4.5.4 Communities

The communities most affected by the proposed action to eliminate the 2020 ACT for cowcod south of 40°10' N lat. in order to raise the vessel limit in the LE trawl catch shares or IFQ program are the main trawl ports south of Cape Mendocino. These communities in order of highest to lowest recent year trawl revenues from the LE trawl IFQ fishery are Fort Bragg, Morro Bay, San Francisco, and Monterey (PFMC 2018).

Those communities most affected by the proposed shortbelly rockfish action to increase the 2020 ACL to 3,000 mt are the main trawl ports in Oregon and Washington, especially those ports with a significant revenue from the whiting fishery. These communities in order of highest to lowest recent year trawl revenues from the LE trawl IFQ fishery are Astoria, Newport, Westport, and Seattle (PFMC 2018).

4.5.5 Vessel Engagement and Dependency

Data for determining vessel engagement and dependence on groundfish resources was downloaded from PacFIN on October 29, 2019. Engagement and dependence of vessels and associated fishing communities, as indexed by total inflation-adjusted revenues by port group in 2016-2018, is provided in Table 8. Vessel engagement and dependence on groundfish resources relative to all fishery resources by West Coast port group is provided in Table 9.

Table 8. Engagement and dependence on groundfish and non-groundfish resources by port group in West Coast fisheries using total inflation-adjusted revenue, 2016-2018.

Port Group	Groundfish	Non-groundfish	Grand Total
Puget Sound	\$10,674,742	\$22,340,251	\$33,014,993
N. WA	\$12,285,370	\$13,947,446	\$26,232,816
S. / Cen. WA	\$28,533,088	\$209,368,628	\$237,901,716
Astoria	\$66,158,707	\$59,187,275	\$125,345,982
Tillamook	\$755,745	\$12,940,965	\$13,696,710
Newport	\$51,707,967	\$115,823,660	\$167,531,627
Coos Bay	\$12,818,125	\$90,403,242	\$103,221,367
Brookings	\$12,460,762	\$41,609,630	\$54,070,392
Crescent City	\$2,751,524	\$57,064,480	\$59,816,004
Eureka	\$16,045,650	\$37,625,294	\$53,670,944
Fort Bragg	\$10,451,612	\$17,484,426	\$27,936,038
Bodega Bay	\$1,847,254	\$33,730,120	\$35,577,374
San Francisco	\$3,981,757	\$85,066,187	\$89,047,944
Monterey	\$3,514,220	\$44,102,552	\$47,616,772
Morro Bay	\$8,758,090	\$15,293,348	\$24,051,438
Santa Barbara	\$10,617,210	\$133,822,698	\$144,439,908
Los Angeles	\$1,575,465	\$66,435,273	\$68,010,738
San Diego	\$1,886,933	\$20,780,895	\$22,667,828
Unknown	\$550,435	\$43,978,568	\$44,529,003
Coastwide	\$257,374,656	\$1,121,004,938	\$1,378,379,594

Table 9. Groundfish engagement (ex-vessel revenue in port as percent of ex-vessel coastwide revenue) and dependence (ex-vessel revenue in port as percent of total ex-vessel revenue in port), using current (inflation-adjusted) dollars for 2018.

Port Group	Engagement	Dependence
Puget Sound	4%	32%
N. WA	5%	47%
S. / Cen. WA	11%	12%
Washington	20%	15%
Astoria	25%	53%
Tillamook	0%	6%
Newport	21%	31%
Coos Bay	5%	12%
Brookings	5%	24%
Oregon	56%	31%
Crescent City	1%	5%
Eureka	6%	30%
Fort Bragg	4%	39%
Bodega Bay	1%	5%
San Francisco	2%	4%
Monterey	1%	7%
Morro Bay	3%	36%
Santa Barbara	4%	7%
Los Angeles	1%	2%
San Diego	1%	8%
California	24%	11%
Coastwide		19%

4.6 Impacts of Alternatives on Cowcod South of 40°10' N lat.

Impacts of the cowcod alternatives are assessed by analyzing the economic effects of revising the annual vessel limit specified for LE bottom trawl participants south of 40°10' N lat.

A summary of the effects of the alternatives for cowcod south of 40°10' N lat. are summarized in Table 10.

Table 10. Summary of the economic effects of the alternatives for cowcod south of 40°10' N lat.

Effect	No Action	Alternative 1	Alternative 2
Risk of Early 2020 Fishery Closure to Affected Trawl Participants	Highest risk of early fishery closure for LE trawl participants approaching the annual vessel limit	Moderate risk of early fishery closure for LE trawl participants approaching the annual vessel limit	Lowest risk of early fishery closure for LE trawl participants approaching the annual vessel limit. Risk is lessened the more the set-aside is reduced.
Economic Impacts to Fishing Communities in central CA (Pt. Conception to 40°10' N lat.)	Highest negative impact to trawl ports	Moderate negative impact to trawl ports	Lowest negative impact to trawl ports
Potential Attainment of LE Trawl Allocations and Quotas of Target Species	Lowest – attainment of healthy target species would likely be lowest due to vessels being constrained by cowcod annual vessel limits	Moderate – attainment of healthy, target species would likely be moderate due to vessels constrained by cowcod annual vessel limits	Highest – attainment of healthy, target species be highest as the constraints caused by cowcod annual vessel limits would be reduced/eliminated.

4.6.1 Impacts of the No Action Alternative

Under No Action regulations, the 2020 ACT for cowcod south of 40°10' N lat. remains unchanged at 6 mt. The total pounds of cowcod allocated to the 2020 Shorebased IFQ program would be 4,850 pounds, of which 17.7 percent or 858 pounds would be the annual cowcod vessel limit. More trawl fishery participants south of 40°10' N lat. would be at risk of early attainment of their cowcod annual vessel limit under the No Action Alternative. Early attainment of the cowcod vessel limit results in participants needing to cease fishing for the remainder of the year. Negative economic impacts are dependent on the amount of quota for target stocks left in the vessel account when the affected participant ceases fishing. Some mitigation of these impacts can occur by leasing this otherwise stranded quota; however, those positive impacts rely on demand for that quota. Negative economic impacts would therefore be greater under the No Action Alternative than under the Preferred Alternative 1.

4.6.2 Impacts of Cowcod Alternative 1

Under Alternative 1 for cowcod south of 40°10' N lat., the trawl allocation of cowcod is based on the specified trawl allocation (36 percent) applied to a revised fishery HG calculated by deducting the yield set-aside from the ACL. If the yield set-aside is not adjusted, the annual cowcod vessel limit increases to 1,124 lbs (a 33 percent increase from No Action). If the yield set-aside is reduced from 2 mt to 0.5 mt, the annual cowcod vessel limit increases to 1,335 lbs (a 58 percent increase from No Action) (Table 3). The preferred alternative eliminates the cowcod ACT and reduces the set-aside amount by 50% to 1 mt resulting in an annual vessel limit of 1,264 lbs, which is 47% higher than the vessel limit under the No Action Alternative (Table 3).

Non-trawl sectors may also be positively affected under the Preferred Alternative 1 since these sector HGs will increase as well. However, the non-trawl commercial sectors and the California recreational sector have been and are anticipated to continue, fishing without impacts even under the No Action Alternative since total fishing mortalities in these sectors have been well below specified HGs.

4.7 Impacts of Alternatives on Shortbelly Rockfish

Any prediction of future incidental bycatch of shortbelly rockfish in trawl fisheries north of 40°10' N lat. is highly uncertain given the unprecedented amount of bycatch observed since 2017. Whether the magnitude of recent bycatch is the “new normal”, whether one can expect an increasing trend in bycatch rates, or whether bycatch will return to pre-2017 levels is a matter of speculation. This will make it very difficult to decide the risk of exceeding any of the alternative 2020 shortbelly ACLs.

Regardless of the ACL decided within the 500-4,184 mt ACL range, there is no anticipation a higher level of allowable harvest will induce targeting of shortbelly given the lack of a market. Industry has indicated that shortbelly rockfish is not currently marketable and does not expect it to become so in the near future. The low ex-vessel price of \$0.01-\$0.03 per pound in recent years supports industry reports that the fish is primarily used as fishmeal or discarded at sea. The median West Coast limited entry trawl permitted vessel has variable operating costs of \$0.46 per pound,

according to the most recent [Economic Data Collection Report](#), and is unlikely to pursue a targeting strategy for such a low value species, as the revenues would be less than typical operating costs. There was also public testimony at the November 2019 Council meeting from participants in the Pacific whiting fishery that they would avoid shortbelly rockfish regardless of a higher ACL. A mixed bag of shortbelly and whiting not only increases the sorting of the low value shortbelly rockfish bycatch, it tends to physically ruin the whiting. This significantly reduces the economic efficiency of the Pacific whiting fishery and reduces the value of whiting quota. Therefore, there is no incentive in that fishery to target shortbelly rockfish and, in fact, much incentive to avoid them.

Additionally, it is not anticipated that an increase in fishing mortality of shortbelly rockfish would negatively affect its role as forage in the ecosystem. Scientific information currently available, including NOAA Fisheries surveys and recent State of the California Current reports, provide evidence of above average forage conditions in the California Current Ecosystem with higher abundances of forage species such as anchovy and a high overall shortbelly rockfish population in 2018-2019 (Thompson et al. 2019). Further, the higher ACL under the action alternatives are well below the shortbelly rockfish OFL of 6,950 mt, with the impacts under the Preferred Alternative 1 well below the specified 2020 ABC of 5,789 mt or the proposed 2021 ABC of 4,184 mt.

As described in Section 3.2.1, it is posited the order of magnitude increase in shortbelly rockfish bycatch since 2017 was due to a climate change-driven northerly range extension potentially accompanied by exceptionally large recruitment. It is interesting the pink shrimp trawl bycatch of shortbelly rockfish in 2017 increased by nearly an order of magnitude relative to the average bycatch in the previous 15 years before returning to an average level in 2018 (Table 2 and Figure 2). Incidental rockfish caught in recent year pink shrimp fisheries tend to be very small young-of-the-year (YOY) fish given the fish excluder grates mandated in pink shrimp trawls. The 2017 spike in shortbelly rockfish bycatch in the pink shrimp fishery could be indicative of a large recruitment.

The degree of socioeconomic impact is dependent on how much quota for target species in midwater trawl fisheries is left stranded when the fisheries close due to exceeding an ACL. Some of these impacts may be mitigated by leasing target species quota (primarily pelagic rockfish) to participants in the non-whiting trawl IFQ fishery using bottom trawls, assuming this fishery is not closed as well. However, any Pacific whiting quota would probably remain stranded and not leased since only the large scale midwater shoreside and at-sea whiting fisheries could use this quota and they are the likely sectors to first close if the shortbelly rockfish ACL is exceeded. The processors and ports where Pacific whiting and pelagic rockfish are delivered in the shoreside whiting fishery (e.g., Astoria, Newport, and Westport) and the at-sea fisheries (primarily Seattle) would also be adversely affected with an early fishery closure.

The magnitude of economic losses due to early fishery closure from attaining the shortbelly rockfish ACL is difficult to project and is dependent on which fisheries would close and when they would close. Table 11 shows the projected income impacts by month and sector in the West Coast groundfish fishery using the Input-Output model for Pacific Coast Fisheries (IO-PAC). Table 12 projects the cumulative impacts of fishery closures based on the IO-PAC model results depicted in Table 11. Impacts range from about \$429 million of foregone income for the worst case scenario of all groundfish fisheries closing coastwide in June to \$4.6 million of foregone income due to a

closure of whiting and midwater trawl fisheries in December (Table 12). Given that midwater trawl fisheries targeting whiting and pelagic rockfish are the most likely to incur a large bycatch of shortbelly rockfish and therefore be subject to an early closure if the shortbelly rockfish ACL is attained, the range of predicted impacts in terms of foregone income is \$4.6 million to \$175.2 million depending on whether there is a late season closure in December or an earlier closure in June (Table 12).

Table 11. Projected loss in personal income in millions of \$USD associated with fishery closures by month.
Source Table C-18 in [Appendix C](#) from 2019-2020 harvest specifications and management measures document.

Month	Whiting Sectors				Non-Whiting Sectors				
	Catcher-Processor	Mothership	Shoreside	Treaty	Midwater	Bottom Trawl	LEFG & OA	IFQ FG	Rec.
Jan	---	---	---	0.2	1.5	3.9	1.7	0	5.4
Feb	---	---	---	0.2	1.6	5.2	1.4	0.1	5.8
Mar	---	---	---	0.6	2.4	6.2	1.7	0.3	15.6
Apr	---	---	---	1.5	0.9	5.4	3.3	0.4	17.8
May	29.4	5.9	1	1.4	1.6	4.8	5.1	0.2	25.1
Jun	9.9	5	6.7	1.4	1.8	4.2	4.8	0.5	35.2
Jul	0	0.9	13.2	2.8	1.2	4.2	4.9	0.9	41.9
Aug	1.8	0.8	16.3	3.4	1.2	4.6	5.3	0.9	35.3
Sep	20.7	4.5	11.7	4.2	1.1	4.2	6.4	2.8	23.4
Oct	22.9	8.9	8.3	2.6	1	4.9	5.4	2.9	17.8
Nov	11.8	2.2	2.5	0.5	1.3	4.5	2.3	1.3	15.1
Dec	2	0.1	0.1	0.3	2.1	5.3	1.8	0.7	12.3

Table 12. Source of projected cumulative impacts of fishery closures based on the IO-PAC model results depicted in Table 11. Scenarios with projected loss in personal income in millions of \$USD associated with early fishery closures.

Scenario	Month of Closure	Foregone Income
Whiting and Midwater Fisheries Close Early	Jun	175.2
	Jul	150.4
	Aug	132.3
	Sep	108.8
	Oct	66.6
	Nov	22.9
	Dec	4.6
Whiting, Midwater, and Bottom Trawl Fisheries Close Early	Jun	207.1
	Jul	178.1
	Aug	155.8
	Sep	127.7
	Oct	81.3
	Nov	32.7
	Dec	9.9
All Fisheries Close Early	Jun	429
	Jul	359.5
	Aug	289.5
	Sep	219.9
	Oct	140.9
	Nov	66.2
	Dec	24.7

4.7.1 Impacts of the No Action Alternative

Under No Action regulations the 2020 ACL remains unchanged at 500 mt. If the ACL is again exceeded, there could be early closures of coastwide fisheries, especially midwater trawl fisheries that take shortbelly rockfish. The relative risk of an early fishery closure is greatest under the No Action Alternative since the shortbelly ACL is lower than those considered under the action alternatives.

4.7.2 Impacts of Shortbelly Alternative 1

The risk of an early closure of midwater trawl fisheries due to exceeding the preferred 3,000 mt shortbelly ACL is much less than under the No Action alternative. The highest annual shortbelly rockfish bycatch observed in all coastwide fisheries is the 654 mt estimated catch in 2019. The bycatch rate dropped dramatically since the whiting fleets began actively avoiding shortbelly rockfish.

4.7.3 Impacts of Shortbelly Alternative 2

The 2020 ACL for shortbelly rockfish is increased to the 2021 ABC or 4,184 mt under Alternative 2. This level of harvest provides the lowest risk of early fishery closures possible given the best scientific information currently available for shortbelly rockfish. It is anticipated the higher ACL will not induce targeting of shortbelly given the lack of a market. A summary of the features and economic effects of the shortbelly rockfish ACL alternatives are summarized in Table 13.

Table 13. Summary of the features and economic effects of the alternatives for shortbelly rockfish.

Feature/Effect	No Action	Alternative 1	Alternative 2
2020 ACL (mt)	500	3,000	4,184
Risk of Early 2020 Fishery Closure of Fisheries that Take Shortbelly Rockfish (primarily LE MW trawl fisheries)	Highest risk of early fishery closure with income impacts on the higher end of the range shown in Table 12	Moderate risk of early fishery closure	Lowest risk of early fishery closure with little or no income impacts
Economic Impacts to Fishing Communities (primarily trawl ports north of 40°10' N lat.)	Highest negative impact with income impact as high as \$429 million if all fisheries close in June (\$175.2 million if midwater trawl fisheries close in June) (Table 12)	Moderate negative impact	Positive impact – most likely to avoid early fishery closures and foregoing income as shown in Table 11 and Table 12
Potential Attainment of Sector (primarily LE trawl) Allocations and Quotas for Pacific Whiting and Other Target Species	Lowest	Moderate	Highest

4.8 Management and Enforcement Considerations

There are no major management or enforcement considerations associated with the proposed actions. There is an extra rulemaking that will need to be done to implement the preferred alternatives adopted by the Council during the November meeting. However, there should be less industry demand for inseason adjustments or emergency actions next year to provide relief from unavoidable bycatch of cowcod south of 40°10' N lat. or for shortbelly rockfish coastwide with the proposed action.

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

Early closure of midwater trawl fisheries in 2020 would represent a significant negative impact to West Coast trawl fishery participants and communities reliant on those fisheries. The midwater trawl fisheries targeting Pacific whiting are the most valuable groundfish fisheries on the West Coast with an average income of \$205.7 million during 2011-2017. The higher the 2020 ACL, the less the risk of fishery closures due to exceedance of the shortbelly rockfish ACL. The negative economic impacts are associated with unused quota of target species due to early fishery closure. The earlier a fishery closure and the more quota left unharvested due to an early closure, the greater the negative economic impact.

5 Initial Regulatory Flexibility Analysis

5.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) addresses the statutory requirements of the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 601-612). This IRFA evaluates the potential adverse economic impacts on small entities directly regulated by the proposed action.

The RFA, first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are 1) to increase agency awareness and understanding of the impact of their regulations on small business, 2) to require that agencies communicate and explain their findings to the public, and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse economic impacts on small entities as a group distinct from other entities, and on the consideration of alternatives that may minimize adverse economic impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either ‘certify’ that the action will not have a significant adverse economic impact on a substantial number of small entities, and support that certification with the ‘factual basis’ upon which the decision is based; or it must prepare and make available for public review an IRFA. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis, unless, based on public comment, it chooses to certify the action.

In determining the scope, or ‘universe’, of the entities to be considered in an IRFA, NMFS generally includes only those entities that are directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis.

5.2 IRFA Requirements

In order to allow the agency to make a certification decision, or to satisfy the requirements of an IRFA of the preferred alternative, this section addresses the requirements for an IRFA. Under 5 U.S.C., section 603(b) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that

will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;

- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
 1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
 2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
 3. The use of performance rather than design standards;
 4. An exemption from coverage of the rule, or any part thereof, for such small entities.

In preparing an IRFA, an agency may provide either a quantifiable or numerical description of the effects of a proposed action (and alternatives to the proposed action), or more general descriptive statements, if quantification is not practicable or reliable.

5.3 Definition of a Small Entity

For any rule subject to notice and comment rulemaking, the Regulatory Flexibility Act (RFA) requires Federal agencies to prepare, and make available for public comment, both an initial and final regulatory flexibility analysis, unless the agency can certify that the proposed and/or final rule would not have a “significant economic impact on a substantial number of small entities”. These analyses describe the impact on small businesses, non-profit enterprises, local governments, and other small entities as defined by the RFA (5 U.S.C. § 603). This analysis is to inform the agency and the public of the expected economic effects of the alternatives, and aid the agency in considering any significant regulatory alternatives that would accomplish the applicable objectives and minimize the economic impact on affected small entities. The RFA does not require the alternative with the least cost or with the least adverse effect on small entities be chosen as the preferred alternative.

The IRFA must only address the effects of a proposed rule on entities subject to the regulation (i.e., entities to which the rule will directly apply) rather than all entities affected by the regulation, which would include entities to which the rule will indirectly apply.

Part 121 of Title 13, Code of Federal Regulations (CFR), sets forth, by North American Industry Classification System (NAICS) categories, the maximum number of employees or average annual gross receipts a business may have to be considered a small entity for RFAA purposes. See 13 C.F.R. § 121.201. Under this provision, the U.S. Small Business Administration established criteria for businesses in the fishery sector to qualify as small entities. Standards are expressed either in number of employees, or annual receipts in millions of dollars. The number of employees

or annual receipts indicates the maximum allowed for a concern and its affiliates to be considered small (13 C.F.R. § 121.201).

A fish and seafood merchant wholesaler (NAICS 424460) primarily engaged in servicing the fishing industry is a small business if it employs 100 or fewer persons on a full time, part time, temporary, or other basis, at all its affiliated operations worldwide.

A business primarily engaged in Seafood Product Preparation and Packaging (NAICS 311710) is a small business if it employs 750 or fewer persons on a full time, part time, temporary, or other basis (13 CFR § 121.106), at all its affiliated operations.

In addition to small businesses, the RFA recognizes and defines two other kinds of small entities: small governmental jurisdictions and small organizations. A small governmental jurisdiction is any government or district with a population of less than 50,000 persons. A small organization is any not-for-profit enterprise that is independently owned and operated and not dominant in its field, while. (5 U.S.C. § 601). There is no available guidance beyond this statutory language regarding how to determine if non-profit organizations are "small" for RFA purposes. The Small Business Administration (SBA) does have provisions for determining whether a business is "small" for RFA purposes and whether it is "dominant in its field," and those provisions can inform how NMFS classifies non-profit organizations for the purposes of RFA analyses in rulemaking. After consultation with the SBA, NOAA Fisheries has decided to use SBA's size standards for non-profit organizations to determine whether a non-profit organization is "small" and, in turn, whether it is "dominant in its field," to apply the statutory definition of a "small organization" in practice:

A nonprofit organization is determined to be "not dominant in its field" if it is considered "small" under SBA size standards:

Environmental, conservation, or professional organizations (NAICS 813312, 813920): Combined annual receipts of \$15 million or less.

Other organizations (NAICS 813319, 813410, 813910, 813930, 813940, 813990): Combined annual receipts of \$7.5 million or less.

Provision is made under SBA's regulations for an agency to develop its own industry-specific size standards after consultation with Advocacy and an opportunity for public comment (see 13 CFR 121.903(c)). NMFS has established a small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing (80 FR 81194, December 29, 2015). This standard is only for use by NMFS and only for the purpose of conducting an analysis of economic effects in fulfillment of the agency's obligations under the RFA.

NMFS' small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing is \$11 million in annual gross receipts. This standard applies to all businesses classified under North American Industry Classification System (NAICS) code 11411 for commercial fishing, including all businesses classified as commercial finfish fishing (NAICS 114111), commercial shellfish fishing (NAICS 114112), and other commercial marine fishing (NAICS 114119) businesses. (50 C.F.R. § 200.2; 13 C.F.R. § 121.201).

5.4 Reason for Considering the Proposed Action

The reason for the proposed action is described in Section 1.1, Purpose and Need.

5.5 Objectives of Proposed Action and its Legal Basis

Under the authority of the Magnuson-Stevens Act, the Secretary of Commerce (NMFS West Coast Regional Office) and the Council have the responsibility to prepare fishery management plans and associated regulations for the marine resources found to require conservation and management. NMFS is charged with carrying out the Federal mandates of the Department of Commerce with regard to marine fish, including the publication of Federal regulations. The West Coast Regional Office of NMFS, and Northwest Fisheries Science Center, research, draft, and support the groundfish management actions recommended by the Council. Commercial groundfish long fisheries are managed under the PCGFMP. The proposed action represents an amendment, as required, to the fishery management plan, as well as amendments to associated Federal regulations.

The principal objective of the proposed action for cowcod is to reduce the risk of an early fishery closure for LE trawl participants south of 40°10' N lat. that might exceed their annual vessel limit. The principal objective of the proposed action for shortbelly rockfish is to reduce risk of early fishery closures for participants of the West Coast groundfish fishery, especially midwater trawl fishery participants north of 40°10' N lat., due to exceeding the 2020 shortbelly ACL.

5.6 Number and Description of Directly Regulated Small Entities

Small entities affected by this action are vessels participating in the groundfish fisheries. The number of entities that could potentially be affected by each FPA is discussed below.

Cowcod

This rule would directly impact two groups: quota share owners of cowcod rockfish south of 40°10' N and catcher vessel owners who operate vessels south of 40°10' N and have the potential to encounter cowcod rockfish. According to the [NOAA Fisheries Pacific Groundfish IFQ Quota Share Account database](#), as of 1/16/2020 there are 62 entities that own 2020 cowcod quota, and there were 7 vessels that caught cowcod south of 40°10' N in 2019 that would be impacted by this rule. The preferred Cowcod alternative will have neutral to positive impacts for LE trawl participants who own quota for this species and/or fish south of 40°10' N lat. Quota owners that are able to sell increased quota amounts may benefit. Most IFQ vessels do not operate south of 40°10' N and would experience no impacts from the preferred alternative.

Based on public comment from the California Groundfish Collective received at the April and June 2019 Council meetings, ([Agenda Item B.1.c, April 2019](#); [Agenda Item B.1.b, June 2019](#)), the current cowcod vessel cap of 858 pounds for the 2019-2020 biennium is likely to constrain their vessels. As of September 1, 2019, two of the vessels in the CGC had already caught half or more of the vessel cap for 2019 (Figure 7). The vessels would likely be much closer to their vessel caps if not for precautionary behavior in response to the cumulative cowcod catch earlier in the year. If they exceed their vessel caps, they would be completely unable to fish for at least the rest of the year. These two vessels will experience positive impacts from the proposed rule. This proposed

rule is not expected to place small entities at a competitive disadvantage to large entities or expected to reduce profit for small entities.

Shortbelly rockfish

The preferred alternative for shortbelly rockfish will primarily affect LE trawl vessels, especially midwater trawl vessels targeting Pacific whiting and semi-pelagic rockfish (i.e., non-whiting) north of 40°10' N lat. given the sectors and gear experiencing the highest bycatch of shortbelly rockfish in recent years (Table 2 and Figure 2). In 2017, there were 25 catcher vessels targeting shoreside whiting and 17 midwater trawl catcher vessels targeting non-whiting rockfish species (Table 6). The preferred alternative would have neutral to positive impacts for these vessels since the higher ACL for shortbelly rockfish would reduce the risk of an early closure to their fishing if increased levels of shortbelly rockfish occurs in 2020. This proposed rule is not expected to place small entities at a competitive disadvantage to large entities or expected to reduce profit for small entities.

5.7 Recordkeeping, Reporting, and Other Compliance Requirements

No additional reporting or recordkeeping is required of the regulated entities under the proposed actions.

5.8 Federal Rules that may Duplicate, Overlap, or Conflict with Proposed Action

An IRFA is required to identify whether relevant Federal rules have been identified that would duplicate or overlap with the proposed action. There are no Federal rules that duplicate the proposed regulations under this action.

5.9 Description of Significant Alternatives to the Proposed Action that Minimize Economic Impacts on Small Entities

An IRFA also requires a description of any significant alternatives to the proposed action(s) that accomplish the stated objectives, are consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities.

The No Action alternatives would not achieve the objectives and needs described in Section 1.1. The alternatives proposed were done so within the Council public process and development was undertaken with stakeholder participation. The proposed changes are expected to provide economic relief to fishery participants and reduce the risk of early fishery closures on small entities.

In the process of developing this action, a number of alternatives (Section 2.5) were considered but rejected. These alternatives include:

- Increase the 2020 cowcod ACT;
- Designate Shortbelly Rockfish as an Ecosystem Component Species; and

- Set the 2020 Shortbelly Rockfish ACL equal to 2020 ABC of 5,789 mt.

The Council initially considered an alternative that increased the 2020 cowcod ACT at their September 2019 meeting. Such an alternative was rejected since the change in the cowcod annual vessel limit was only marginally increased and such a minor increase did not meet the need of affected trawl IFQ participants in the Council's judgement.

In the Council's initial consideration of addressing the trawl bycatch of shortbelly rockfish in their workload planning discussions in June, the idea of designating shortbelly rockfish as an Ecosystem Component species in 2020 was rejected since the analysis and rulemaking was judged to be too complex for an expeditious rulemaking that would be effective for less than one year.

The Council considered a shortbelly rockfish alternative that would set the 2020 ACL equal to the 2020 ABC of 5,789 mt. This alternative may have less economic impact if shortbelly rockfish bycatch reach the highest levels. However, this alternative was rejected since the new ABC considered for 2021 and beyond was lower due to the Scientific and Statistical Committee's recommendation to specify a higher sigma value and a category 3 designation for shortbelly rockfish resulting in a lower ABC based on the best available scientific information available. The Council specified a high ACL alternative of 4,184 mt as the FPA Shortbelly Rockfish Alternative that is consistent with the lower ABC for 2021 and beyond and adequately meets the purpose and need identified for this action.

6 Magnuson-Stevens Act

6.1 Magnuson-Stevens Act National Standards

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

National Standard 1 — Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

The PCGFMP determines how overfishing and OY are determined for all Pacific Coast groundfish stocks and provides measures by which the fisheries are managed in order to prevent overfishing and achieve OY. The proposed actions do not increase the risk of overfishing cowcod south of 40°10' N lat., shortbelly rockfish, nor any other actively-managed stock or stock complex. The fundamental objective of the proposed actions is to remove regulatory barriers to better achieve OY of target species while continuing to minimize bycatch of incidental species.

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

The proposed actions analyzed in this document utilizes the best scientific information available on stock assessments of cowcod south of 40°10' N lat. (Dick and MacCall, 2014) and shortbelly rockfish (Field et al. 2007a,b), as well as recent fishery-independent survey data and fishery operation off the West Coast.

The 2020 harvest specifications (OFL, ABC, and ACL) for cowcod are based on the 2013 stock assessment (Dick and MacCall, 2014) that was available when setting harvest specifications for the 2019-2020 biennial management cycle. While a new benchmark assessment was completed during the summer of 2019 and adopted at the September 2019 Council meeting, it was adopted after this action was initiated and it would be out of the scope of this action to change the 2020 OFL and ACL amounts for cowcod based on this new assessment. This new assessment indicates the cowcod stock is rebuilt at 57 percent of its unfished level and supports the determination that there are no conservation concerns by changing the 2020 ACT for cowcod. The new cowcod stock assessment will be used to set harvest specifications and management measures for the 2021-2022 management cycle.

The shortbelly rockfish ACL under Alternative 2 uses the new sigma value and stock category designation to determine the ABC as recommended by the SSC for 2021 and beyond. Initially, that alternative was informed by the old sigma and category designation used through 2020 and has been updated using the new science.

National Standard 3 — To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The PCGFMP manages stocks as a unit and utilizes stock complex designations and measures in order to manage interrelated stocks of fish as a unit. The proposed actions do not affect the management of the stocks of PCGFMP management unit species.

National Standard 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be; (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed actions would apply to any commercial or recreational groundfish vessel authorized to fish in the West Coast EEZ. The proposed actions would not allocate or assign fishing privileges.

National Standard 5 — Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

This proposed actions would provide relief and increase efficient resource utilization by reducing the risk of an early fishery closure to affected fishery participants vulnerable to the bycatch of cowcod south of 40°10' N lat. or shortbelly rockfish coastwide.

While a higher shortbelly rockfish ACL in 2020 would decrease the risk of a premature closure of the Pacific whiting fishery due to shortbelly ACL attainment, having another species to avoid (there is active avoidance of Chinook and coho salmon, as well as canary rockfish, darkblotched rockfish, rougheyeye rockfish, yellowtail rockfish, Pacific ocean perch, sablefish, and other non-target species) reduces the economic efficiency of Pacific whiting operations. According to public testimony of Pacific whiting fishermen at the November Council meeting, they would avoid shortbelly rockfish regardless of any proposed action due to the deleterious impact shortbelly rockfish has on Pacific whiting when they are comingled in a trawl net.

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 proposed actions adapt to two emerging issues affecting the 2020 West Coast groundfish fishery: 1) increased encounters with cowcod south of 40°10' N lat. as they rebuild, and 2) the apparent northerly distribution shift of shortbelly rockfish that has increased the incidental bycatch of shortbelly in large midwater trawl fisheries north of 40°10' N lat.

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

The proposed actions do not create unnecessary duplication. It will be incumbent on the participants in the Pacific whiting fishery to determine how to efficiently minimize costs of avoiding shortbelly rockfish. In their testimony to the Council in November, Pacific whiting fishermen said they are learning how to differentiate schools of shortbelly rockfish and Pacific whiting on their sonars, which is a new challenge since the shortbelly range extension observed in

recent years. Their success in detecting shortbelly rockfish schools before deploying a trawl net will lead to minimizing the costs associated with avoiding shortbelly rockfish.

National Standard 8 — Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The proposed action to eliminate the 2020 ACT for cowcod south of 40°10' N lat. does not contemplate a change to the ACL, which implements the rebuilding strategy specified in the rebuilding plan. The proposed action is intended to make the LE trawl fishery south of 40°10' N lat. more efficient by increasing the annual vessel limit of cowcod on LE trawl vessels approaching the status quo vessel limit. This action should allow the fishery to be more economically efficient at attaining their allocated quotas of target species. Increased trawl landings and revenue in ports south of 40°10' N lat. will benefit those communities that depend on those landings. Premature closure of fishery participants will harm those communities where those participants land their catch and where that catch is processed.

The proposed action to revise the 2020 ACL for shortbelly rockfish will not induce targeting. The stock will still be managed conservatively as a forage species in the California Current ecosystem. The action is proposed to reduce the risk of shutting down 2020 fisheries due to exceeding the shortbelly ACL should they again aggregate in northern waters where midwater trawl fisheries are conducted. The considerations for this action are primarily economic given the importance of the high value midwater trawl fisheries to dependent communities north of 40°10' N lat. Increased midwater trawl landings and revenue in ports north of 40°10' N lat. will benefit those communities that depend on those landings. Premature closure of these fisheries will harm those communities where Pacific whiting and pelagic rockfish targeted by midwater trawls land their catch and where that catch is processed. A higher shortbelly ACL will reduce the risk of a premature closure of the midwater trawl fisheries targeting Pacific whiting and pelagic rockfish and will mitigate the risk and minimize adverse economic impacts to affected communities.

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.

The proposed action to revise the 2020 ACT for cowcod south of 40°10' N lat. does not contemplate a change to the ACL. The objective is provide a higher annual vessel limit to participants in the LE trawl fishery south of 40°10' N lat. approaching their vessel limit. This only changes the limit of cowcod QP a vessel can use in 2020 to allow continued fishing opportunity to attain their quota of target species. While the proposed action will allow for an increase in the amount of bycatch of cowcod needed to access other healthy and co-occurring target species, the total mortality is expected to remain well below the ACL.

Increasing the 2020 shortbelly rockfish ACL is not expected to induce targeting of the species. Bycatch of shortbelly will likely depend on unpredictable environmental conditions that influence

their distribution. To the extent shortbelly rockfish continue to aggregate in waters north of 40°10' N lat. and are incidentally caught in midwater trawl fisheries, the at-sea whiting fleets have demonstrated the ability to minimize bycatch by self-reporting of high bycatch events and moving from areas of aggregation. While this proposed action allows for an increase in the amount of bycatch of shortbelly rockfish needed to continue midwater trawl fishery operations targeting species such as Pacific whiting and pelagic rockfish, the total mortality is expected to remain below the ACL and allow for continued surplus production to support its role as a forage species in the California Current Ecosystem.

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

The proposed actions will not affect the safety of human life at sea.

7 Preparers and Persons Consulted

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Members of the Pacific Council's Groundfish Management Team provided some of the discussion and economic analysis.

Dr. Andrew Thompson, Southwest Fisheries Science Center and GMT, provided the CalCOFI and RREAS analyses of shortbelly rockfish larval abundance in Section 4.7.

Dr. Chantel Wetzel, Northwest Fisheries Science Center and GMT, provided the analysis of shortbelly rockfish encounters in the West Coast Bottom Trawl Survey in Section 4.7.

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