



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

JUL -2 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 Amendment 53 to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area: allocate shortraker/rougheye rockfish in the Aleutian Islands subarea between vessels using trawl and non-trawl gear.

LOCATION: Federal Waters off Alaska

SUMMARY: This action allocates 70 percent of the total allowable catch of shortraker rockfish and rougheye rockfish in the Aleutian Islands subarea to trawl vessels and 30 percent to non-trawl vessels.

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 Fruehler

Acting NEPA Coordinator,

Enclosure



FINAL

ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW

**FOR AMENDMENT 53 TO THE
FISHERY MANAGEMENT PLAN
FOR THE
GROUNDFISH FISHERY OF THE BERING SEA AND ALEUTIAN ISLANDS AREA**

TO

**ALLOCATE SHORTRAKER/ROUGHEYE ROCKFISH
IN THE ALEUTIAN ISLANDS SUBAREA
BETWEEN VESSELS USING TRAWL AND NON-TRAWL GEAR**

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

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Executive Summary

This Environmental Assessment/Regulatory Impact Review (EA/RIR) addresses alternatives for allocating shortraker/rougheye rockfish (SR/RE) between vessels using trawl and non-trawl gear in the Aleutian Islands (AI) subarea. This action, if adopted by the Council, would be implemented under Amendment 53 to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (FMP). A draft EA/RIR prepared for the adjustment of the maximum retainable bycatch (MRB) percentage of SR/RE (Ackley et al, 1997) is incorporated into this document by reference.

In 1997, inseason monitoring and management of AI fisheries were frustrated by unanticipated high harvest rates of SR/RE in the Pacific ocean perch (POP) and Atka mackerel trawl fisheries. These higher than anticipated catch rates resulted in harvest amounts that exceeded the acceptable biological catch (ABC) and total allowable catch (TAC). Estimates of SR/RE bycatch through mid 1997 indicated that the overfishing level would be reached if fisheries that took these species were not closed. As a result, NMFS prohibited the 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 subarea. The directed fishery for Greenland turbot by vessels using hook-and-line gear also was closed. If necessary, NMFS was prepared to close the Individual Fishing Quota fishery for sablefish to prevent overfishing of SR/RE. Thus, although overfishing concerns stemmed primarily from the bycatch of SR/RE in the POP and Atka mackerel trawl fisheries, lucrative non-trawl fisheries that also take incidental amounts of these rockfish also were closed, or threatened with closure, to prevent reaching the overfishing level. These overfishing closures disrupted fishing plans and created a loss of economic opportunity for both the trawl and non-trawl fishing industries.

Concerns about the overall management of the SR/RE TAC, as well as industry frustration about actual or potential fishery closures resulting from overfishing concerns, prompted the Council to take several actions at its June and September 1997 meetings. First, the Council requested that options to reduce the maximum retainable bycatch (MRB) percentages for SR/RE be explored, to minimize the impact that "topping off" behavior may have on the rate at which SR/RE TAC is reached. "Topping off" occurs when vessel operators alter fishing operations to catch more SR/RE than they otherwise would so that their retained catch of these species may be maximized under MRB constraints. An analysis was prepared on alternative reductions of the MRB percentage (Ackley et al., 1997) and presented to the Council at its September 1997 meeting. Based on the analysis, the Council recommended that separate MRB percentages for SR/RE of 7 percent relative to deepwater species (rockfish species, sablefish, Greenland turbot, and flathead sole) and 2 percent relative to all other species except arrowtooth flounder, which cannot be used as a species against which SR/RE may be retained.

A final rule implementing these revised MRB percentages was published in the Federal Register on March 31, 1998 (63 FR 15334). It is 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 and should result in lower catch rates for SR/RE. Nonetheless, overall bycatch amounts still could pose concern because the TAC amounts annually specified for SR/RE are small in comparison to the high volume POP and Atka mackerel trawl fisheries.

At its June 1997 meeting the Council also noted that other management measures, including gear

allocations, may be considered in the future to address the competitive use of SR/RE bycatch in trawl and non-trawl fisheries.

At its September 1997 meeting, the Council reiterated its request to staff to develop an analysis for an allocation of SR/RE between vessels using trawl and non-trawl gear to more directly respond to concerns by non-trawl groups that trawl bycatch of SR/RE could continue to result in closures of non-trawl fisheries. The revised MRB percentages for SR/RE should reduce trawl bycatch rates to the extent that incentives are reduced to trawl vessel operators to top off their catch of POP or Atka mackerel with SR/RE. However, overall bycatch amounts may still exceed TAC and force closures of non-trawl fisheries. In general, representatives of the trawl and non-trawl industries supported an allocation of SR/RE between gear groups and recommended to the Council that 70 percent of the TAC be allocated to vessels using trawl gear and 30 percent of the TAC be allocated to vessels using non-trawl gear.

Two separate management alternatives are considered:

Alternative 1: Status Quo

The SR/RE TAC would not be allocated between gear groups. MRB constraints would be the only management tool in place to reduce bycatch rates and bycatch amounts in the trawl fisheries would continue to threaten non-trawl fisheries with closures if overall bycatch amounts exceed TAC and result in overfishing concerns.

Alternative 2: The SR/RE TAC would be allocated between vessels using trawl and non-trawl gear. Options for gear allocations as follows:

Option 1 (preferred). 30 percent to non-trawl gear/70 percent to trawl gear - Industry recommendation

Option 2. 20 percent to non-trawl gear/80 percent to trawl gear - Historical catch distribution

An analysis of observer data indicated that bycatch of SR/RE is highest in the POP fishery and Atka mackerel trawl fisheries. Of the total observed SR/RE bycatch from 1995 and 1996, 20.5 percent and 10.1 percent were taken in non-trawl fisheries in each year, respectively. NMFS's best blend estimate of SR/RE catch shows a distribution between trawl and non-trawl fisheries that is similar to that indicated by observer data. In 1995 and 1996, trawl gear fisheries accounted for 82 percent and 80 percent of the SR/RE catch, respectively. Conversely, non-trawl fisheries accounted for 18 percent and 20 percent of the catch in each respective year. In 1997, however, the trawl fisheries accounted for 91 percent of the SR/RE catch and the non-trawl fisheries accounted for only 9 percent.

The industry recommended allocation of SR/RE TAC between trawl and non-trawl vessels (70/30 percent split) under Alternative 2 is intended to provide an allocation to the non-trawl fleet in excess of actual relative catch in recent years. This would provide non-trawl operations adequate opportunity to fully harvest non-trawl allocations of Pacific cod and sablefish. Trawl industry representatives endorsed this split in recognition that trawl bycatch rates likely will decrease as a result of a proposed reduction in the SR/RE MRB percentage and the fact that a gear-specific allocation of SR/RE will allow more effective management of SR/RE bycatch in the trawl fisheries. A gear allocation based solely on historical catch between gear groups (80/20 percent split between trawl and non-trawl, respectively) would not adequately account for the fact that non-trawl fisheries have been preempted in the past by trawl bycatch of SR/RE nor would it conform with an industry negotiated settlement on what an

"equitable" allocation should be.

Only vessels that fish for groundfish in the AI subarea of the BSAI would be affected by the proposed allocation of SR/RE between vessels using trawl and non-trawl gear. In 1996, 90 trawl vessels and 123 non-trawl vessels fished for groundfish in the AI subarea. Of these, 15 trawl catcher/processor vessels retained SR/RE, most of them while participating in either the POP or Atka mackerel fishery. Also in 1996, 16 freezer longline vessels retained SR/RE while participating in either the Pacific cod, sablefish, or Greenland turbot fishery. Based on 1996 ADF&G fish ticket data, 48 non-trawl catcher vessels delivered SR/RE to shoreside processors, although landed amounts were small (5.1 mt) relative to the 1996 catcher/processor retained catch (about 750 mt).

The reported first wholesale price of SR/RE ranges from \$1.10 per pound for non-trawl operations to \$1.80 per pound for at-sea trawl processing operations (F.O.B. Dutch Harbor). Using these prices, the total value of the 1996 SR/RE retained by non-trawl fisheries is estimated at \$247,356, of which \$12,440 is attributed to catcher vessels landing shoreside. The value of the SR/RE retained by trawl catcher/processor vessels is estimated at \$2.6 million.

Under either Alternatives 1 or 2, the potential foregone harvest opportunity to trawl and non-trawl 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. The 1996 total estimated exvessel value of AI subarea groundfish retained by trawl vessels was \$43.8 million. The value of AI groundfish retained by non-trawl vessels during 1996 was about \$9.2 million (Table 8). Under alternative 2, the potential for SR/RE bycatch in the trawl fisheries resulting in closure or preemption of non-trawl fisheries is eliminated.

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 (5.1 mt in 1996 worth an estimated \$12,440). Conversely, the proposed action is expected to have a positive impact to the extent that bycatch in the trawl fisheries may be managed more effectively without impacting other gear groups. Given the above assessment, NMFS has determined that the proposed action would not result in a negative "significant impact" on small entities because it would not reduce annual gross revenues by more than 5 percent, increase total costs of production by more than 5 percent, or result in compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities, cause more than 2 percent of small entities to go out of business. As a result, a regulatory flexibility analysis was not prepared.

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

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.

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 Fishery of the Bering Sea and Aleutian Islands Area. Both fishery management plans (FMPs) were prepared 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 became effective in 1978 and the Bering Sea and Aleutian Islands Area (BSAI) FMP became 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, these include 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 allocating shortraker rockfish and roughey rockfish (SR/RE) between vessels using trawl and non-trawl gear in the AI subarea. This action would be implemented under Amendment 53 to the FMP for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area. A draft EA/RIR prepared for the adjustment of the maximum retainable bycatch (MRB) percentage of SR/RE (Ackley et al, 1997) is incorporated into this document by reference.

1.1 Purpose of and Need for the Action

1.1.1 General Management History of SR/RE

Pacific ocean perch (POP), and four other associated species of rockfish (northern rockfish, roughey 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, roughey, sharpchin, and northern rockfishes combined. For the AI subarea, the POP complex was divided into three subgroups: (1) Pacific ocean perch, (2) SR/RE rockfish, and (3) sharpchin/northern rockfish. These subgroups were established to protect Pacific ocean perch, shortraker rockfish, and roughey rockfish, the three most valuable commercial species in the assemblage, from possible overfishing. Each subgroup is assigned an individual TAC.

Although SR/RE are valuable, 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 SR/RE typically is closed at the beginning of the fishing year. In spite of this, the TAC and ABC amounts specified for these species were exceeded in 1996 and 1997:

Shortraker/rougheye category	YEAR		
	1995	1996	1997 (thru Nov)
ABC (mt)	1,220	938	938
TAC (mt)	1,098	938	938
Harvest (mt)	559	959	1,042

* Source: NMFS best blend catch database.

1.1.2 Management of the SR/RE Total Allowable Catch

In 1997, inseason monitoring and management of AI fisheries were frustrated by unanticipated high catch rates of SR/RE in the Pacific ocean perch and Atka mackerel trawl fisheries. These higher catch rates resulted in harvest amounts that exceeded ABC and TAC. Bycatch estimates of SR/RE through mid-1997 indicated that the overfishing level would be reached if all fisheries that took these species were not closed. As a result, NMFS prohibited the 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 AI subarea. The directed fishery for Greenland turbot by vessels using hook-and-line gear also was closed. If necessary, NMFS was prepared to close the Individual Fishing Quota fishery for sablefish to prevent overfishing of SR/RE. Thus, although overfishing concerns stemmed primarily from the bycatch of SR/RE in the POP and Atka mackerel trawl fisheries, lucrative non-trawl fisheries that also take incidental amounts of these rockfish also were closed, or threatened with closure, to prevent reaching the overfishing level. These overfishing closures disrupted fishing plans and created a loss of economic opportunity for both the trawl and non-trawl fishing industries.

Concerns about the overall management of the SR/RE TAC, as well as trawl and non-trawl industries frustration about actual or potential fishery closures resulting from overfishing concerns prompted the Council to take several actions at its June and September 1997 meetings. First, the Council requested that options to reduce the maximum retainable bycatch (MRB) percentages for SR/RE be explored to minimize the impact that "topping off" behavior may have on the rapid rate that SR/RE TAC is reached. "Topping off" occurs when vessel operators alter fishing operations to catch more SR/RE than they otherwise would so that their retained catch of these species may be maximized under MRB constraints. An analysis was prepared on alternative reductions of the MRB percentage (Ackley et al., 1997) and presented to the Council at its September 1997 meeting. Based on the analysis, the Council voted to establish a separate MRB percentage for SR/RE of 7 percent relative to deepwater species (rockfish species, sablefish, Greenland turbot, and flathead sole) and 2 percent relative to all other species except arrowtooth flounder, which cannot be used as a species against which SR/RE may be retained.

A final rule implementing these revised MRB percentages was published in the Federal Register on March 31, 1998 (63 FR 15334). It is 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 and should result in lower catch rates for SR/RE. Nonetheless, overall bycatch amounts still could pose concern because the TAC amounts annually specified for SR/RE are small in comparison to the high volume POP and Atka mackerel trawl fisheries.

At its June 1997 meeting, the Council also noted that other management measures, including gear allocations, may be considered in the future to address the competitive use of SR/RE bycatch in trawl and non-trawl fisheries. At its September 1997 meeting, the Council reiterated its request to staff to develop an analysis for an allocation of SR/RE between vessels using trawl and non-trawl gear to more directly respond to concerns by non-trawl groups that trawl bycatch of SR/RE could continue to result in closures of non-trawl fisheries. In general, representatives of the trawl and non-trawl industries supported an allocation of SR/RE between gear groups and recommended to the Council that 70 percent of the TAC be allocated to vessels using trawl gear and 30 percent of the TAC be allocated to vessels using non-trawl gear.

1.2 Alternatives Considered

1.2.1 Alternative 1: Status Quo

The SR/RE TAC would not be allocated between gear groups. MRB constraints would be the only management tool in place to reduce bycatch rates and NMFS could not take action to slow the catch of SR/RE in the trawl fisheries until TAC was reached. Any action taken by NMFS would not be gear specific, and would affect all gear types. This could cause non-trawl fisheries, that start later in the fishing year, to be preempted.

1.2.2 Alternative 2 : Allocate SR/RE between vessels using trawl and non-trawl gear

The SR/RE TAC would be allocated between vessels using trawl and non-trawl gear. Options for gear allocations as follows:

Option 1 (Preferred): 30 percent to non-trawl gear/70 percent to trawl gear - Industry recommendation

Option 2: 20 percent to non-trawl gear/80 percent to trawl gear - Historical catch distribution

Alternative 2 would allocate SR/RE TAC by gear type and would ensure that SR/RE TAC was available to non-trawl fisheries. Total catch of SR/RE would be monitored by gear type, and when either the trawl or non-trawl allocation was reached, SR/RE would become a prohibited species for vessels using the respective gear type. If, in spite of prohibited species status, bycatch of SR/RE continued to accrue at a rate that posed overfishing concerns, NMFS would close gear specific fisheries, while allowing other fisheries to remain open if the allocation of SR/RE to that gear type had not been attained. The gear allocation of SR/RE would allow NMFS to manage the trawl bycatch of SR/RE more effectively and to take precautionary measures to maintain bycatch within the allocated amount without affecting non-trawl fisheries. Under alternative 2, two options were considered. Option 1, the preferred option, would allocate 70 percent of SR/RE TAC to trawl gear and 30 percent to non-trawl gear. Option 2 would

allocate 80 percent of SR/RE TAC to trawl gear and 20 percent to non-trawl gear.

Option 1 was recommended by both sectors of the industry and is intended to provide an allocation to the non-trawl fleet in excess of actual relative harvest in recent years to provide these operations adequate opportunity to fully harvest non-trawl allocations of Pacific cod and sablefish. Trawl industry representatives endorsed this split in recognition that trawl bycatch rates likely will decrease as a result of the proposed reduction in the SR/RE MRB percentage and the fact that a gear specific allocation of SR/RE will allow more effective management of SR/RE bycatch in the trawl fisheries.

Option 2 would allocate SR/RE TAC based on the historical distribution of catch between the trawl and non-trawl sector. However, A gear allocation based solely on historical catch between gear groups (80/20 percent split between trawl and non-trawl, respectively) would not adequately account for the fact that non-trawl fisheries have been preempted in the past by trawl bycatch of SR/RE nor would it conform with an industry negotiated settlement on what an "equitable" allocation should be.

1.3 Analysis of SR/RE bycatch based on observer data

Data and assumptions

A proposal for reduction of MRB percentages for SR/RE in AI fisheries was presented to the Council in September 1997 (Ackley et al., 1977). The MRB analysis of SR/RE bycatch in AI fisheries was conducted without regard to gear type and concentrated on the Atka Mackerel and POP fisheries. The MRB analysis was based on observer data collected from hauls made during 1995 and 1996. The observer data were provided by NMFS 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 MRB analysis. Because the MRB percentages apply across all gear types, distinctions in gear were not included in this analysis. Given that the Atka Mackerel and POP fisheries are trawl fisheries, the MRB analysis provides a description of trawl fishery rockfish bycatch in the AI.

The present analysis focuses on non-trawl fisheries. Data are the same as described in the previous document, and the same targeting algorithm was used. Targets were assigned as dominant target species catch in a tow, with the "other" groundfish category being equivalent to the total catch minus the combined catch from all possible target groups. When this "other" groundfish category was greater than any individual target species, the haul was classified as other groundfish and may not accurately represent the actual intended target. Hauls assigned the rockfish target were further subdivided by dominant rockfish catch for target assignment. Gear groups included two trawl categories (bottom net and pelagic net), pot gear and longline gear as recorded by observers.

In the Aleutian Islands, the majority of groundfish are taken by trawl gear, with bottom trawls for Atka mackerel dominating the catch. However, a substantial catch of pollock by vessels using pelagic trawls occurred in 1995 (Figures 1 and 2, top panel). Bottom trawl fisheries for Pacific Ocean Perch (POP) and Pacific cod also exist.

Non-trawl fisheries account for less than 6 percent of groundfish catch. The longline fishery accounted for 4.5 percent and 4.4 percent of the total observed groundfish harvest in 1995 and 1996, respectively (Table 1). The greatest groundfish catch in the longline fishery was Pacific cod, and in 1995 and 1996,

catch in the Pacific cod fishery made up 56 percent and 70 percent of the total longline catch, respectively. The 3,148 mt of Pacific cod observed in 1995, and the 4,013 mt observed in the 1996 longline catch was approximately 37 percent and 30 percent of the total observed Pacific cod catch in each year, respectively (Table 1).

The AI trawl fisheries account for over 98 percent of the observed rockfish catch (Tables 2 and 3). The highest rockfish *catch* is taken in the directed POP fishery, and the highest *bycatch* of rockfish is taken in the trawl fishery for Atka Mackerel (Figures 1 and 2, middle panel). Northern rockfish are the primary species encountered in the Atka Mackerel trawl fishery, with some POP and SR/RE bycatch. Note that individual trawl hauls with a high catch of northern rockfish have been classified as northern rockfish hauls in Figures 1 and 2. In comparison with the catch and bycatch of rockfish in trawl fisheries, longline catch and bycatch of rockfish is very small and the longline percentage of total rockfish bycatch was approximately 1.5 percent in 1995 and 1 percent in 1996 (Tables 2 and 3).

Bycatch of SR/RE is highest in the trawl POP fishery, and in the Atka Mackerel trawl fishery (Figures 1 and 2, panel 3). Shortraker/rougeye are also encountered in longline fisheries for Pacific cod, and other groundfish. Again, hauls dominated by species not included as target categories have been classified as other groundfish in this analysis. Examples of dominant catch in these hauls in the longline fisheries include grenadier and halibut. Of the total observed SR/RE bycaught in 1995 and 1996, 20.5 percent and 10.1 percent were taken in longline fisheries in each year, respectively (Tables 2 and 3).

The other rockfish species most commonly encountered by longline gear are shortspine and thornyhead rockfish. In 1995, the longline fisheries accounted for 93.2 percent of the observed bycatch of these two species and in 1996, 65 percent of the shortspine/thornyhead rockfish were taken in longline fisheries (Tables 2 and 3). Whereas the dominant groundfish catch in the longline fisheries is Pacific cod (see above), few shortspine thornyhead rockfish are taken in the Pacific cod fishery (less than 1 percent in 1995 or 1996). The fisheries which primarily encounter shortspine/thornyhead rockfish are the other groundfish category (56.2 percent and 64.7 percent of the shortspine thornyhead in 1995 and 1996, respectively), and the sablefish and Greenland turbot fishery (Tables 2 and 3). The other groundfish category may have had actual targets of sablefish or Greenland turbot.

Average bycatch rates

Non-trawl bycatch rates (Table 4) were calculated as had been done previously for the trawl Atka Mackerel and POP fisheries in the AI (Table 5 and 6), and for rockfish fisheries in the Gulf of Alaska (Heifetz and Ackley, 1997). The five non-trawl fisheries for which bycatch rates were calculated were the longline fisheries for Pacific cod, other groundfish, sablefish and Greenland turbot and the pot gear fishery for Pacific cod. Table 4 provides the estimated annual bycatch rates of rockfish in these fisheries based on observer data, as well as the calculated coefficient of variation (CV) for each estimate.

The bycatch rates for several species in non-trawl fisheries are very low, and these species include northern rockfish, POP, pelagic slope rockfish (includes dusky rockfish), thornyhead rockfish and other rockfish (Table 4). The reported amounts of these species bycaught in the non-trawl fisheries in each year are also provided in Tables 2 and 3, and as discussed above, the bycatch amounts are low as well.

The bycatch rates for SR/RE are highest in the longline fisheries for sablefish and other groundfish. The longline fishery for sablefish had bycatch rates of 4.61 percent and 4.98 percent in 1995 and 1996, respectively, and the longline fishery for other groundfish (which may actually include some sablefish

targeted hauls) experienced bycatch rates of 2.62 percent and 2.21 percent in each year, respectively. Although the longline fishery for Greenland turbot had a relatively low bycatch rate of SR/RE in 1995 of 1.13 percent, the bycatch rate more than doubled to 3.02 percent in 1996.

The highest bycatch rates of any rockfish species were found in the longline fishery for sablefish with bycatch rates of shortspine/thornyhead rockfish of 13.21 percent in 1995 and 13.88 percent in 1996 (Table 4). Shortspine/thornyhead rockfish were also the rockfish species bycaught at the highest rates in the Greenland turbot fishery (4.29 percent in 1995 and 6.33 percent in 1996). The longline fishery classified as other groundfish had bycatch rates of shortspine thornyhead of 2.81 percent in 1995 and 2.02 percent in 1996.

The bycatch rates of aggregated rockfish in non-trawl fisheries were lowest in the two fisheries for Pacific cod. The pot gear fishery for Pacific cod had a rockfish bycatch rate of 0.06 percent in both 1995 and 1996, and the longline fishery for Pacific cod had rates below 2 percent (Table 4). The aggregated rockfish bycatch rates were fairly similar in the other groundfish longline fishery and the Greenland turbot longline fishery with overall rates between approximately 5 percent and 6 percent with the exception of the 1996 Greenland turbot fishery which had an aggregated rockfish bycatch rate of 9.35 percent. The highest aggregated rockfish bycatch rates were found in the longline fishery for sablefish. In 1995 the bycatch rate in this fishery was 18.1 percent, and in 1996 the rate was 19.1 percent.

1.4 Analysis of SR/RE bycatch based on NMFS estimates of total catch

NMFS's best blend estimate of SR/RE catch shows a distribution between trawl and non-trawl fisheries that is similar to that indicated by observer data, above. In 1995 and 1996, trawl gear fisheries accounted for 82 percent and 80 percent of the SR/RE catch, respectively. Conversely, hook-and-line gear fisheries accounted for 18 percent and 20 percent of the catch in each respective year (Table 7). In 1997, the rockfish and Atka mackerel trawl fisheries accounted for 91 percent of the SR/RE catch and the hook-and-line gear fisheries for 9 percent.

The relative distribution of SR/RE catch among non-trawl fisheries differs considerably between the best blend estimates (Table 7) and the estimates based on observer data (Tables 2 and 3). This disparity is due largely to different algorithms used to define target 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 6. This section contains the discussion of the environmental impacts of the alternatives including impacts on threatened and endangered species 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.

A summary of the effects of the annual groundfish harvests on the biological environment and associated impacts on marine mammals, seabirds, and other threatened or endangered species are discussed in the final environmental assessment for the annual groundfish total allowable catch specifications.

Social and economic impacts of the alternatives are considered in Section 3.1 as part of the RIR prepared for this action.

2.2 Impacts on Endangered or Threatened Species

Background. The ESA provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by the Department of Commerce (NMFS) for most marine species, and the U.S. Fish and Wildlife Service (FWS) for terrestrial and freshwater species.

The ESA procedure for identifying or listing imperiled species involves a two-tiered process, classifying species as either threatened or endangered, based on the biological health of a species. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. §1532(20)].

Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. §1532(20)]. The Secretary, acting through NMFS, is authorized to list marine mammal and fish species. The Secretary of Interior, acting through the FWS, is authorized to list all other organisms.

In addition to listing species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the "maximum extent prudent and determinable" [16 U.S.C. §1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. The primary benefit of critical habitat designation is that it informs Federal agencies that listed species are dependent upon these areas for their continued existence, and that consultation with NMFS on any Federal action that may affect these areas is required. Some species, primarily the cetaceans, listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Listed Species. The following species are currently listed as endangered or threatened under the ESA and occur in the BSAI:

Endangered

Northern Right Whale

Balaena glacialis

Bowhead Whale ¹	<i>Balaena mysticetus</i>
Sei Whale	<i>Balaenoptera borealis</i>
Blue Whale	<i>Balaenoptera musculus</i>
Fin Whale	<i>Balaenoptera physalus</i>
Humpback Whale	<i>Megaptera novaeangliae</i>
Sperm Whale	<i>Physeter macrocephalus</i>
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>
Short-tailed Albatross	<i>Diomedea albatrus</i>
Steller Sea Lion ²	<i>Eumetopias jubatus</i>

Threatened

Snake River Fall Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Snake River Spring/Summer Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Steller Sea Lion ³	<i>Eumetopias jubatus</i>
Spectacled Eider	<i>Somateria fishcheri</i>

Section 7 Consultations. Because both groundfish fisheries are federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings⁴ that may occur are subject to ESA section 7 consultation. NMFS initiates the consultation and the resulting biological opinions are issued to NMFS. The Council may be invited to participate in the compilation, review, and analysis of data used in the consultations. The determination of whether the action "is likely to jeopardize the continued existence of" endangered or threatened species or to result in the destruction or modification of critical habitat, however, is the responsibility of the appropriate agency (NMFS or FWS). If the action is determined to result in jeopardy, the opinion includes reasonable and prudent measures that are necessary to alter the action so that jeopardy is avoided. If an incidental take of a listed species is expected to occur under normal promulgation of the action, an incidental take statement is appended to the biological opinion.

Section 7 consultations have been done for all the above listed species, some individually and some as groups. Below are summaries of the consultations.

Endangered Cetaceans. NMFS concluded a formal section 7 consultation on the effects of the BSAI groundfish fisheries on endangered cetaceans within the BSAI on December 14, 1979. This opinion concluded that the fisheries are unlikely to jeopardize the continued existence or recovery of endangered whales. Consideration of the bowhead whale as one of the listed species present within the area of the Bering Sea fishery was not recognized in the 1979 opinion, however, its range and status are not known

¹species is present in Bering Sea area only.

²listed as endangered in waters west of Cape Suckling.

³listed as threatened in waters east of Cape Suckling.

⁴the term "take" under the ESA means "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct" (16 U.S.C. §1538(a)(1)(B)).

to have changed. No new information exists that would cause NMFS to alter the conclusion of the 1979 opinion. NMFS has no plan to reopen Section 7 consultations on the listed cetaceans for this action. Of note, however, are observations of Northern Right Whales during Bering Sea stock assessment cruises in the summer of 1997 (NMFS per. com). Prior to these sightings, and one observation of a group of two whales in 1996, confirmed sightings had not occurred.

Steller sea lion. The Steller sea lion range extends from California and associated waters to Alaska, including the Gulf of Alaska and Aleutian Islands, and into the Bering Sea and North Pacific and into Russian waters and territory. In 1997, based on biological information collected since the species was listed as threatened in 1990 (60 FR 51968), NMFS reclassified Steller sea lions as two distinct population segments under the ESA (62 FR 24345). The Steller sea lion population segment west of 144°W. longitude (a line near Cape Suckling, Alaska) is listed as endangered; the remainder of the U.S. Steller sea lion population maintains the threatened listing.

NMFS designated critical habitat in 1993 (58 FR 45278) for the Steller sea lion based on the Recovery Team's determination of habitat sites essential to reproduction, rest, refuge, and feeding. Listed critical habitats in Alaska include all rookeries, major haul-outs, and specific aquatic foraging habitats of the BSAI. The designation does not place any additional restrictions on human activities within designated areas. No changes in critical habitat designation were made as result of the 1997 re-listing.

Beginning in 1990 when Steller sea lions were first listed under the ESA, NMFS determined that both groundfish fisheries may adversely affect Steller sea lions, and therefore conducted Section 7 consultation on the overall fisheries (NMFS 1991), and subsequent changes in the fisheries (NMFS 1992). The most recent biological opinion on the BSAI fisheries effects on Steller sea lions was issued by NMFS January 26, 1996. It concluded that these fisheries and harvest levels are unlikely to jeopardize the continued existence and recovery of the Steller sea lion or adversely modify critical habitat. NMFS has no plan to reopen Section 7 consultations on Steller sea lions for this action.

Pacific Salmon. No species of Pacific salmon originating from freshwater habitat in Alaska are listed under the ESA. These listed species originate in freshwater habitat in the headwaters of the Columbia (Snake) River. During ocean migration to the Pacific marine waters a small (undetermined) portion of the stock go into the Gulf of Alaska as far east as the AI. In that habitat they are mixed with hundreds to thousands of other stocks originating from the Columbia River, British Columbia, Alaska, and Asia. The listed fish are not visually distinguishable from the other, unlisted, stocks. Mortal take of them in the chinook salmon bycatch portion of the fisheries is assumed based on sketchy abundance, timing, and migration pattern information.

NMFS designated critical habitat in 1992 (57 FR 57051) for the for the Snake River sockeye, Snake River spring/summer chinook, and Snake River fall chinook salmon. The designations did not include any marine waters, therefore, does not include any of the habitat where the groundfish fisheries are promulgated.

NMFS has issued two biological opinions and no-jeopardy determinations for listed Pacific salmon in the Alaska groundfish fisheries (NMFS 1994, NMFS 1995). Conservation measures were recommended to reduce salmon bycatch and improve the level of information about the salmon bycatch. The no jeopardy determination was based on the assumption that if total salmon bycatch is controlled, the impacts to listed salmon are also controlled. The incidental take statement appended to the second biological opinion allowed for take of one Snake River fall chinook and zero take of either Snake River

spring/summer chinook or Snake River sockeye, per year. As explained above, it is not technically possible to know if any have been taken. Compliance with the biological opinion is stated in terms of limiting salmon bycatch per year to under 55,000 chinook salmon, and 200 sockeye salmon in the BSAI fisheries, respectively.

Short-tailed albatross. The entire world population in 1995 was estimated as 800 birds; 350 adults breed on two small islands near Japan. The population is growing but is still critically endangered because of its small size and restricted breeding range. Past observations indicate that older short-tailed albatrosses are present in Alaska primarily during the summer and fall months along the shelf break from the Alaska Peninsula to the Gulf of Alaska, although 1- and 2-year old juveniles may be present at other times of the year (FWS 1993). Consequently, these albatrosses generally would be exposed to fishery interactions most often during the summer and fall--during the latter part of the second and the whole of the third fishing quarters.

Short-tailed albatrosses reported caught in the longline fishery include two in 1995, one in October 1996, and none so far in 1997. Both 1995 birds were caught in the vicinity of Unimak Pass and were taken outside the observers' statistical samples.

Formal consultation on the effects of the groundfish fisheries on the short-tailed albatross under the jurisdiction of the FWS concluded that BSAI groundfish fisheries would adversely affect the short-tailed albatross and would result in the incidental take of up to two birds per year, but would not jeopardize the continued existence of that species (FWS 1989). Subsequent consultations for changes to the fishery that might affect the short-tailed albatross also concluded no jeopardy (FWS 1995, FWS 1997). The US Fish and Wildlife Service does not intend to renew consultation for this action.

Spectacled Eider. These sea ducks feed on benthic mollusks and crustaceans taken in shallow marine waters or on pelagic crustaceans. The marine range for spectacled eider is not known, although Dau and Kitchinski (1977) review evidence that they winter near the pack ice in the northern Bering Sea. Spectacled eider are rarely seen in U.S. waters except in August through September when they molt in northeast Norton Sound and in migration near St. Lawrence Island. The lack of observations in U.S. waters suggests that, if not confined to sea ice polynes, they likely winter near the Russian coast (FWS 1993). Although the species is noted as occurring in the BSAI, no evidence that they interact with the groundfish fisheries exists.

Conditions for Reinitiation of Consultation. For all ESA listed species, consultation must be reinitiated if: the amount or extent of taking specified in the Incidental Take Statement is exceeded, new information reveals effects of the action that may affect listed species in a way not previously considered, the action is subsequently modified in a manner that causes an effect to listed species that was not considered in the biological opinion, or a new species is listed or critical habitat is designated that may be affected by the action.

Impacts of the Alternatives on Endangered or Threatened Species. The alternatives under consideration are allocative in nature and will not affect the prosecution of the groundfish fisheries of the BSAI in a way not previously considered in the above consultations. None of the alternatives would affect overall TAC amounts, PSC limits, or takes of listed species. It is possible that the preferred alternative (Alternative 2, option 1) would, under certain circumstances, slightly reduce the total amount of trawl effort and slightly increase the amount of non-trawl effort in the Aleutian Islands subarea. This would reduce the impact associated with trawl gear in the Atka mackerel and Pacific ocean perch

fisheries and could cause small amounts of the Atka mackerel TAC to remain unharvested. To the extent that Atka mackerel is both limiting and important in the diet of Steller sea lions, this could have a beneficial impact. However, this reduction would be associated with a possible slight increase in the amount of non-trawl effort. To the extent that non-trawl gear is associated with sea bird entanglement, this could result in a negative impact. However, NMFS anticipates that the change in effort would be minimal and in most years non-existent. Therefore, none of the alternatives are expected to have a significant impact on endangered, threatened, or candidate species.

2.3 Impacts on Marine Mammals

Marine mammals not listed under the ESA that may be present in the BSAI include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise (*Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp.*)] as well as pinnipeds [northern fur seals (*Callorhinus ursinus*), and Pacific harbor seals (*Phoca vitulina*)] and the sea otter (*Enhydra lutris*).

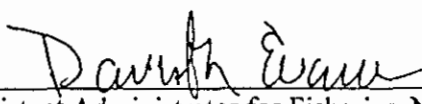
The proposed alternatives are allocative in nature and are designed to improve the inseason management of SR/RE bycatch in the AI fisheries. None of the alternatives would affect overall TAC amounts, PSC limits, or takes of marine mammals. Therefore, none of the alternatives are expected to have a significant impact on marine mammals.

2.4 Coastal Zone Management Act

Implementation of each of the alternatives 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.

2.5 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.


Assistant Administrator for Fisheries, NOAA

6/29/98
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 negative significant impact on a substantial number of small entities, an Initial Regulatory Flexibility Analysis (RFA) 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 addition, seafood processors with 500 employees or 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 percent 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.

The following table 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 are excerpted from the "Economic Status of the Groundfish Fisheries off Alaska, 1995" chapter of the draft 1997 SAFE report (NPFMC 1996).

	<u>GOA</u>	<u>BSAI</u>	<u>All Alaska</u>
<u>Trawl</u>			
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
<u>Hook and Line</u>			
All groundfish	1,351	175	1,403
sablefish	684	90	690
Pacific cod	525	100	594
Flatfish	3	44	45
Rockfish	582	21	598
<u>Pot</u>			
All groundfish	191	126	266
Pacific cod	190	124	265

Only a portion of these vessels that fish in the AI subarea of the BSAI would be affected by the proposed allocation of SR/RE between vessels using trawl and non-trawl gear. In 1996, 90 trawl vessels and 123 non-trawl vessels fished for groundfish in the AI subarea. A break out of these vessels follows:

Vessel Type	Number ¹
Trawl catcher/processor	43
Trawl catcher vessel	47
H&L catcher/processor	23
H&L catcher vessels	71
Pot catcher/processor	2
Pot catcher vessel	22
Total catcher vessels	140
Total catcher /processors	73

1/ Data from 1996 NMFS best Blend data base and ADF&G fish ticket data base

Of these vessels, 15 trawl catcher/processor vessels retained SR/RE, most of them while participating in either the POP or Atka mackerel fishery. Also in 1996, 16 freezer longline vessels 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).

Alternative 2 would reduce the amount of SR/RE available to the trawl sector by approximately 10 percent. To the extent that small entities participating in trawl fisheries actually retain SR/RE, this reduction would cause a negative impact. In 1996, small entities retained only 3000 lb. of SR/RE. Less than 600 pounds was landed by small entities participating in trawl fisheries. The remainder was landed by small entities participating in non-trawl fisheries. If the amount landed by trawl catcher vessels were reduced by 10 percent, a loss of 60 pounds, or \$66, could potentially result.

Under Alternative 2, total catch of SR/RE would be used to monitor gear allocations of these species and when either the trawl or non-trawl allocation is reached, SR/RE would become a prohibited species to vessels using the respective gear type. If, in spite of prohibited species status, bycatch of SR/RE still accrues at an unacceptable rate that poses overfishing concerns, NMFS would close gear specific fisheries. Hook-and-line gear fisheries would not be threatened with closure if the allocation of SR/RE to these vessels has not been attained. The gear allocation of SR/RE would allow NMFS to manage the trawl bycatch of SR/RE more effectively and to take precautionary measures to maintain bycatch within the allocated amount without affecting non-trawl fisheries. Although these measures could constrain trawl operations in the AI subarea, the trawl vessels fishing for Atka mackerel and POP typically are not catcher vessels and are not considered "small entities" for purposes of the RFA. These vessels also are used to pursue other lucrative groundfish fisheries outside the AI subarea and any foregone harvest opportunities in this subarea because of SR/RE bycatch constraints could be compensated, in part, by groundfish harvest operations outside the AI.

The industry recommended allocation of SR/RE TAC between trawl and non-trawl vessels (70/30 percent split) under Alternative 2 is intended to provide an allocation to the non-trawl fleet in excess of actual relative harvest in recent years to provide these operations adequate opportunity to fully harvest non-trawl allocations of Pacific cod and sablefish. Trawl industry representatives endorsed this split in recognition that trawl bycatch rates likely will decrease as a result of the proposed reduction in the SR/RE MRB percentage and the fact that a gear specific allocation of SR/RE will allow more effective management of SR/RE bycatch in the trawl fisheries. A gear allocation based solely on historical catch between gear groups (80/20 percent split between trawl and non-trawl, respectively) would not adequately account for the fact that non-trawl fisheries have been preempted in the past by trawl bycatch of SR/RE nor would it conform with an industry negotiated settlement on what an "equitable" allocation should be.

Under Alternative 1, management agencies could not take action to slow the bycatch rate of SR/RE in the trawl fisheries until TAC was reached. Any action would continue to be across all gear types and in a manner that could preempt non-trawl fisheries that start later in the fishing year, after the SR/RE TAC has been taken.

The amount of SR/RE harvested and retained by the trawl and non-trawl fisheries since 1995 is presented below:

Amounts of AI shortraker/rougheye harvested and retained (mt), by fishery						
Fishery	year					
	1995		1996		1997 (thru 11/97)	
	harv.	ret.	harv.	ret.	harv.	ret.
Trawl rockfish (mostly POP)	347	337	638	575	781	638
Trawl Atka mackerel	95	52	129	74	161	89
Trawl Other	17	8	4	0	5	1
Total trawl	459	397	771	649	947	728
H&L Sablefish	75	40	57	20	30	2
H&L Greenland turbot	6	5	12	11	2	0
H&L Other	18	12	120	71	63	3
Total H&L	99	57	189	102	95	5
TOTAL	558	454	960	751	1042	733

* source: NMFS best blend catch database

The reported first whole sale price for SR/RE ranges from \$1.10 per pound⁵ for non-trawl operations to \$1.80 per pound⁶ for at-sea trawl processing operations. Using these prices, the total value of the 1996 SR/RE retained by non-trawl fisheries is estimated at \$247,356, of which \$3,300 is attributed to hook-and-line catcher vessels landing shoreside (using the first whole sale price reported for the freezer longliner fleet). The value of the SR/RE retained by trawl vessels is estimated at \$2.6 million.

Under either Alternatives 1 or 2, the potential foregone harvest opportunity to trawl and non-trawl 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. The 1996 total estimated exvessel value of AI subarea groundfish retained by trawl vessels was \$ 43.8 million . The value of AI groundfish retained by non-trawl vessel during 1996 was about \$ 9.2 million (Table 8). Under alternative 2, the potential for SR/RE bycatch in the trawl fisheries resulting in closure or peremption of non-trawl fisheries is eliminated.

⁵ Based on industry reported first whole sale price for freezer-longliner harvests of SR/RE rockfish.

⁶ Based on industry reported first wholesale price (F.O.B. Dutch Harbor) for at-sea trawl operations.

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 worth an estimated \$ 3,300). Conversely, the proposed action is expected to have a positive impact to the extent that bycatch in the trawl fisheries may be managed more effectively without impacting other gear groups. Given the above assessment, NMFS has determined that the proposed action would not result in a negative "significant impact" on small entities because it would not reduce annual gross revenues by more than 5 percent, increase total costs of production by more than 5 percent, or result in compliance costs for small entities that are at least 10 percent higher than compliance costs as a percent of sales for large entities, nor cause more than 2 percent of small entities to cease operations. As a result, a regulatory flexibility analysis was not prepared.

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

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Table 1. Observed total catch by gear and fishery, 1995 and 1996.

Total Observed Catch	Gear	Target	1995		1996		Percent of target across gear type			
			Weight (mt)	%subtot	Weight (mt)	%subtot	1995		1996	
Bottom Trawl	Atka Mackerel Bottom Pollock Pacific Cod Rock - Northern Rock - POP Rock - Shtr/rough Other Ground Pelagic Pollock Rock Sole Greenland Turbot		57,175.7	80.7%	79,959.9	79.6%	100.0%	100.0%	100.0%	100.0%
			138.2	0.2%	130.7	0.1%	23.3%	82.9%	23.3%	82.9%
			4,544.6	6.4%	7,803.4	7.8%	52.9%	58.3%	52.9%	58.3%
			889.2	1.3%	2,636.9	2.6%	100.0%	100.0%	100.0%	100.0%
			6,410.1	9.0%	8,595.6	8.6%	100.0%	100.0%	100.0%	100.0%
			112.6	0.2%	123.0	0.1%	78.1%	95.6%	78.1%	95.6%
			250.3	0.4%	200.4	0.2%	12.0%	12.8%	12.0%	12.8%
			444.1	0.6%	0.0	0.0%	0.9%	0.0%	0.9%	0.0%
			23.7	0.0%	0.0	0.0%	100.0%	na	100.0%	na
			886.1	1.3%	1,044.0	1.0%	63.4%	79.8%	63.4%	79.8%
Sub total		70,874.6		100,493.9						
% Total		56.5%		77.1%						
Pelagic Trawl	Bottom Pollock Pacific Cod Other Ground Pelagic Pollock		455.5	0.9%	26.9	0.1%	76.7%	17.1%	76.7%	17.1%
			193.5	0.4%	0.0	0.0%	2.3%	0.0%	2.3%	0.0%
			56.1	0.1%	0.0	0.0%	2.7%	0.0%	2.7%	0.0%
			47,585.2	98.5%	22,610.4	99.9%	99.1%	100.0%	99.1%	100.0%
			Sub total		48,290.3		22,637.3			
% Total		38.5%		17.4%						
Pot	Pacific Cod Other Ground		709.4	99.7%	1,573.8	99.3%	8.3%	11.8%	8.3%	11.8%
			2.3	0.3%	10.4	0.7%	0.1%	0.7%	0.1%	0.7%
			Sub total		711.7		1,584.2			
% Total		0.6%		1.2%						
Longline	Pacific Cod Rock - Shtr/rough Rock - Thornyhead Other Ground Sablefish Greenland Turbot		3,148.2	55.8%	4,012.9	70.3%	36.6%	30.0%	36.6%	30.0%
			31.5	0.6%	5.6	0.1%	21.9%	4.4%	21.9%	4.4%
			5.7	0.1%	4.8	0.1%	100.0%	100.0%	100.0%	100.0%
			1,769.5	31.4%	1,352.4	23.7%	85.1%	86.5%	85.1%	86.5%
			173.0	3.1%	69.9	1.2%	100.0%	100.0%	100.0%	100.0%
			511.1	9.1%	263.6	4.6%	36.6%	20.2%	36.6%	20.2%
			Sub total		5,639.0		5,709.3			
% Total		4.5%		4.4%						
Total		125515.61		130424.69						

Table 3. Observed catch/lycatch of rockfish species groups by gear and target fishery in the Aleutian Islands, 1996.

Gear	Target	Rockfish													
		Northern	POP	Shortspine-thornyhead	Pelagic	Shortraker/rougheye	Other rockfish	Total Rockfish							
		Weight	%subtot	Weight	%subtot	Weight	%subtot	Weight	%subtot	Weight	%subtot	Weight	%subtot		
Bottom Trawl	Alka Mackerel	2,619.8	57.9%	985.2	11.6%	0.3	1.6%	28.7	43.3%	64.5	12.2%	6.0	42.0%	3,715.1	27.2%
	Bottom Pollock	1.9	0.0%	20.9	0.2%	0.0	0.0%	0.1	0.2%	0.0	0.0%	0.0	0.0%	23.0	0.2%
	Pacific Cod	124.0	2.7%	30.3	0.4%	0.0	0.0%	2.8	4.2%	1.1	0.2%	0.3	1.9%	158.5	1.2%
	Rock - Pelagic	0.0	0.0%	2.9	0.0%	0.0	0.0%	10.0	15.0%	0.0	0.0%	0.0	0.0%	12.9	0.1%
	Rock - Northern	1,604.2	35.4%	218.8	2.6%	0.0	0.0%	21.8	32.9%	17.1	3.2%	4.4	30.9%	1,859.0	13.7%
	Rock - POP	177.8	3.9%	7,198.1	84.7%	17.9	80.5%	2.9	4.3%	367.1	69.5%	1.3	9.0%	7,767.7	56.8%
	Rock - Sht/rough	0.1	0.0%	23.3	0.3%	2.3	10.2%	0.0	0.0%	71.4	13.5%	2.3	16.3%	99.4	0.7%
	Other Ground	0.7	0.0%	10.4	0.1%	1.4	6.3%	0.0	0.1%	2.5	0.5%	0.0	0.0%	15.1	0.1%
	Greenland Turbot	0.0	0.0%	3.5	0.0%	0.3	1.5%	0.0	0.0%	4.8	0.9%	0.0	0.0%	8.7	0.1%
		Sub total	4,528.5		8,483.5		22.3		66.3		528.5		14.3		13,669.4
	% Total	99.7%		99.4%		35.0%		83.5%		89.3%		92.6%		98.6%	
Pelagic Trawl	Alka Mackerel	0.3	96.5%	0.0	0.0%	0.0	#DIV/0!	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.3	0.6%
	Bottom Pollock	0.0	0.0%	7.3	13.4%	0.0	#DIV/0!	0.0	0.0%	1.7	48.5%	0.0	0.0%	8.9	15.3%
	Rock - POP	0.0	0.0%	27.9	51.4%	0.0	#DIV/0!	0.0	0.0%	0.2	5.6%	0.0	0.0%	28.1	48.1%
	Pelagic Pollock	0.0	3.5%	19.2	35.3%	0.0	#DIV/0!	0.0	100.0%	1.6	46.0%	0.1	100.0%	21.0	36.0%
		Sub total	0.4		54.3		0.0		0.0		3.4		0.1		58.4
	% Total	0.0%		0.6%		0.0%		0.0%		0.6%		0.4%		0.4%	
Pot	Pacific Cod	0.1	100.0%	0.0	100.0%	0.0	#DIV/0!	0.7	84.4%	0.0	100.0%	0.0	#DIV/0!	0.9	87.2%
	Other Ground	0.0	0.0%	0.0	0.0%	0.0	#DIV/0!	0.1	15.6%	0.0	0.0%	0.0	#DIV/0!	0.1	12.8%
		Sub total	0.1		0.0				0.8		0.0		0.0		1.0
	% Total	0.0%		0.0%		0.0%		1.0%		0.0%		0.0%		0.0%	
Longline	Pacific Cod	11.8	99.5%	0.4	75.7%	0.2	0.5%	12.3	99.4%	30.1	50.4%	0.2	14.9%	55.5	42.0%
	Rock - Other	0.0	0.0%	0.0	0.0%	0.1	0.2%	0.0	0.0%	0.1	0.2%	0.3	24.5%	0.5	0.4%
	Rock - Sht/rough	0.0	0.0%	0.0	0.0%	0.2	0.5%	0.0	0.0%	2.3	3.9%	0.1	7.5%	2.6	2.0%
	Rock - Thornyhead	0.0	0.0%	0.0	0.0%	1.2	3.0%	0.0	0.0%	0.2	0.3%	0.1	7.6%	1.5	1.1%
	Other Ground	0.1	0.5%	0.1	17.8%	26.8	64.7%	0.1	0.6%	21.4	35.8%	0.5	45.4%	53.4	40.4%
	Sablefish	0.0	0.0%	0.0	0.0%	4.3	10.4%	0.0	0.0%	1.5	2.6%	0.0	0.0%	5.9	4.5%
	Greenland Turbot	0.0	0.0%	0.0	0.0%	8.5	20.6%	0.0	0.0%	4.1	6.8%	0.0	0.0%	12.6	9.5%
		Sub total	11.9		0.5		41.4		12.4		59.8		1.1		132.0
	% Total	0.3%		0.0%		65.0%		15.5%		10.1%		7.1%		1.0%	
	Total	4,540.8		8,548.4		63.6		79.5		591.8		15.5		13,860.8	
	% Grand Total	32.8%		61.7%		0.5%		0.6%		4.3%		0.1%		100.0%	
		GRAND TOTAL													
		13,860.8													
		100.0%													

Table 4. Average bycatch rates of rockfish in the Aleutian Islands fixed gear fisheries
(Rates here are defined as the ratio of bycatch weight to directed species catch weight)

Bycatch Species	Fishery	Rate		CV	
		1995	1996	1995	1996
Northern	Longline Cod	0.14%	0.34%	16.94%	12.17%
	Longline Other	0.01%	0.01%	58.80%	71.20%
	Pot cod	0.00%	0.01%	70.90%	20.01%
	Longline Sablefish	0.00%	0.00%	na	na
	Longline G. Turbot	0.00%	0.00%	100.04%	na
POP	Longline Cod	0.00%	0.01%	36.09%	28.76%
	Longline Other	0.01%	0.01%	72.24%	55.24%
	Pot cod	0.03%	0.00%	20.21%	25.82%
	Longline Sablefish	0.00%	0.11%	na	98.47%
	Longline G. Turbot	0.00%	0.00%	na	na
Pelagic Slope	Longline Cod	0.09%	0.35%	17.55%	10.18%
	Longline Other	0.01%	0.01%	58.43%	48.95%
	Pot cod	0.02%	0.05%	23.22%	17.46%
	Longline Sablefish	0.00%	0.00%	na	na
	Longline G. Turbot	0.00%	0.00%	na	na
Shortraker/rougheye	Longline Cod	0.20%	0.86%	20.77%	11.74%
	Longline Other	2.62%	2.21%	12.22%	13.34%
	Pot cod	0.00%	0.00%	57.81%	38.13%
	Longline Sablefish	4.61%	4.98%	19.96%	32.03%
	Longline G. Turbot	1.13%	3.02%	23.01%	19.52%
Shortspine	Longline Cod	0.01%	0.01%	54.82%	69.13%
	Longline Other	2.81%	2.02%	7.51%	12.09%
	Pot cod	0.00%	0.00%	na	na
	Longline Sablefish	13.21%	13.88%	10.75%	13.35%
	Longline G. Turbot	4.29%	6.33%	9.69%	11.95%
Thornyhead	Longline Cod	0.00%	0.00%	na	na
	Longline Other	0.15%	0.49%	26.44%	24.26%
	Pot cod	0.00%	0.00%	na	na
	Longline Sablefish	0.19%	0.00%	76.94%	na
	Longline G. Turbot	0.23%	0.00%	57.23%	na
Other Rockfish	Longline Cod	0.00%	0.00%	71.08%	81.18%
	Longline Other	0.00%	0.05%	78.77%	43.88%
	Pot cod	0.00%	0.00%	na	na
	Longline Sablefish	0.02%	0.00%	75.89%	na
	Longline G. Turbot	0.00%	0.00%	na	na
Total Rockfish	Longline Cod	0.45%	1.59%	12.41%	8.34%
	Longline Other	5.66%	4.80%	7.32%	9.54%
	Pot cod	0.06%	0.06%	14.51%	14.54%
	Longline Sablefish	18.10%	19.10%	9.38%	13.06%
	Longline G. Turbot	5.66%	9.35%	9.83%	11.31%
Number of Hauls	Longline Cod	500	747		
	Longline Other	468	286		
	Pot cod	449	778		
	Longline Sablefish	109	44		
	Longline G. Turbot	164	89		

Table 5. Average bycatch rates of rockfish in the Aleutian Islands Atka Mackerel fishery
 (Rates here are defined as the ratio of bycatch weight to directed species catch weight)

Bycatch Species	Area	Rate		CV	
		1995	1996	1995	1996
Northern	AI	3.13%	3.81%	5.11%	4.08%
	541	2.25%	1.90%	11.75%	11.83%
	542	2.58%	4.08%	7.78%	7.38%
	543	4.98%	4.90%	7.69%	5.21%
POP	AI	1.17%	1.43%	8.77%	7.04%
	541	1.26%	0.39%	29.82%	12.30%
	542	0.98%	2.17%	12.58%	9.68%
	543	1.56%	1.57%	10.75%	11.40%
Pelagic Slope	AI	0.01%	0.04%	25.67%	48.01%
	541	0.02%	0.03%	50.38%	20.55%
	542	0.01%	0.10%	32.25%	62.50%
	543	0.00%	0.01%	72.36%	34.87%
Shortraker/rougheye	AI	0.09%	0.09%	15.51%	16.51%
	541	0.06%	0.01%	54.91%	34.95%
	542	0.08%	0.16%	19.48%	15.71%
	543	0.12%	0.10%	27.99%	33.01%
Other Rockfish	AI	0.01%	0.01%	35.57%	36.38%
	541	0.01%	0.00%	79.06%	41.86%
	542	0.02%	0.01%	42.57%	61.80%
	543	0.01%	0.01%	50.37%	45.57%
Total Rockfish	AI	4.42%	5.40%	4.77%	3.80%
	541	3.60%	2.34%	13.49%	10.06%
	542	3.68%	6.54%	7.20%	6.40%
	543	6.67%	6.60%	6.92%	5.13%
Number of Hauls	AI	1211	1653		
	541	143	392		
	542	715	596		
	543	353	665		

Table 6. Average bycatch rates of rockfish in the Aleutian Islands Pacific Ocean Perch fishery (Rates here are defined as the ratio of bycatch weight to directed species catch weight)

Bycatch Species	Area	Rate		CV	
		1995	1996	1995	1996
Northern	AI	2.75%	2.46%	25.25%	18.55%
	541	2.65%	3.55%	30.34%	28.84%
	542	2.09%	3.77%	39.19%	42.39%
	543	na	1.56%	na	30.14%
Pelagic Slope	AI	0.08%	0.04%	25.07%	32.33%
	541	0.09%	0.05%	26.35%	54.40%
	542	0.02%	0.12%	72.39%	38.08%
	543	na	0.01%	na	100.92%
Shortraker/rougheye	AI	2.11%	5.08%	17.26%	10.21%
	541	2.30%	3.71%	20.25%	25.45%
	542	1.49%	4.78%	21.15%	22.81%
	543	na	5.85%	na	12.59%
Shortspine thornyhead	AI	0.04%	0.25%	31.70%	18.10%
	541	0.02%	0.00%	37.55%	101.85%
	542	0.12%	0.17%	45.72%	39.90%
	543	na	0.39%	na	18.70%
Other Rockfish	AI	0.09%	0.02%	93.33%	43.33%
	541	0.12%	0.00%	97.46%	na
	542	0.02%	0.10%	97.11%	50.98%
	543	na	0.01%	na	62.56%
Total non-POP rockfish	AI	5.09%	7.89%	15.46%	8.89%
	541	5.19%	7.37%	17.48%	18.64%
	542	3.75%	8.94%	24.89%	21.89%
	543	na	7.86%	na	11.27%
Number of Hauls	AI	210	248		
	541	142	72		
	542	59	46		
	543	9	130		

Table 8. Harvest of groundfish in 1996, by gear type in the Aleutian Islands subarea, and exvessel value of retained catch

GEAR TYPE	SPECIES	TOTAL CATCH (MT)	RETAINED CATCH (MT)	VALUE ¹ (million \$)
Trawl	Atka mackerel	103,125	86,473	27.6
	POP	12,826	9,831	3.1
	non POP rockfish	7,556	2,990	0.9
	Pollock	29,052	28,067	5.5
	Pacific cod	21,179	18,613	6.3
	Flatfish	2,355	1,162	0.4
	TOTAL (includes other misc groundfish)	177,297	147,181	43.8
Hook & Line	Pacific cod	5,819	5,348	3.1
	Greenland Turbot	907	361	0.2
	Sablefish	740	714	3.0
	Rockfish	339	187	0.3
	Other species	485	1	-
	TOTAL (includes other misc groundfish)	8,556	6,611	6.6
Pot	Pacific cod	4,611	4,511	2.6
	Other species	124	39	-
	TOTAL (includes other misc groundfish)	4,738	4,549	2.6

¹/ Value based on retained catch estimates and exvessel prices provided in the "Economic status of the groundfish fisheries off Alaska, 1996" (NPFMC 1997).