MRB

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

MAR 24 1998

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act, an environmental review has been performed on the following action.

TITLE: Environmental assessment and Regulatory Impact review for a regulatory amendment to revise maximum retainable bycatch percentages for shortraker/rougheye rockfish in the Bering Sea and Aleutian Islands Management Area

LOCATION: Federal Waters of the Bering Sea and Aleutian Islands

SUMMARY: This action establishes reduced maximum retainable bycatch (MRB) percentages for shortraker and rougheye rockfish caught in the Aleutian Islands area. MRB percentages are a management tool to slow down the rate of harvest of a species placed on bycatch catch status and reduce the incentive to operators of fishing vessels to target on the species. This action establishes a bycatch species group for shortraker and rougheye rockfish in the Aleutian Islands subarea. The MRBs for these species are reduced from 15 to 7 percent for deep-water species and from 5 to 2 percent for shallow-water species. The new MRBs are intended to minimize the regulatory discard of these species and slow the rate of harvest to reduce the potential for overfishing.

RESPONSIBLE OFFICIAL: Steven Pennoyer
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The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared.

A copy of the finding of no significant impact, including the environmental assessment, is enclosed for your information. Also, please send one copy of your comment to me in Room 5805, PSP, U.S. Department of Commerce, Washington, D.C. 20230.

Sincerely,

Susan Fruchter

Susan Fruchter
Acting NEPA Coordinator,

Enclosure

FINAL
ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW

FOR A REGULATORY AMENDMENT TO

REVISE MAXIMUM RETAINABLE BYCATCH PERCENTAGES FOR SHORTRAKER/ROUGHEYE ROCKFISH IN THE BERING SEA AND ALEUTIAN ISLANDS MANAGEMENT AREA

Prepared by staff of the
Alaska Department of Fish and Game
and the
National Marine Fisheries Service
Alaska Regional Office

*February 25, 199*8

TABLE OF CONTENTS

Executive Summary

Regulations at 50 CFR part 679.20(e) establish maximum retainable bycatch (MRB) percentages for groundfish species or species groups. These MRB percentages establish the amount of a species that may be retained on board a vessel relative to amounts of other retained species open to directed fishing. MRB percentages serve as a management tool to slow down the rate of harvest of a species placed on bycatch status and to reduce the incentive to fishing vessels to target on the species. Nonetheless, vessels may "top off" their retained catch of species open to directed fishing with a species on bycatch status up to the MRB amount. MRB percentages do not necessarily reflect an "intrinsic" incidental catch rate, but rather reflect a balance between the recognized need to slow harvest rates, minimize the potential for undesirable discard, and, in some cases, provide an increased opportunity to harvest available total allowable catch (TAC) through limited "topping off" activity.

At its June 1997 meeting, the North Pacific Fishery Management Council (Council) requested that NMFS explore options for reducing MRB percentages for shortraker and rougheye rockfish (SR/RE) in the Aleutian Islands subarea (AI) to respond to high rates of bycatch in other groundfish fisheries and to concerns that the existing MRB percentages are higher than incidental catch levels, thus allowing for undesirable levels of "topping off" of the valuable rockfish species. This was prompted by the low ABC/TAC and biomass of SR/RE in the AI.

Alternative 1: Status Quo - Do not revise existing MRB percentages.

Alternative 2 (Preferred): Revise MRB percentages for shortraker rougheye rockfish in the Aleutian Islands subarea as follows. Options for a reduced MRB percentage relative to deepwater and shallow water species complexes are as follows .

	MRB percentage relative to the Deepwater complex (rockfish, Greenland turbot, sablefish, flathead sole)	MRB percentage relative to the Shallow water complex (pollock, P. cod, Atka mackerel, flatfish, other species, non groundfish)
Current MRB (Alternative 1)	15	5
Alternative 2 options	9	3
	7 (preferred)	2 (preferred)
	5	1
	3	

Based on an analysis of 1995 and 1996 observer data, aggregated rockfish are commonly encountered in the Atka Mackerel fishery, and the overall bycatch rates are near the MRB level. However, the majority of

bycaught shortraker/rougheye are caught in only a few hauls. In 1995, 74% of the bycaught shortraker/rougheye were taken in 3.6% of the Atka Mackerel hauls, and in 1996, 70.2% of the shortraker/rougheye were taken in 3.1% of the hauls. The POP fishery, on the other hand, has an overall bycatch rate of non-POP rockfish well below the established MRB of 15%, however, non-target rockfish are more commonly encountered in individual tows. There is also considerable variability between years in the POP fishery. Roughly 25% of the hauls caught rockfish at a rate greater than 7% in 1995, and these hauls accounted for 72% of the bycaught rockfish. In 1996, 46.4% of the hauls caught rockfish at a rate greater than 7%, and these hauls accounted for 82% of the rockfish bycatch. Similarly the hauls with shortraker/rougheye bycatch rates above 7% in 1995 accounted for 10% of the hauls and represented 50% of the shortraker/rougheye bycatch, but in 1996, 28.6% of the hauls exceeded 7% and these hauls accounted for 78% of the shortraker/rougheye bycatch.

Industry reported data on retained catch composition do not indicate that MRB percentages established for SR/RE are being violated routinely. Instead, these data indicate that the current MRB percentages are fairly generous relative to the amounts of SR/RE that actually are retained relative to other retained catch. Based on weekly production reports submitted since 1995, the overall ratio of retained amounts of SR/RE in the rockfish fisheries relative to other retained catch has ranged from 4.5 to 5.7 percent. The MRB percentage for SR/RE in this fishery is 15 percent. During the same time period, the retained amount of SR/RE in the Atka mackerel fishery relative to other retained catch has ranged from and overall rate of 0.08 to 0.2 percent. The MRB percentage for SR/RE in this fishery is 5 percent.

To the extent that Alternative 2 would implement reductions to specified MRBs, slower harvest rates would result, management ability would be enhanced to maintain harvest amounts within specified TACs, and the potential of reaching overfishing levels would be lessened. This alternative, therefore, would facilitate NMFS's ability to manage fisheries within the TAC levels assessed by the annual EA prepared for the groundfish specifications and within the scope of effects the annual EA determines these harvest levels may have on the biological environment as well as associated impacts on marine mammals, seabirds, and other endangered or threatened species and critical habitat.

At its September 1997 meeting, the Council recommended that MRB percentages for SR/RE in the AI be reduced to 7 percent relative to other rockfish species, Greenland turbot, sablefish and flathead sole and to 2 percent relative to other groundfish and non groundfish species. The MRB percentage relative to arrowtooth flounder would remain at 0 percent. These percentages are intended to reduce the incentive to top off target catch with SR/RE while minimizing the potential for regulatory discards of SR/RE during a fishing trip. The catch rates of SR/RE should decrease accordingly. Nonetheless, overall bycatch amounts still could pose concern given the small TAC amounts annually specified for SR/RE and the high volume POP and Atka mackerel trawl fisheries in the AI. As a result, the Council intends to consider in the future management measures that would authorize a gear allocation of SR/RE so that inseason management actions can be taken to control trawl bycatch more effectively without threatening the closure of the fixed gear fisheries.

A significant negative economic impact on the catcher vessels that retain SR/RE is not likely as a result of the proposed action given the small amounts of these rockfish species that have been retained by catcher vessels fishing in the AI subarea in past years (3,000 lbs in 1996). Conversely, the proposed action is expected to have a positive impact to the extent that the reduced MRBs percentages for SR/RE would reduce the potential for reaching the specified overfishing level and limit the number of required fishery closures necessary to keep bycatch amounts of SR/RE at a minimum. Given the above assessment, NMFS

has determined that the proposed action would not result in a significant economic impact on a substantial number of small entities. As a result, a regulatory flexibility analysis was not prepared.

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1.0 INTRODUCTION

The groundfish fisheries in the Exclusive Economic Zone (EEZ) (3 to 200 miles offshore) off Alaska are managed under the Fishery Management Plan for Groundfish of the Gulf of Alaska and the Fishery Management Plan for the Groundfish Fisheries of the Bering Sea and Aleutian Islands Area. Both fishery management plans (FMPs) were developed by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The Gulf of Alaska FMP was approved by the Secretary of Commerce and become effective in 1978 and the Bering Sea and Aleutian Islands Area (BSAI) FMP become effective in 1982.

Actions taken to amend the FMPs or implement other regulations governing the groundfish fisheries must meet the requirements of Federal laws and regulations. In addition to the Magnuson-Stevens Act, the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA).

NEPA, E.O. 12866 and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in Section 1 of this document. Section 2 contains information on the biological and environmental impacts of the alternatives as required by NEPA. Impacts on endangered species and marine mammals are also addressed in this section. Section 3 contains a Regulatory Impact Review (RIR) which addresses the requirements of both E.O. 12866 and the RFA that economic impacts of the alternatives be considered.

This Environmental Assessment/Regulatory Impact Review (EA/RIR) addresses alternatives for changes to maximum retainable bycatch (MRB) percentages that are used to determine retainable bycatch amounts of shortraker/rougheye rockfish in the Aleutian Islands subarea (AI) when these species are closed to directed fishing.

1.1 Purpose of and Need for the Action

1.1.1 General

Description of maximum retainable bycatch (MRB) amounts. NMFS annually assesses each groundfish total allowable catch (TAC) amount to determine how much of a species' TAC is needed as bycatch in other groundfish fisheries. The remainder of the species TAC is made available as a directed fishing allowance. Directed fishing is defined in regulations as " any fishing activity that results in the retention of an amount of a species or species group on board a vessel that is greater then the MRB amount for that species or species group." The MRB amount of a bycatch species is calculated as a percentage of other species open for directed fishing that are retained on board a vessel. The MRB percentage of a bycatch species that may be retained is established in regulations governing the groundfish fisheries. Current regulations prohibit the retention of a species closed to directed fishing in amounts that exceed the MRB percentage and excess catch must be discarded.

The MRB percentages established in regulations serve as a management tool to slow down the rate of harvest of a species placed on bycatch status and to reduce the incentive to fishing vessels to target on the species. Nonetheless, vessels may "top off" their retained catch of species open to directed fishing with a species on bycatch status up to the MRB amount. Generally, a default of 20 percent is established to serve

as a general management tool to slow the harvest rate of a species, yet avoid significant discard amounts of these species to the extent they are taken as bycatch in other groundfish fisheries. However, for other species such as Greenland turbot, rockfish, sablefish, and flatfish, MRB percentages are set at levels that recognize increased or decreased bycatch of these species relative to certain other species.

During the course of a fishing year, NMFS routinely closes "directed fishing" for specified groundfish species. Directed fishing closures occur because a fishery has reached a halibut or crab bycatch allowance, the directed fishing allowance for a target groundfish species has been reached, or because of overfishing concerns for another groundfish species taken as bycatch. When directed fishing for a species is closed for any of these purposes, bycatch amounts of the species may still be retained on board a vessel up to the specified MRB percentage of other species open to directed fishing that are retained onboard the vessel. NMFS attempts to manage groundfish TACs so that directed fishing closures are implemented in a timely enough manner that leave sufficient portions of the TAC to provide for bycatch in other fisheries. If TAC is reached, however, the species becomes "prohibited" and all catch of the species must be discarded.

Derivation of existing MRB percentages.

Current MRB percentages for the BSAI groundfish fisheries are listed in Table 1. These percentages first were established in 1990 (55 FR 9887, March 16, 1990) and subsequently revised several times. The MRB percentages first established in 1990 attempted to reflect "intrinsic" incidental catch rates in gear-specific fisheries for certain high valued species of lower relative abundance, such as sablefish, Greenland turbot, and rockfish species. Other percentages were set at a general default value of 20 percent to dissuade target operations on species on bycatch status, yet avoid the discard of these species in the event their incidental catch comprised an unanticipated high proportion of the catch.

The species-gear-area approach to allowable bycatch amounts gave rise to unnecessary complexity and confusion. In 1995, changes to MRB percentages were implemented (60 FR 40304, August 8, 1995) that attempted to make these percentages less complex by establishing greater consistency between areas and eliminating gear distinctions. In 1997, the MRB percentages for Gulf of Alaska sablefish were reduced to respond to industry and management problems that resulted from "topping off" activity (62 FR 11109, March 11, 1997).

"Topping off" is a recognized and generally accepted activity associated with species on bycatch status. The incentive for fishermen to engage in this activity is directly related to the value of, and available market for, the bycatch species relative to the associated operation costs of fishing first for and retaining one species and subsequently topping off that retained catch with a bycatch species up to, and including, the allowable MRB percentage. From a management perspective, MRB percentages are a tool used to slow down the harvest rate of a species. These rates do not necessarily reflect an "intrinsic" incidental catch rate, but rather reflect a balance between the recognized need to slow harvest rates, minimize the potential for undesirable discard, and, in some cases, provide an increased opportunity to harvest available TAC through limited "topping off" activity.

1.1.2 Why changes to Aleutian Islands shortraker/rougheye MRBs have been proposed

Currently, MRBs are established for aggregate rockfish species that are closed to directed fishing. These species were aggregated for purposes of calculating MRB amounts because of concerns that separate MRBs for each rockfish TAC category would increase the overall amount of rockfish that could be retained

and increase harvest rates higher than necessary through "topping off" activity.

Pacific ocean perch (POP), and four other associated species of rockfish (northern rockfish, rougheye rockfish, shortraker rockfish, and sharpchin rockfish) were managed as a complex in the Aleutian Islands and Bering Sea subareas from 1979 to 1990. Known as the POP complex, these five species were managed as a single entity with a single TAC. In 1991, the groundfish specifications changed the species composition of the POP complex. For the Bering Sea, the POP complex was divided into two subgroups: (1) Pacific ocean perch, and (2) shortraker, rougheye, sharpchin, and northern rockfishes combined. For the Aleutian Islands subarea, the POP complex was divided into three subgroups: (1) Pacific ocean perch, (2) shortraker/rougheye rockfish, and (3) sharpchin/northern rockfish. These subgroups were established to protect Pacific ocean perch, shortraker rockfish, and rougheye rockfish, the three most valuable commercial species in the assemblage, from possible overfishing. Each subgroup is assigned an individual TAC.

Although shortraker/rougheye are highly valued species, amounts available to the commercial fisheries are limited by relatively small acceptable biological catch (ABC) and TAC amounts that are fully needed to provide bycatch amounts in other groundfish fisheries. As a result, the directed fishery for shortraker/rougheye typically is closed at the beginning of the fishing year.

	YEAR		
Shortraker/rougheye category	1995	1996	1997 (thru 9/6/97)
ABC (mt)	1,220	938	938
TAC (mt)	1,098	938	938
Harvest (mt)	559	959	1,045

As part of the aggregate rockfish MRB, the combined amounts of SR/RE and other rockfish species closed to directed fishing must not exceed the established MRB percentage of 15 percent relative to other rockfish species, sablefish, Greenland turbot, and flathead sole open to directed fishing and 5 percent relative to other species (Atka mackerel, pollock, yellowfin sole, rock sole, "other flatfish," squid, and "other species." As with all other species in the BSAI, the MRB percentage of aggregate rockfish relative to arrowtooth flounder is 0. Most of the harvest of SR/RE is taken as bycatch in the Pacific ocean perch fishery and to a lesser extent in the Atka mackerel fishery.

Amounts of AI shortraker/rougheye harvested and retained (mt), by fishery						
Fishery	year					
	1995		1996		1997(thru 9/6/97)	
	harv.	ret.	harv.	ret.	harv.	ret.
Trawl rockfish (mostly POP)	347	337	638	575	778	635
Trawl Atka mackerel	95	52	129	74	162	90
Trawl Other	17	8	4	0	5	0
H&L Sablefish	75	40	57	20	35	2
H&L Greenland turbot	6	5	12	11	0	0
H&L Other	18	12	120	71	66	2
TOTAL	558	454	960	751	1046	729

* source: NMFS best blend catch database

In 1997, inseason monitoring and management of AI fisheries were frustrated by unanticipated high harvest rates of shortraker/rougheye in the Pacific ocean perch and Atka mackerel trawl fisheries. These higher than anticipated catch rates resulted in the closure of several fisheries to prevent overfishing of shortraker and rougheye. Retention of Atka mackerel, Pacific cod, and rockfish by vessels using trawl gear and retention of Pacific cod by hook-and-line vessels in the Aleutian Islands were prohibited. The directed fishery for Greenland turbot by vessels using hook-and-line gear was closed. The AI fisheries for Atka mackerel, sharpchin/northern rockfish, Pacific cod and Greenland turbot were closed prior to the attainment of the individual TACs, disrupting fishing plans and creating a loss of economic opportunity for the fishing industry. A summary of these events is presented below:

1997 MANAGEMENT OF THE AI SHORTRAKER/ROUGHEYE HARVEST

Jan 1: TAC = ABC = 938 mt Overfishing level = 1,250 mt Accumulative '97 harvest = 0 mt
(1996 harvest was 959 mt)

Mar 1:	Total year to date Bycatch in other fisheries about 80 mt	80 mt
Mar 7:	1 week bycatch in other fisheries about 300 mt	380 mt
Mar 22	1 week bycatch in other fisheries about 200 mt	580 mt
Mar 29	1 week bycatch in other fisheries about 100 mt	680 mt
Apr 2	Retention prohibited in all fisheries and with the management expectation that topping off activity would end, resulting in minimal bycatch for the remainder of the year	
Apr 10	Total catch thru April 5 estimated at 800 mt	800 mt
Apr 15	POP fishery reopened in reporting area 542 for a 24 hr period	
Apr 18	Availability of bycatch data for the week ending 4/12/97 unexpectedly showed a continuation of high SR/RE bycatch rates (100 mt/wk)	1,000 +mt
Apr 21	Retention of trawl caught Atka mackerel and POP prohibited to prevent further bycatch of SR/RE; bycatch continuing in H&L P.cod fish at rate of about 5 mt/wk	
1,100 + mt		
May 10	Retention of H&L caught P. cod and Greenland turbot prohibited	
May 12	H&L Greenland turbot returned to bycatch status	
May 27	Retention of trawl caught P. cod prohibited	
Jun 17	NMFS issues cautionary News Release to IFQ sablefish fishermen	1,212 mt
Jul 4	Daily production reports required of processors that catch or retain SR/RE	
Sept 6	Current estimate of SR/RE harvest in all fisheries Downward adjustment due to the debriefed observer data and late/revised industry reports	1,045 mt

In response to the above series of events, the Council requested at its June 1997 meeting that options to reduce the MRB percentages for SR/RE be explored to minimize the potential for attainment of TAC and/or overfishing levels and the resulting closures of other fisheries. The Council also noted that other management measures may be considered in the future to address the competitive use of SR/RE bycatch in trawl and non trawl fisheries, including gear allocations or time/area closures.

1.2 Alternatives Considered

1.2.1 Alternative 1: Status Quo

Existing MRB percentages set out in Table 1 of this EA/RIR would remain unchanged. Fishery operation or management concerns described in Section 1.1 of this document would not be addressed.

1.2.2 Alternative 2 (Preferred)

Establish shortraker/rougheye MRB percentages separate from those established for other aggregate rockfish and reduce the MRBs for this species category from the current 15 percent. Options for a reduce MRB percentage relative to deepwater and shallowater species complexes are as follows .

	MRB percentage relative to the Deepwater complex (rockfish, Greenland turbot, sablefish, flathead sole)	MRB percentage relative to the Shallow water complex (pollock, P. cod, Atka mackerel, flatfish, other species, non groundfish)
Current MRB (Alternative 1)	15	5
Alternative 2 options	9	3
	7 (Preferred)	2 (Preferred)
	5	1
	3	

1.3 Background for Data Analysis of Shortraker/rougheye bycatch in the Aleutian Islands

Data and assumptions

Observer data collected from hauls made during 1995 and 1996 were analyzed to describe the bycatch of shortraker/rougheye in the Aleutian Islands. The observer data were provided by the National Marine Fisheries Service and included vessel, haul and catch information. In total, 4,066 hauls were observed in 1995 and 4,931 in 1996. All of the gear types (bottom trawl, pelagic trawl, pot and longline) were included in the analysis. Because the Maximum Retainable Bycatch (MRB) categories apply across all gear types, distinctions in gear were not included in this report.

Target assignments for individual hauls were based on dominant catch in the following manner. The combined catch from the target complexes (Atka Mackerel, sablefish, all rockfish, Pacific cod, pollock, yellowfin sole, flathead sole, rock sole, Greenland turbot, other flatfish and arrowtooth flounder) was subtracted from the total groundfish catch for a haul, and this remainder was classified as "other groundfish". This "other groundfish" amount was compared to the weight of each of the target complexes and the target complex with the dominant catch by weight was assigned as the target of the haul. Following assignment as a pollock target, pollock hauls were further classified as bottom trawl or pelagic trawl for pollock if the percentage of pollock in the haul was less than or greater than 95%, respectively. Arrowtooth flounder was not included as a possible target assignment, because of the minimal actual targeting of arrowtooth flounder, especially in the Aleutian Islands. All hauls classified as a rockfish target were further classified by dominant rockfish species into the following subtargets: pelagic rockfish; Pacific Ocean perch (POP); northern rockfish; shortraker/rougheye; shortspine thornyhead; other rockfish; or

demersal shelf rockfish.

Observed catch and bycatch

The dominant fisheries in the Aleutian Islands are the Atka Mackerel and pelagic pollock fisheries (Table 2). Atka Mackerel hauls comprised 45.5% of the observed groundfish catch in 1995 and 61.3% of the groundfish catch in 1996. Pollock hauls accounted for 38.3% and 17.3% of the total groundfish catch in 1995 and 1996, respectively. Hauls for POP and Pacific cod made up between 5% and 10% of the total groundfish catch in the two years as well.

As would be expected, most of the POP by weight (approximately 85%) was taken in both years by the POP target fishery, and approximately 10% was taken as bycatch in the Atka Mackerel fishery. Shortraker/rougheye was primarily taken in the POP fishery (39.1% of the catch in 1995 and 62.1% in 1996), and in the Atka Mackerel fishery (15.9% and 10.9% in 1995 and 1996, respectively). Shortraker/rougheye were also caught in hauls classified as shortraker/rougheye rockfish subtargets, and these hauls comprised 22.9% and 12.5% of the shortraker/rougheye taken in 1995 and 1996, respectively. *There is no directed fishery for shortraker/rougheye*, however, hauls assigned this target had shortraker/rougheye as the dominant rockfish catch. In total 16 hauls fell in this category in 1995 and 17 hauls in 1996, indicating that few hauls were specifically targeting shortraker/rougheye to the extent that it could be classified as a target. Shortraker/rougheye were also taken in the "other groundfish" category in 1995, which accounted for 12.2% of the shortraker/rougheye bycatch. A review of the hauls in this category indicated that most of the hauls were longline hauls, and that the "other groundfish" designation came from the dominance of non-target species such as grenadier in the catch.

Because of the dominance of shortraker/rougheye bycatch in the POP and Atka Mackerel fisheries, the analysis focused on these two targets. Currently the MRB allowances for a bycaught species are similar across the shallow-water fisheries and across the deep-water fisheries. The Atka Mackerel fishery is representative of the shallow-water fisheries, and similarly, the POP fishery is representative of the deep-water fisheries.

The Total Allowable Catch (TAC) of Atka Mackerel was apportioned between the Eastern (NMFS statistical area 541), Central (Area 542) and Western (Area 543) Aleutian Islands in both 1995 and 1996 (Figure 1). The POP TAC was apportioned into these regions for the first time in 1996. Shortraker/rougheye currently has an Aleutian Islands-wide TAC. The 1995 shortraker/rougheye TAC was 1,098 mt, and 559 mt were taken in groundfish fisheries, with observer reports accounting for 288 mt, or roughly 52% of this rockfish catch (Table 3). In 1996, the TAC for shortraker/rougheye was set at 938 mt with a catch was 959 mt of which approximately 62% or 592 mt was on observed hauls. Coincidental with the split of the POP TAC into three districts, the shortraker/rougheye TAC has been met or exceeded in the last two years (1996 and 1997), and the POP and Atka Mackerel fisheries have been at or near TAC for the past three years.

Observed bycatch rates

The overall bycatch rates of various rockfish species expressed as a ratio of the mean rockfish species catch to the mean directed species catch are provided in Table 4 for the Atka Mackerel fishery, and in Table 5 for the POP fishery. The rates and coefficients of variation (CV) were calculated as previously in

the examination of bycatch in rockfish fisheries in the Gulf of Alaska (Heifetz and Ackley 1997). The CV, the ratio of variance to the mean, allows a comparison of the amount of variability associated with different means.

The overall rate of shortraker/rougheye bycatch in the Atka Mackerel fishery was 0.09% in both 1995 and 1996 (Table 4). The overall rate of aggregated rockfish bycatch in this fishery was 4.4% and 5.4% in 1995 and 1996, respectively, or approximately at the established MRB rate of 5%. Among statistical areas, Area 541 had the lowest bycatch rates of shortraker/rougheye (0.06% in 1995 and 0.01% in 1996) and aggregated rockfish (3.6% in 1995 and 2.34% in 1996) in the Atka Mackerel fishery. The Area with the highest rates was 543 (0.12% and 0.10% for shortraker/rougheye, and 6.67% and 6.6% for aggregated rockfish in 1995 and 1996, respectively), with relatively high rates also occurring in Area 542 in 1996. The primary rockfish bycatch species in the Atka Mackerel fishery is northern rockfish.

The bycatch rate of shortraker/rougheye in the POP fishery more than doubled between 1995 and 1996 (Table 5). The 1995 bycatch rate was 2.11%, and the 1996 bycatch rate was 5.08%. Although similar to the bycatch rate for northern rockfish in 1995 (2.75%), shortraker/rougheye was the rockfish complex caught at the highest rate in 1996. The overall bycatch rate for non-POP aggregated rockfish in the POP fishery was 5.09% in 1995 and 7.89% in 1996. Area 541 was the area with the highest bycatch rates for shortraker/rougheye (2.3%) and aggregated non-target rockfish (5.19%) in 1995. The TAC for POP in the Aleutian Islands in 1995 was area wide, but catch was concentrated in Area 541, with very little effort (9 observed hauls) in Area 543. In 1996 the TAC was divided by areas, with 50% of the TAC designated for Area 543, and 25% of the TAC each for Areas 542 and 541. The bycatch rate for shortraker/rougheye in 1996 increased the more westerly the Area, and was 3.71% in 541, 4.78% in 542, and 5.85% in 543. In contrast the bycatch rate for non-target aggregated rockfish was highest in Area 542 (8.94%).

Comparisons of historical data with proposed MRB rates

Historical data are useful in describing bycatch rates, and patterns in bycatch in the Aleutian Islands fisheries. However, there are several limitations in using historical observer data to predict or describe the effects of changes in MRB levels. The first caveat in using historical data is that the data are collected on a haul-by-haul basis, and it is difficult to use the data to describe or characterize an entire trip or fishing week. MRBs are used to cap the retainable bycatch in a fishing week, so an examination of individual hauls has limited utility. Second, the observer database can only quantify observed hauls and there is no information available for unobserved hauls, further confounding the utility of observer data in describing a full fishing week. A third limitation to the observer data is that the total catch for each haul is recorded but the amount retained from the haul is not currently provided, whereas MRBs apply to retained catch only. The fourth major caveat in using historical data is that the fisheries were prosecuted under an existing MRB level. Given that it is not possible to know if a haul was made in an effort to constrain bycatch or at the opposite extreme to "top off" up to the allowable MRB level, the data have limitations in describing either avoidance or "topping off" behavior. The POP fishery, for instance, operated under an MRB of 15% in 1995 and 1996. This may have provided an incentive to "top off" on other more valuable rockfish species, such as shortraker/rougheye, however it is very difficult do distinguish the "top off" hauls from hauls which would normally encounter shortraker/rougheye. It is impossible to know whether the few hauls which fell into the shortraker/rougheye target (for which there is no directed fishery) were the result of intentional catch for "topping off" purposes, or whether the shortraker/rougheye were encountered as unexpected, or non-intentional catch.

Aggregated Rockfish

Given a potential reduction in MRB rates in the Aleutian Islands Atka Mackerel fishery, a range of rates from the observer data were examined. The current MRB for aggregated rockfish in the Bering Sea/Aleutian Islands is 5% for Atka Mackerel and all shallow-water fisheries. Shortraker/rougheye is currently included in the aggregated rockfish category. As discussed above, northern rockfish are the principal rockfish species taken in the Atka Mackerel fishery, however, this fishery is one of the two main sources of shortraker/rougheye bycatch.

In the 1995 Aleutian Islands Atka Mackerel fishery, 1,211 observed hauls took 57,178 mt of groundfish, 51,556 mt of Atka Mackerel, and 2,280 mt of aggregated rockfish (Table 6). As discussed above, the average bycatch rate of aggregated rockfish for this fishery was 4.42% of the total Atka Mackerel catch. Approximately one-third, or 30.5% of the observed hauls caught rockfish at a rate greater than 5%, and these hauls represented approximately one-quarter of the directed catch of Atka Mackerel (23.4%) and approximately three-quarters of the rockfish bycatch (73.9%). Similarly, 43.2% of the hauls experienced an aggregated rockfish bycatch rate above 3% and 84.4% of the rockfish were taken in these hauls. Approximately one-half of the hauls had bycatch rates above 2%, and these hauls accounted for roughly one-half of the directed catch (46.8%) and 90.7% of the rockfish bycatch.

A similar pattern was seen in the 1996 Atka Mackerel fishery in which 35.8% of the 1,653 observed hauls had rockfish bycatch rates above 5%. The overall average bycatch rate of rockfish in this year was 5.4%. Over one-quarter (28.5%) of the 68,852 mt of Atka Mackerel were in the hauls with rates greater than 5%, and those hauls represented 78.7% of the 3,715 mt of bycaught rockfish. Nearly one-half (48%) of the hauls experienced bycatch rates above 3%, and these hauls accounted for 87.7% of the rockfish bycatch.

The MRB for aggregated rockfish in the POP fishery, a member of the deep-water fisheries group, was 15% in both 1995 and 1996. The overall average bycatch rate of non-POP rockfish in the POP fishery was 5.09% in 1995 and 7.89% in 1996. In total, 210 hauls were observed in the 1995 POP fishery and 248 in the 1996 fishery (Table 6). The total observed groundfish catch in 1995 was 6,410 mt and the total in 1996 was 8,633 mt. Of the total catch, 5,351 mt was POP in 1995 and 7,226 mt was POP in 1996. The total non-POP aggregated rockfish bycatch in the POP fishery was 272 mt in 1995 and 570 mt in 1996.

The 1995 POP hauls for which the bycatch rate of non-target rockfish exceeded 15% (32 hauls) represented 15.2% of the total hauls, and these hauls accounted for 7.9% of the directed catch and 55.9% of the total non-POP rockfish bycatch. The hauls with rockfish bycatch rates above 9% included 21.9% of the observed hauls and accounted for 12.8% of the POP catch and for over two-thirds or 67.4% of the total rockfish bycatch. Hauls with rates exceeding 7% made up approximately one-quarter (24.8%) of the hauls and caught nearly three-quarters of the rockfish bycatch (72.1%). Hauls with rates above 5% made up 32.9% of the hauls and represented 22.9% of the POP catch and 80.0% of the aggregated non-POP bycatch.

Non-POP rockfish bycatch rates in the POP fishery were higher in 1996 than in 1995. Over one-quarter (25.8%) of the total POP hauls had aggregated rockfish bycatch rates above 15%, with 10% of the POP catch and 51.8% of the non-POP bycatch being taken in those tows. The bycatch rates exceeded 9% in 41.1% of the hauls and these hauls caught 27.5% of the POP and 76.9% of the non-POP rockfish. In hauls with a bycatch rate above 7%, 33.1% of the POP catch was taken and 82.4% of the non-POP rockfish were caught. Over one-half (52.4%) of the POP hauls had rockfish bycatch rates above 5%, and

these hauls also caught 89% of the non-POP rockfish bycatch.

Shortraker/rougheye

Under the assumption that an MRB might be implemented separately for shortraker/rougheye rockfish the bycatch rates for shortraker/rougheye rockfish were examined in a manner similar to that for aggregated rockfish presented above. The caveats discussed above apply, and it should be kept in mind that the data were collected from fisheries with no specific rockfish restrictions except for the aggregated rockfish MRB and a TAC for shortraker/rougheye.

The overall bycatch rates of shortraker/rougheye in the Aleutian Islands Atka Mackerel fishery were 0.09% in both 1995 and 1996, however overall observed catch and bycatch rates increased from 1995 to 1996. In total, 46 mt of shortraker/rougheye were observed in 1995 and 65 mt were observed in 1996.

Only 8 (or 0.7%) of the 1,211 observed Atka Mackerel hauls in 1995 exceeded a bycatch rate of 5% for shortraker/rougheye (Table 7). These hauls took only 0.3% of the total directed catch of Atka Mackerel, but one-quarter (25.3%) of the observed bycatch of shortraker/rougheye. An additional four hauls took shortraker/rougheye at a rate exceeding 3%, and these 12 hauls represented 0.7% of the Atka Mackerel catch and 39.7% of the shortraker/rougheye bycatch. One-half of the shortraker/rougheye (52.7%) were bycaught in Atka Mackerel hauls exceeding a bycatch rate of 2% in the haul, and nearly three-quarters (74%) were taken in hauls exceeding a bycatch rate of 1% in the haul. The hauls in which the bycatch rate exceeded 1% accounted for 3.6% of the hauls and 2.5% of the directed Atka Mackerel catch. The distribution of shortraker/rougheye bycatch in Atka Mackerel hauls by date in 1995 are provided in Figure 2. The majority of the hauls had no shortraker/rougheye bycatch and hauls with bycatch were primarily between mid-March and mid-May.

In 1996, only 6 observed Aleutian Islands Atka Mackerel hauls (0.4%) had a bycatch rate of shortraker/rougheye above 5%. These hauls represented 0.2% of the directed Atka Mackerel catch, and 24.5% of the total shortraker/rougheye bycatch. An additional five hauls had shortraker/rougheye bycatch rates exceeding 3%, and these 11 hauls represented 0.4% of the directed Atka Mackerel catch and 32.5% of the total shortraker/rougheye bycatch. In total, 1.5% of the hauls exceeded a shortraker/rougheye bycatch rate of 2% and 3.1% exceeded a rate of 1%. Those exceeding a 2% bycatch rate took 1.1% of the directed catch and 49.4% of the shortraker/rougheye bycatch. The hauls exceeding a 1% bycatch rate took 2.5% of the directed Atka Mackerel catch, and 70.2% of the shortraker/rougheye bycatch. Figure 3 shows the 1996 distribution of Atka Mackerel hauls by date with shortraker/rougheye bycatch rates. Fishing and bycatch both extended over a longer period than in 1995, but the majority of hauls with shortraker/rougheye bycatch occurred in March and April. As in 1995, most of the hauls had no shortraker/rougheye bycatch.

The POP fishery had average shortraker rougheye bycatch rates of 2.11% and 5.08% in 1995 and 1996, respectively. The observed bycatch of shortraker/rougheye in the Aleutian Islands POP fishery more than tripled from 113 mt in 1995 to 367 mt in 1996.

In 1995, 4.8% of the POP hauls were above a shortraker/rougheye bycatch rate of 15% (Table 7). These 10 hauls caught 2.6% of the observed POP catch and 32.6% of the observed shortraker/rougheye bycatch. A bycatch rate of 9% was exceeded by 7.1% of the hauls which took 4.0% of the directed POP catch and 39.8% of the shortraker/rougheye bycatch. Ten percent of the hauls had a bycatch rate which was above

7%, and one-half of the shortraker/rougheye bycatch (50.2%) and 6.9% of the directed catch was taken in these hauls. Hauls with a rate exceeding a bycatch rate of 5% made up 14.8% of the total hauls, caught 10.1% of the POP, and bycaught 59% of the shortraker/rougheye. As described above and in Table 7, approximately 85% of the hauls had bycatch rates below 5% for shortraker/rougheye, and this is indicated in Figure 4 which provides the distribution of the POP hauls in 1995 over time. Nearly one-third of the shortraker/rougheye bycatch was taken in the few hauls with very high bycatch rates. The POP fishery in 1995 generally occurred during the last week of February and the first two weeks of March, and again during the first two weeks of April. Shortraker/rougheye bycatch appeared to be higher during the first of these two POP fisheries.

The percentage of hauls with a bycatch rate greater than 15% doubled from 1995 to 1996, and 10.9% of the hauls fell in this category in 1996. The target catch in these hauls represented 6.1% of the total POP catch, and the shortraker/rougheye bycatch was 36.8% of the total bycatch. A bycatch rate of 9% was exceeded by 22.2% of the POP hauls, and these hauls caught 19.8% of the POP catch and 67.3% of the shortraker/rougheye bycatch. The 71 hauls which had bycatch rates above 7% represented 28.6% of the total hauls, 26.4% of the POP catch, and 77.6% of the shortraker/rougheye bycatch. Nearly one-third (32.7%) of the hauls exceeded a shortraker/rougheye bycatch rate of 5%. These hauls caught 31% of the POP and 83% of the shortraker/rougheye bycatch. As indicated in Table 7 and in Figure 5, there were many more hauls in 1996 catching shortraker/rougheye at high rate than was the case in 1995. The 32.7% of hauls which had rates exceeding 5% in 1996 were more than double the percentage (14.8%) seen in 1995.

Table 7a presents observer data on the bycatch of shortraker/rougheye in the aggregate rockfish fishery; of which POP, sharpchin, and northern rockfish are the major species components. In comparison with Table 7, these data are consistent in showing that most of the SR/RE bycatch is taken in the POP fishery. Of more interest is a comparison of Tables 7 and 7a with Table 8, which shows the composition of retained catch in the rockfish and Atka mackerel fisheries. Table 8 indicates that the overall retention of SR/RE relative to other retained rockfish and Atka mackerel is only about 5 percent and 0.1 percent, respectively. These rates are significantly lower than the allowable MRB percentages of 15 and 5 percent, respectively. In fact, during the past three years, only 2 weekly reports indicate a retention of SR/RE that might be in violation of MRB restrictions. Although the retained percentages of SR/RE relative to other species is low, these percentages have increased since 1995 by 25 percent in the rockfish fisheries and 128 percent in the Atka mackerel fishery. Reasons for these increases likely relate to favorable market conditions for SR/RE and the apparent increase in overall bycatch rates.

In summary, whereas aggregated rockfish are commonly encountered in the Atka Mackerel fishery, and the overall observed bycatch rates are near the MRB levels, the majority of bycaught shortraker/rougheye are caught in only a few hauls. In 1995, 74% of the bycaught shortraker/rougheye were taken in 3.6% of the Atka Mackerel hauls, and in 1996, 70.2% of the shortraker/rougheye were taken in 3.1% of the hauls. The POP fishery, on the other hand, has an overall bycatch rate of non-POP rockfish well below the established MRB of 15%, however, non-target rockfish are more commonly encountered in individual tows. There is also considerable variability between years in the POP fishery. Roughly 25% of the hauls caught rockfish at a rate greater than 7% in 1995, and these hauls accounted for 72% of the bycaught rockfish. In 1996, 46.4% of the hauls caught rockfish at a rate greater than 7%, and these hauls accounted for 82% of the rockfish bycatch. Similarly the hauls with shortraker/rougheye bycatch rates above 7% in 1995 accounted for 10% of the hauls and represented 50% of the shortraker/rougheye bycatch, but in 1996, 28.6% of the hauls exceeded 7% and these hauls accounted for 78% of the shortraker/rougheye bycatch.

Industry reported data on retained catch composition do not indicate that MRB percentages are being violated. Instead, these data indicate that the current MRB percentages are fairly generous relative to the amounts of SR/RE that actually is retained relative to other retained catch. Since 1995, the ratio of retained amounts of SR/RE in the rockfish fisheries relative to other retained catch has ranged from 4.5 to 5.7 percent. The MRB percentage for SR/RE in this fishery is 15 percent. During the same time period, the retained amount of SR/RE in the Atka mackerel fishery relative to other retained catch has ranged from 0.08 to 0.2 percent. The MRB percentage for SR/RE in this fishery is 5 percent.

At its September 1997 meeting, the Council recommended that MRB percentages for SR/RE in the AI be reduced to 7 percent relative to other rockfish species, Greenland turbot, sablefish and flathead sole and to 2 percent relative to other groundfish and non groundfish species. The MRB percentage relative to arrowtooth flounder would remain at 0 percent. These percentages are intended to reduce the incentive to top off target catch with SR/RE while minimizing the potential for regulatory discards of SR/RE during a fishing trip. The catch rates of SR/RE should decrease accordingly. Nonetheless, overall bycatch amounts still could pose concern given the small TAC amounts annually specified for SR/RE and the high volume POP and Atka mackerel trawl fisheries in the AI. As a result, the Council intends to consider in the future management measures that would authorize a gear allocation of SR/RE so that inseason management actions can be taken to control trawl bycatch more effectively without threatening the closure of the fixed gear fisheries.

2.0 NEPA REQUIREMENTS: ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

An environmental assessment (EA) is required by the National Environmental Policy Act of 1969 (NEPA) to determine whether the action considered will result in significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.1 and 1.2, and the list of preparers is in Section 7. This section contains the discussion of the environmental impacts of the alternatives including impacts on threatened and endangered species, critical habitat, and marine mammals.

2.1 Environmental Impacts of the Alternatives

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish stocks which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure; (2) changes in the physical and biological structure of the marine environment as a result of fishing practices, e.g., effects of gear use and fish processing discards; and (3) entanglement/entrapment of non-target organisms in active or inactive fishing gear.

The environmental impacts of the groundfish specifications (TACs) are assessed annually in the

environmental assessment prepared for these specifications. MRB percentages provide a management tool to facilitate the monitoring and management of species' harvest amounts within specified TACs. If MRBs provide an opportunity for increased harvest rates of a bycatch species or a basis species through "topping off" activity in a manner that results in TACs being reached before the end of the fishing year, then NMFS is required to put the affected species on prohibited species status. If overfishing is not of concern, the species will continue to be taken incidental to other fishing operations, but must be discarded. While regulatory discards are a source of public concern, they do not necessarily create conservation problems. If attainment of a TAC and subsequent bycatch amounts present a potential overfishing concern, NMFS is required to take action to prohibit all fishing activities that take the affected species incidentally.

Sometimes, unanticipated changes in fishing patterns together with the fast-paced, competitive nature of the groundfish fisheries creates a situation where harvest amounts reach the overfishing level before NMFS can take preventative action. To the extent that Alternative 2 would implement reductions to specified MRBs, slower harvest rates would result, management ability would be enhanced to maintain harvest amounts within specified TACs, and the potential of reaching overfishing levels would be lessened. This alternative, therefore, would facilitate NMFS's ability to manage fisheries within the TAC levels assessed by the annual EA prepared for the groundfish specifications and within the scope of effects the annual EA determines these harvest levels may have on the biological environment as well as associated impacts on marine mammals, seabirds, and other endangered or threatened species and critical habitat.

A description of the effects of the 1997 TACs on the biological environment and associated impacts on marine mammals, seabirds, and other endangered or threatened species and critical habitat is set out in the final EA prepared for the 1997 specifications (NMFS 1997).

2.2 Coastal Zone Management Act

Implementation of the preferred alternative would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

2.3 Conclusions or Finding of No Significant Impact

None of the alternatives are likely to significantly affect the quality of the human environment, and the preparation of an environmental impact statement for the proposed action is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

David R. Evans

Assistant Administrator for Fisheries, NOAA

3/18/98

Date

3.0 REGULATORY IMPACT REVIEW: ECONOMIC AND SOCIOECONOMIC IMPACTS OF THE ALTERNATIVES

This section provides information about the economic and socioeconomic impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of these impacts, quantification of the economic impacts if possible, and discussion of the trade offs between qualitative and quantitative benefits and costs.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

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

This section also addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act (RFA) to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" impacts on small entities under the RFA.

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:

> (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

A regulatory program is "economically significant" if it is likely to result in the effects described above. The RIR is designed to provide information to determine whether the proposed regulation is likely to be "economically significant."

3.1 Economic Impact on Small Entities

The objective of the RFA is to require consideration of the capacity of those affected by regulations to bear

the direct and indirect costs of regulation. If an action will have a significant impact on a substantial number of small entities an Initial Regulatory Flexibility Analysis (IRFA) must be prepared to identify the need for the action, alternatives, potential costs and benefits of the action, the distribution of these impacts, and a determination of net benefits.

The small Business Administration has defined all fish-harvesting or hatchery businesses that are independently owned and operated, not dominant in their field of operation, with annual receipts not in excess of $3,000,000 as small businesses. In additional, seafood processors with 500 employees to fewer, wholesale industry members with 100 employees or fewer, not-for-profit enterprises, and government jurisdictions with a populations of 50,000 or less are considered small entities. NMFS has determined that a "substantial number" of small entities would generally be 20% of the total universe of small entities affected by the regulation. A regulation would have a negative "significant impact" on these small entities if it reduced annual gross revenues by more than 5 percent, increased total costs of production by more than 5 percent, or resulted in compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities.

A substantial number of fishing vessels could be affected by the proposed change in MRB percentages. The table below presents data summarizing the number of vessels by gear and area that harvested Alaska groundfish in 1995. These data include some vessels that would not be considered "small entities" for purposes of the RFA because their gross annual revenues exceed $ 3 million, although the preponderance of vessels experience annual revenues less than this amount.

Statistics on number of vessels (catcher vessels and catcher/processor vessels) that caught groundfish by area, gear and target fishery in 1995. Data is excerpted from the "Economic Status of the Groundfish Fisheries off Alaska, 1995" chapter of the draft 1997 SAFE report (NPFMC 1996).

	GOA	BSAI	All Alaska
Trawl			
All groundfish	220	184	268
pollock	138	156	199
Sablefish	4	6	10
Pacific cod	154	123	225
Flatfish	65	88	128
Rockfish	27	14	28
Atka Mackerel	2	17	18
Hook and Line			
All groundfish	1,351	175	1,403
sablefish	684	90	690
Pacific cod	525	100	594
Flatfish	3	44	45
Rockfish	582	21	598
Pot			
All groundfish	191	126	266
Pacific cod	190	124	265

The proposed action under Alternative 2 would impact primarily trawl catcher/processor vessels in the Aleutian Island subarea that are used to fish for either Pacific ocean perch or Atka mackerel. In 1996, 15 trawl catcher/processor vessels retained SR/RE, most of them while participating in these two fisheries. Also in 1996, 16 freezer longline vessels also retained SR/RE while participating in either the Pacific cod, sablefish, or Greenland turbot fishery. Based on 1996 ADF&G fish ticket data, 48 catcher vessels delivered SR/RE to shoreside processors, although landed amounts were small (3,000 lbs) relative to the 1996 C/P retained catch (about 750 mt). Using an assumed exvessel price of $1.10 per pound [1] the total value of the 1996 shortraker/rougheye retained catch is estimated at $ 1.8 million. The potential cost in terms of foregone harvest opportunity to trawl and fixed gear vessels that are prevented from fishing for other species to prevent overfishing of SR/RE would vary depending on the fishery and foregone harvest amount.

A significant negative economic impact on the catcher vessels that retain SR/RE is not likely as a result of the proposed action given the small amounts of these rockfish species that have been retained by catcher vessels fishing in the AI subarea in past years. Conversely, the proposed action is expected to have a positive impact to the extent that the reduced MRBs percentages for SR/RE would reduce the potential for reaching the specified overfishing level and limit the number of required fishery closures necessary to keep bycatch amounts rates of SR/RE at a minimum. Given the above assessment, NMFS has determined that the proposed action would not result in a significant economic impact on a substantial number of small entities. As a result, a regulatory flexibility analysis was not prepared.

If the chosen alternative for reduced MRB percentages do not sufficiently reduce bycatch rates to avoid reaching SR/RE TAC early in the fishing year or the SR\RE overfishing level, the Council likely will need to consider additional management measures to constrain the impact of SR\RE bycatch in one fishery on other subsequent fisheries that also may take bycatch amounts of SR/RE during harvest operations for targeted species.

None of the alternatives is expected to result in a "significant regulatory action" as defined in E.O. 12866.

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[1] Based on industry reported 1996 exvessel price for fixed gear landings of shortraker/rougheye rockfish.

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List of Tables

List of Figures

Figure 4. Observed SR/RE bycatch in the AI Atka mackerel fishery, 1996.
Figure 5. Observed SR/RE bycatch in the AI Pacific ocean perch fishery, 1996.

Table 1 --Bering Sea and Aleutian Islands Management Area Retainable Percentages

	BYCATCH SPECIES[1]												
	Pollock	Pacific cod	Atka mackerel	Arrowtooth	Yellowfin sole	Other flatfish	Rocksole	Flathead sole	Greenland turbot	Sablefish	Aggregated rockfish[2]	Squid	Other species
BASIS SPECIES													
Pollock	na[3]	20	20	35	20	20	20	20	1	1	5	20	20
Pacific cod	20	na[3]	20	35	20	20	20	20	1	1	5	20	20
Atka mackerel	20	20	na[3]	35	20	20	20	20	1	1	5	20	20
Arrowtooth	0	0	0	na[3]	0	0	0	0	0	0	0	0	0
Yellowfin sole	20	20	20	35	na[3]	35	35	35	1	1	5	20	20
Other flatfish	20	20	20	35	35	na[3]	35	35	1	1	5	20	20
Rocksole	20	20	20	35	35	35	na[3]	35	1	1	5	20	20
Flathead sole	20	20	20	35	35	35	35	na[3]	35	15	15	20	20
Greenland turbot	20	20	20	35	20	20	20	20	na[3]	15	15	20	20
Sablefish	20	20	20	35	20	20	20	20	35	na[3]	15	20	20
Other rockfish	20	20	20	35	20	20	20	20	35	15	15	20	20
Other red rockfish-BS	20	20	20	35	20	20	20	20	35	15	15	20	20
Pacific Ocean perch	20	20	20	35	20	20	20	20	35	15	15	20	20
Sharpchin/Northern-AI	20	20	20	35	20	20	20	20	35	15	15	20	20
Shortraker/Rougheye-AI	20	20	20	35	20	20	20	20	35	15	15	20	20
Squid	20	20	20	35	20	20	20	20	1	1	5	na[3]	20
Other species	20	20	20	35	20	20	20	20	1	1	5	20	na[3]
Aggregated amount non-groundfish species	20	20	20	35	20	20	20	20	1	1	5	20	20

[1]For definition of species, see Table 1 of the Bering Sea and Aleutian Islands groundfish specifications.
[2]Aggregated rockfish of the genera Sebastes and Sebastolobus.
[3]na = not applicable