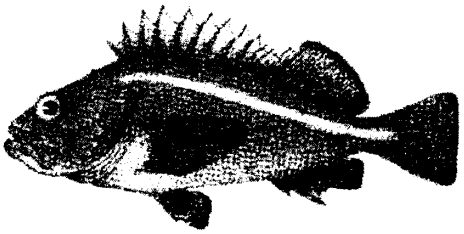
FINAL ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/
INITIAL REGULATORY FLEXIBILITY ANALYSIS

for a Regulatory Amendment for

Full Retention of Demersal Shelf Rockfish in Longline Fisheries in the Southeast Outside District



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Abstract: This document analyzes the effects of a regulatory amendment to require full retention of Demersal Shelf Rockfish (DSR) in the longline fisheries of the Southeast Outside District of the Gulf of Alaska. The action is needed to improve the gathering of information on the bycatch of DSR, to avoid either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold, to minimize waste to the extent practicable, and to achieve consistency between State and Federal regulations. Four alternatives were analyzed including status quo, the full retention of rockfish with alternative sales provisions, and an increased observer program requirement for catcher vessels. The preferred alternative requires the full retention of rockfish, and allows the sale of DSR up to 10 percent in weight of the total weight of target groundfish species harvested. The remaining DSR may be kept for any use, as long as it does not enter commerce. No significant impacts were identified for the preferred alternative.

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TABLE OF CONTENTS

EXECUTIVE SUMMARY vii

1.0 PURPOSE OF AND NEED FOR THE ACTION 1
- 1.1 Introduction 1
- 1.2 Background on DSR Management 1
- 1.3 Problem Statement 12

2.0 DESCRIPTION OF THE ALTERNATIVES 15
- 2.1 Alternatives Considered 15
- 2.2 Exempted Fishing Permit: An Additional Option 21
- 2.3 Alternatives Considered but Rejected 22

3.0 ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES 24
- 3.1 Biology of DSR Rockfish and Environmental Impacts on them from the Alternatives 24
- 3.2 Essential Fish Habitat 25
- 3.3 Trophic Interactions and Scavenger Population Response 26
- 3.4 Endangered Species Act considerations 27
- 3.5 Marine Mammal Protection Act considerations 31
- 3.6 Coastal Zone Management Act Considerations 31
- 3.7 Socioeconomic Impacts 31
- 3.8 Direct, Indirect and Cumulative Effects 32
- 3.9 Conclusions 33

4.0 REGULATORY IMPACT REVIEW 36
- 4.1 Introduction 36
- 4.2 What is a Regulatory Impact Review? 36
- 4.3 Statutory authority 37
- 4.4 Purpose and need for action 38
- 4.5 Alternatives considered 39
- 4.6 Description of fishery 41
- 4.7 Summary of the benefits and costs 53
- 4.8 Benefits of the alternatives 55
- 4.9 Costs of the alternatives 63
- 4.10 Summary of the significance criteria 67

5.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS 68
- 5.1 Introduction 68
- 5.2 The purpose of an IRFA 68
- 5.3 What is required in an IRFA? 69
- 5.4 What is a small entity? 69
- 5.5 What is this action? 71
- 5.6 Reason for considering the proposed action 71
- 5.7 Objectives of, and legal basis for, the proposed action 72
- 5.8 Number and description of small entities directly regulated by the proposed action .. 72

5.9 Adverse economic impacts on small entities 74
5.10 Recordkeeping and reporting requirements 75
5.11 Federal rules that may duplicate, overlap, or conflict with proposed action 75
5.12 Description of significant alternatives 76

6.0 REFERENCES 78

7.0 AUTHORS 81

8.0 CONSULTANTS AND CONTRIBUTORS 81

APPENDIX A 83

LIST OF TABLES

Table 1. Reported landings of demersal shelf rockfish (mt RWT) from domestic fisheries in the Southeast Outside District, 1982-2002 6
Table 2. Exploitable biomass (from line transect surveys), catch specifications and total catches (including discards) of adult yelloweye (mt) in the SEO, 1994-2002. 7
Table 3. Demersal shelf rockfish landed and confiscated in various fisheries in 1996-2002. Numbers are for unique vessels and separate landings. 10
Table 5. DSR directed fishery TAC Determination in the SEO Subareas 42
Table 6. Numbers of catcher vessels active in the directed DSR fisheries in the SEO, 1996-2001. 47
Table 7. DSR gross revenues from Directed DSR fishery 48
Table 8. SEO DSR directed catch, incidental catch, and estimated discards, 1993-2001. Metric tons round weight. 49
Table 9. Value of DSR incidental catch in halibut and groundfish fisheries in the SEO. 49
Table 10. Summary of the cost and benefit analysis 54
Table 11. Comparison of the alternatives 77

LIST OF FIGURES

Figure 1. Reporting Areas of the GOA. 2
Figure 2. Southeast Outside District (Eastern Regulatory Area 650) 5

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EXECUTIVE SUMMARY

State and Federal fisheries managers believe that a high level of unreported mortality of demersal shelf rockfish (DSR) is occurring in the incidental catch fisheries for DSR in the eastern Gulf of Alaska (GOA), particularly in the halibut longline fisheries. Currently, fishermen are limited to keeping 10 percent by weight of DSR caught in Federal waters, as measured against the catch of their target species. Any poundage in excess of that 10 percent maximum retainable amount[1] (MRA) must be discarded at sea.

Under State regulations enacted in July of 2000, all DSR caught in State of Alaska (State) waters must be retained, brought to port, weighed, and reported on fish tickets. All DSR caught over 10 percent of the landed catch of other species is kept for personal use or sold, with the proceeds from the sale forfeited to the State. The State's primary purpose in requiring full retention is to improve estimates of total mortality of DSR. The improved data in turn should allow biologists to better estimate the total fishing mortality. The State's secondary objective in enacting these regulations is to reduce waste in the DSR fishery.

The North Pacific Fishery Management Council in February and June of 1999 took action to require full retention of DSR caught in the Federal fisheries of the Southeast Outside District (SEO[2]). NMFS prepared a proposed rule which was similar to the State's regulations. However, the proposed rule ran into legal obstacles in the Spring of 2002; NOAA General Counsel determined that NMFS's regulatory authority over fishing likely does not extend to the disposition of sale proceeds; and therefore that section of the rule dealing with the disposal of DSR over the amount that could be legally sold was not viable. Subsequently in February 2003 the Council approved a modification of the preferred alternative which requires full retention of DSR but does not allow excess DSR to enter the stream of commerce.

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) examines four alternatives:

Alternative 1: No Action

Under this alternative the maximum retainable percentage limit as set out in 50 CFR 679(e) and 50 CFR 679.20, Table 10, would continue to apply. There would be no change in the 10 percent MRA for DSR for fishermen using hook-and line and jig gear in the SEO. Fishermen could retain any DSR caught, so

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[1]The term "maximum retainable amount" (MRA) replaces "maximum retainable bycatch" (MRB) due to a recent change in Alaska Region NMFS definitions (FR67 4141) to accord with Magnuson-Stevens Act definition of "bycatch." The only exception to the 10% MRA relevant to this rule is for sablefish, for which the MRA is 1%.

"Bycatch" is defined in the Act as "fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards. . ." (Sec. 3. 104-297)

"Regulatory discards" are defined as "fish harvested in a fishery which fishermen are required by regulation to discard whenever caught, or are required by regulation to retain but not sell." (Sec. 3 104-297)

The Act's definition of waste has a gray area, in that although it includes regulatory discards, it precludes fish for personal use from being labeled as "waste." In general in this EA, DSR caught in another directed fishery and not discarded at sea is referred to as "incidental catch," but the term "bycatch" is sometimes used in its more generally understood meaning of fish caught while targeting other fish, so that the terms "incidental catch" and "bycatch" are used somewhat interchangeably.

[2]This area is identical to Federal Regulatory Area 650.

long as the weight of the retained DSR was less than 10 percent of the weight of their target species; they are required to discard any DSR harvested which was over that limit.

Alternative 2: ***Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO.***[3]

This alternative requires full retention of DSR, allows for sale of up to 10% of landed catch, and provides ways to dispose of other rockfish. It has four parts:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted vessels using hook-and-line and jig gear in the SEO be retained, landed, weighed and reported on State of Alaska fish tickets;

3. Limit fishermen to retaining the revenues of incidental catch of DSR of no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip;

4. Provide two methods for disposal of any DSR in excess of the amount that may be sold:
   a. sell the excess DSR and relinquish the proceeds to the State of Alaska;
   b. retain the excess DSR for any other use except sale, barter, or trade.

This was previously the Council's preferred alternative, which NMFS has rejected because NOAA General Counsel determined that NMFS's regulatory authority over fishing does not extend to the disposition of sale proceeds (see Appendix A).

Alternative 3: ***(Preferred Alternative) Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO; don't allow DSR over 10 % sales limit to enter the stream of commerce***

Alternative 3 is similar to Alternative 2 except that any DSR caught in excess of the10% sale limit would not be allowed to enter the stream of commerce, but could be retained for any other use, including personal use or donation to a charity. Alternative 3 would:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained and landed. Catcher/processors would continue to observe current maximum retainable amounts (MRAs) for DSR.

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[3]This option was previously the preferred alternative, which NOAA GC has determined has legal obstacles that prevent it from being approved.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Allow retention of any DSR in excess of the amount that may be sold for any use except for sale, barter, or trade.

Adopting Alternative 3 would improve the collection of DSR mortality data, but because of the reduced options for disposing of excess incidental catch in comparison with Alternative 2, fishermen may have less incentive to comply with the regulations. ADF&G and NMFS are exploring options for encouraging a donation program that would allow excess DSR landed in the larger ports to be distributed to charities.

Alternative 4: Observer program on halibut longline and other hook-and-line vessels in the SEO to estimate mortality of DSR in non-target fisheries.

Under this alternative, the 10 percent MRA would be retained. Fishermen would still be required to discard DSR over that limit. This alternative would extend existing regulations requiring observer coverage for 30 percent of fishing days on catcher vessels from 60 to 125 feet length overall (LOA) to apply to catcher vessels fishing for groundfish and halibut in the SEO. The RIR/IRFA concludes that although an observer program might supply good data, the costs of carrying observers to the smaller vessels involved would be relatively higher than the costs to larger vessels and might be too high to make such a program practical. However, such a program might be more feasible if adopted as part of a broader, long term change to the North Pacific Groundfish Observer Program that is under consideration by the Council to address cost equity, coverage levels, conflict of interest, and other issues facing the Program.

The EA did not find any significant impacts to the environment from adopting any of these alternatives.

The Regulatory Impact Review

A directed DSR fishery from January 1 to March 15 and from November 16 to December 31 targets DSR, and primarily yelloweye rockfish, for domestic markets for quality fresh round product. Halibut fisheries and other groundfish fisheries harvest DSR from March 15 to November 15 as incidental catch. Some of this fish is high quality product that goes to the fresh round market and some is poorer quality product that is directed into lower-priced markets for fillets.

In 2000, an estimated 423 vessels fished in the halibut and groundfish fisheries in the Federal waters of the SEO in which DSR was taken as incidental catch. Almost all of these were catcher vessels. Only five of the 423 were catcher/processors. Most took at least some halibut. Only 80 caught groundfish without showing deliveries of at least some halibut. These were generally small vessels, that is, vessels under 60 feet in length. Only 51 were over 60 feet; almost all of these fell into the length range of 60 to 125 feet (estimates based on NMFS Catch by Vessel Database and RAM halibut fishing statistics).

This fleet generated an estimated $33 million in gross revenue from its harvests in the Federal waters of the SEO during 2000. Average gross revenues were about $79,000 per vessel. Almost all of the revenues from the Federal SEO waters were generated by catches of halibut and sablefish. Sablefish

revenues were about $21 million, while halibut revenues were about $12 million. Fishing in the SEO was only a part of the fishing activity by these vessels. Gross revenues for these vessels, from all groundfish and halibut fisheries off Alaska in 2000, were $111 million, or about $262,000 per vessel. In addition to significant statewide revenues from sablefish ($54 million) and halibut ($45 million), these vessels obtained large revenues from Pacific cod ($9 million). DSR incidental catch revenues for 2000 in the SEO (estimated in Table 9) were about $176,000, while total statewide DSR revenues (from incidental catch and directed harvests) were about $793,000 (estimated from Tables 7 and 9). These are only estimates of revenues from groundfish and halibut; many of these entities would also have earned revenues from other fisheries, of which Alaska's salmon and herring fisheries were probably most important. DSR incidental catch revenues were about 0.16% of the fleet's total statewide groundfish and halibut revenue; if probable herring and salmon revenues are also considered, DSR incidental catch revenues would have been an even smaller percentage of overall revenues. DSR incidental catch revenues in the SEO were about 0.53% of the fleet's groundfish and halibut revenues from Federal waters in the SEO.

Shoreside processors buying DSR also bought other groundfish, halibut, salmon, herring and crab. In 2000, the 22 firms processing groundfish in Southeast Alaska, had total gross revenues from all fish processing activities of about $262 million, or an average per plant of about $12 million. Several larger plants dominate the average calculation; the median gross revenues were about $5 million. Groundfish (which does not include halibut) were a relatively minor component of the processing activity, accounting for about 20% of aggregate firm gross revenues. Total groundfish revenues were about $52 million, or about $2.4 million per plant. The importance of groundfish varied across firms. Nine firms earned more than 10% of their gross revenues from groundfish, while five earned between 30% and 50% of their revenues from groundfish. No plant made more than 50% from groundfish. In comparison, the total first wholesale value of DSR products (from both the directed DSR fishery and from the DSR bycatch in other fisheries) in 2000 was about $1.2 million, or about $60,000 per plant.

In 2000, 41 catcher vessels, fishing with hook-and-line gear (and with some jig gear), participated in the directed fishery in Federal waters in the SEO. These vessels harvested 183 metric tons and grossed an estimated $617,000 (or about $15,000 per vessel).

Because no cost information is available for this fishery, and because there were no models that would have allowed projections of fishing behavior changes under the rules, and no models of the DSR markets, the RIR analysis is primarily qualitative. The impacts of the alternatives on resource management, the benefits, the costs, the extent to which the alternatives would accomplish program objectives, and the significance of each alternative under the criteria of E.O. 12866, are summarized in the following table.

Summary of the cost and benefit analysis (Table 10 in the RIR)

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	Status quo. Continue 10% MRA prohibiting retention above that level.	*Required retention. Fishermen must retain all DSR and dispose of it onshore without commercial compensation for excess.*	*Required retention. Fishermen must retain all DSR and dispose of it onshore without commercial compensation for excess. DSR may not enter "stream of commerce."*	*Observers. Implement 30% observer coverage on halibut and groundfish fishing vessels in the SEO.*
Impacts on resource management (See section 4.8)	None	Better information on bycatch mortality, potential source of funds for DSR management, fishermen may change behavior to avoid DSR	Better information on bycatch mortality, fishermen may change behavior to avoid DSR	Better information on bycatch mortality
Benefits (See Section 4.8)	No change in benefits	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Non-compliance could compromise the confidence that can be placed in this data source. Less frustration for fishermen over perceived DSR discard waste. Reduced conflict between State and Federal retention regulations. Benefits from improved management may also accrue to sport and subsistence users.	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Non-compliance could compromise the confidence that can be placed in this data source. Reduces the conflict between State and Federal retention regulations, but not to the extent of Alternative 2. May reduce waste, but not to extent of Alt. 2. Benefits from improved management may also accrue to sport and subsistence users.	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Benefits from improved management may also accrue to sport and subsistence users.
Costs (see Section 4.9)	No change in costs	Costs to fishermen for onboard storage, handling and delivery of DSR. Some additional cost to processors for additional weighing and grading. Depending on market conditions, as well as condition of surrendered catch, processors may face increased cold storage, inventory, handling, and [perhaps]] disposal costs. Potential costs for enforcement.	Costs to fishermen for onboard storage, handling and delivery of DSR. Some additional cost to processors for additional weighing and grading. Disposal costs higher than Alt 2 since there are fewer options. Depending on market conditions, as well as condition of surrendered catch, processors may face increased cold storage, inventory, handling, and [perhaps]] disposal costs. Potential costs for enforcement.	Additional observer costs of $330 per day, plus transportation costs. Reduced work room for crew on vessels. Changes in operating patterns of vessels may be necessary to accommodate the observers.
Net benefits	No change in net benefits	Impossible to quantify with the available information.	Impossible to quantify with the available information.	Impossible to quantify with the available information.
Program objectives (See Section 4.4)	Does not address issues of bycatch mortality, waste, and conflict between State and Federal regulations.	Improves bycatch mortality estimates, does not increase incentives to target DSR, reduces DSR waste, reduces conflict between State and Federal regulations. This alternative has legal difficulties.	Improves bycatch mortality estimates, does not increase incentives to target DSR. Reduces conflict between State and Federal regulations, although not to the extent of Alternative 2. Does not address waste issue.	Improves bycatch mortality estimates, likely has the strongest disincentive to target DSR (i.e., onboard observer). Does not address the issues of waste or of conflict between State and Federal regulations
E.O. 12866 significance (see Section 4.11)	Does not appear to be significant	Does not appear to be significant	Does not appear to be significant	Does not appear to be significant
Notes: Alternative 1 (status quo) is the no actionalternative and provides the baseline against which the costs and benefits for action alternatives have been estimated.				

The Initial Regulatory Flexibility Analysis

The directly regulated entities are those vessels taking DSR as incidental catch in halibut and groundfish fisheries in Federal waters of the SEO district and the processors buying the DSR from them. NMFS estimates that 423 vessels participated in these fisheries in 2000. Most of these vessels were less than 60 feet in length, fishing with hook-and-line gear and jig gear. Average gross revenues for these vessels from the Alaskan halibut and groundfish fisheries were about $262,000. Average gross revenues from all fisheries for these entities are undoubtedly higher, since these vessels participate in other fisheries in Alaska. In the years from 1996 to 2001, between 17 and 26 plants bought groundfish in Southeast Alaska. In 2000, the average gross revenues for these plants were about $12 million. NMFS estimates that these fishing and processing operations were all "small entities" within the meaning of the Regulatory Flexibility Act.

The Council's preferred alternative is Alternative 3. Under Alternative 3, small scale fishermen may experience increased costs associated with handling the additional DSR, of storing them on the vessel until it reaches port, and of unloading and disposing of the fish. Some fishermen may incur additional costs by changing their fishing patterns for their target species in order to avoid DSR bycatch. Costs may be higher on smaller vessels using refrigerated sea water (RSW) which lack deck space for special DSR totes, or on vessels that would otherwise have filled their holds with their target fish, but that are unable to given the requirement to retain a larger amount of DSR. Fishermen will also face costs of disposing of the excess DSR onshore. They will not be allowed to sell it; they may use it for personal use, donate it for charitable purposes, or discard it. Small processors would face the costs of weighing and recording additional DSR that may be landed. They are likely to play a role in helping vessel owners delivering excess DSR to dispose of this excess. These actions could include allowing plant employees to fillet and take excess DSR, adding DSR to their waste streams, or coordinating with donation programs to take excess DSR. Processors would no longer be able to sell excess DSR from federal waters. Processors appear to have received about ten metric tons of such DSR catch in 2001 (the largest annual volume listed), implying future gross revenues lost from this source of about $16,000 a year.

The Council's preferred alternative does not impose any new recordkeeping requirements on regulated entities. NMFS has not been able to identify any relevant Federal rules that may duplicate, overlap, or conflict with the preferred alternative.

This EA/RIR/IRFA has evaluated four alternatives: (1) the status quo, (2) full retention allowing excess DSR to enter the stream of commerce, (3) full retention prohibiting excess DSR from entering the stream of commerce, and (4) use of an observer program. As noted, the Council has chosen Alternative 3 as its preferred alternative. Alternative 1 imposes no adverse impacts on small entities, but fails to advance the action objectives of providing new information on DSR, reducing DSR wastage, and reducing conflict between state and federal regulations. NOAA General Counsel has identified serious legal issues with Alternative 2 that are described in Appendix A to this EA/RIR/IRFA. Alternative 2 may be less costly than Alternative 3 in that fishermen could allow processors to sell the extra DSR and relinquish the proceeds to the State. However, if processors are selling the DSR under Alternative 2, the possibility would exist for them to find roundabout ways to repay fishermen for bringing in extra DSR, thus adding a potential incentive for vessels to target on DSR. Alternative 3, the Council's preferred alternative, is discussed above. Finally, under Alternative 4, fishermen face additional costs for observer coverage, including travel and logistical expenses for observers, and an additional cost of about $330/day for 30% of days at sea. This alternative does provide new information on the status of DSR stocks, but it does not

reduce waste of DSR or reduce conflict between State and Federal regulations.

1.0 PURPOSE OF AND NEED FOR THE ACTION

1.1 Introduction

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) analyzes alternatives for improving data collection for incidentally caught demersal shelf rockfish (DSR) in the hook-and-line and jig gear fisheries in the Southeast Outside District (SEO) of the Gulf of Alaska (GOA). The current regulations require discard of all DSR bycatch over ten percent of the retained catch of targeted species in the fixed gear fisheries. It is believed that this system leads to a considerable amount of unreported discards, and that better data collection would enable biologists to conduct more accurate stock assessments, so that measures can be taken if necessary to prevent overfishing. The proposed changes in handling incidental catch of DSR are also intended to reduce wastage. DSR do not survive being caught and returned to the sea.

1.2 Background on DSR Management

1.2.1 Management authority for regulating fishery

The groundfish fisheries in the exclusive economic zone (EEZ) off Alaska are managed by the National Marine Fisheries Service (NMFS) under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The mission of NMFS is the stewardship of living marine resources for the benefit of the nation, through science-based conservation and management and promotion of a healthy marine environment. The goals for accomplishing this mission are maintaining sustainable fisheries, recovering protected species, and protecting the living marine habitat. Guidance for achieving these goals is taken from relevant Federal legislation.

The groundfish fisheries of the Gulf of Alaska (GOA) are managed under the Fishery Management Plan (FMP) for Groundfish of the Gulf of Alaska developed by the North Pacific Fishery Management Council (Council). The GOA Groundfish FMP was approved by the Secretary of Commerce and went into effect in 1978. It has been amended over sixty times.

Actions taken to amend fishery management plans 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 Sections 1 and 2 of this document, along with an overview of DSR management. Section 3 contains information on the affected environment and the expected direct or indirect effects of the alternatives on the environment, including potential impacts on fish habitat, marine mammals, and endangered species, as required by NEPA. It also includes a section analyzing the distinctions between the direct, indirect and cumulative effects of this action; and a conclusion analyzing the potential significance of the effects identified. Section 4 is the Regulatory Impact Review (RIR), which considers the economic impacts of the alternatives, as required by E.O. 12866. Section 5 addresses the RFA's requirement that the agency

consider potential impacts on small businesses. The remaining sections include a bibliography, a list of authors and consultants for this document, and an appendix.

1.2.2 Location of Groundfish Fisheries

The alternatives considered in this EA would affect groundfish fishing and IFQ halibut fishing in the Gulf of Alaska's Southeast Outside Area (SEO), which is identical to Federal Regulatory Area 650 (Figures 1 and 2). Detailed descriptions of all aspects of the groundfish fisheries are given in the Programmatic Supplemental Environmental Impact Statement (PSEIS) for the Alaska Groundfish Fisheries (NMFS 2004, Chapter 3). Pacific halibut are managed by the International Pacific Halibut Commission (IPHC) which is a joint commission of the United States and Canada. Further information about the Pacific halibut fishery can be found in Appendix A of the Council's Stock Assessment and Fishery Evaluation Report (SAFE) report (NPFMC 2001)[4] and on the IPHC website.[5]

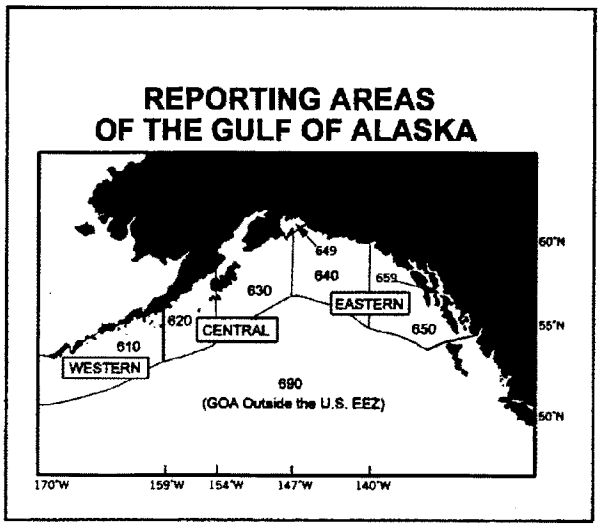

Figure 1. Reporting Areas of the GOA.

1.2.3 DSR management history

The DSR assemblage is comprised of seven species of nearshore, bottom-dwelling rockfishes (see section 3.1). These fishes all occur on the continental shelf and are generally associated with rugged, rocky habitat.

The dominant species in the DSR fishery is yelloweye rockfish (*Sebastes ruberrimus*), which accounts for 90 percent of all DSR landings. Quillback rockfish account for 8 percent of the catch. DSR exhibit slow growth and extreme longevity, and have a very low natural mortality rate, estimated at about two percent (O'Connell and Brylinsky 2001). These species are very susceptible to overexploitation and are slow to recover once driven below the level of sustainable yield (Leaman and Beamish 1984; Francis 1985).

Rockfishes have a closed swimbladder, which regulates buoyancy. They cannot withstand quick changes in pressure and therefore are susceptible to embolism mortality when brought to the surface from depth. Virtually no rockfish survive once caught without special precautions being taken. [6]

DSR have been taken as bycatch in other groundfish and halibut fisheries in Southeast Alaska since the early 1900s. Some DSR bycatch was also landed by foreign longline and trawl vessels targeting on slope rockfish in the Eastern Gulf from the late 1960s through the mid-1970s. Beginning in 1979 a small,

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[4]http://www.fakr.noaa.gov/npfmc/safes/safe.htm.

[5]http://www.iphc.washington.edu/halcom/research/research.htm.

[6]There is a market for live rockfish and it is possible to bring them up alive, slowly, if fishing in very shallow water. Some fishermen take live rockfish in British Columbia, but this fishery is illegal in Alaska.

shore-based rockfish fishery started up in Southeast Alaska, targeting primarily on the nearshore, bottom-dwelling component of the rockfish complex, mostly inside the 110 meter (m) contour.

The early directed fishery targeted the entire DSR complex. In 1986 the directed fishery for yelloweye accounted for 70 percent of the DSR landed and 67 percent of the total rockfish landed. Quillbacks accounted for 23 percent of DSR. The current fishery, which occurs primarily between the 75 m and 150 m contours, targets yelloweye rockfish almost exclusively. Yelloweye accounted for an average of 90 percent (by weight) of the total DSR catch over 1996-2000, and quillbacks for 8 percent.

The directed fishery is prosecuted almost exclusively with longline gear. Although snap-on longline gear was originally used in this fishery, most vessels now use conventional tub gear. The fish generally are bled and iced and brought in whole, and are sold to domestic markets for fresh fish. Processors will not accept fish landed more than three days after capture.

Prior to 1987, the DSR complex was grouped with the "other rockfish" complex in the GOA groundfish FMP, but these species were split into three components (along with pelagic shelf and slope rockfish) for management purposes in the eastern Gulf. Under the FMP, the State has much of the management authority for DSR. The State manages season length, seasonal apportionments of quotas, in-season adjustments, gear specifications, trip limits, and directed fishing quotas. The Federal government continues to conduct the DSR stock assessments, establishes total allowable catch (TAC) limits, and maintains regulatory authority for some other measures. The State has divided the SEO into four management areas: the Northern (NSEO), Central (CSEO) and Southern (SSEO) subdistricts and the East Yakutat subdistrict (EYKT), extending to 140° W. longitude (Figure 2). Two internal State water subdistricts, the Northern Southeast Inside (NSEI) and Southern Southeast Inside (SSEI) are managed entirely by the Alaska Department of Fish and Game (ADF&G) and are not included in the annual stock assessment.

ADF&G uses seasonal allocations to manage the directed longline fishery in the SEO and the internal State waters of Southeast Alaska. Sixty-seven percent of the directed fishery quota is allocated to the period between January 1 and March 15, and 33 percent to the period between November 16 and December 31. DSR may only be taken by hook-and-line gear in the directed fishery. There are no trawl fisheries in the SEO, as trawling was prohibited in the Eastern GOA (east of 140° W. longitude) in 1998.

Directed DSR fishery landings are currently constrained by various fishery management actions. The directed fishery is closed during the halibut IFQ season in order to prevent overharvesting. In Southeast Alaska, a 2.72 mt (6,000 lb) trip limit has been imposed. The EYKT also has a 5-day limit of 5.45 mt (12,000 lb). The directed fishery for DSR may be closed if the incidental catch of either halibut in the DSR fishery, or the DSR in the halibut fishery, is too high. On July 8, 1991, the GOA was closed to all groundfish fishing with longline gear, because the prohibited species catch (PSC) limit of halibut had been reached. Since 1992, the DSR fishery has had a separate[1] halibut PSC limit of 10 mt halibut mortality. In 1993 the fall directed fishery for DSR was canceled due to an unanticipated increase in DSR bycatch during the fall halibut fishery.

In 2003 for the second year in a row, the directed fishery in the EYKT will be preempted by the halibut fishery, because it is anticipated that the DSR bycatch mortality in that fishery will be 96 mt, which is 94% of the 106 mt ABC for this management area.

The history of domestic landings of DSR from the SEO is shown in Table 1. The directed and incidental catch of DSR together in the SEO increased from 120 mt in 1982 to a peak of 900 mt in 1993. In 2001, 122 mt of DSR were landed in the directed fishery, and 326 mt of DSR were taken as incidental catch, for a total of about 450 mt.

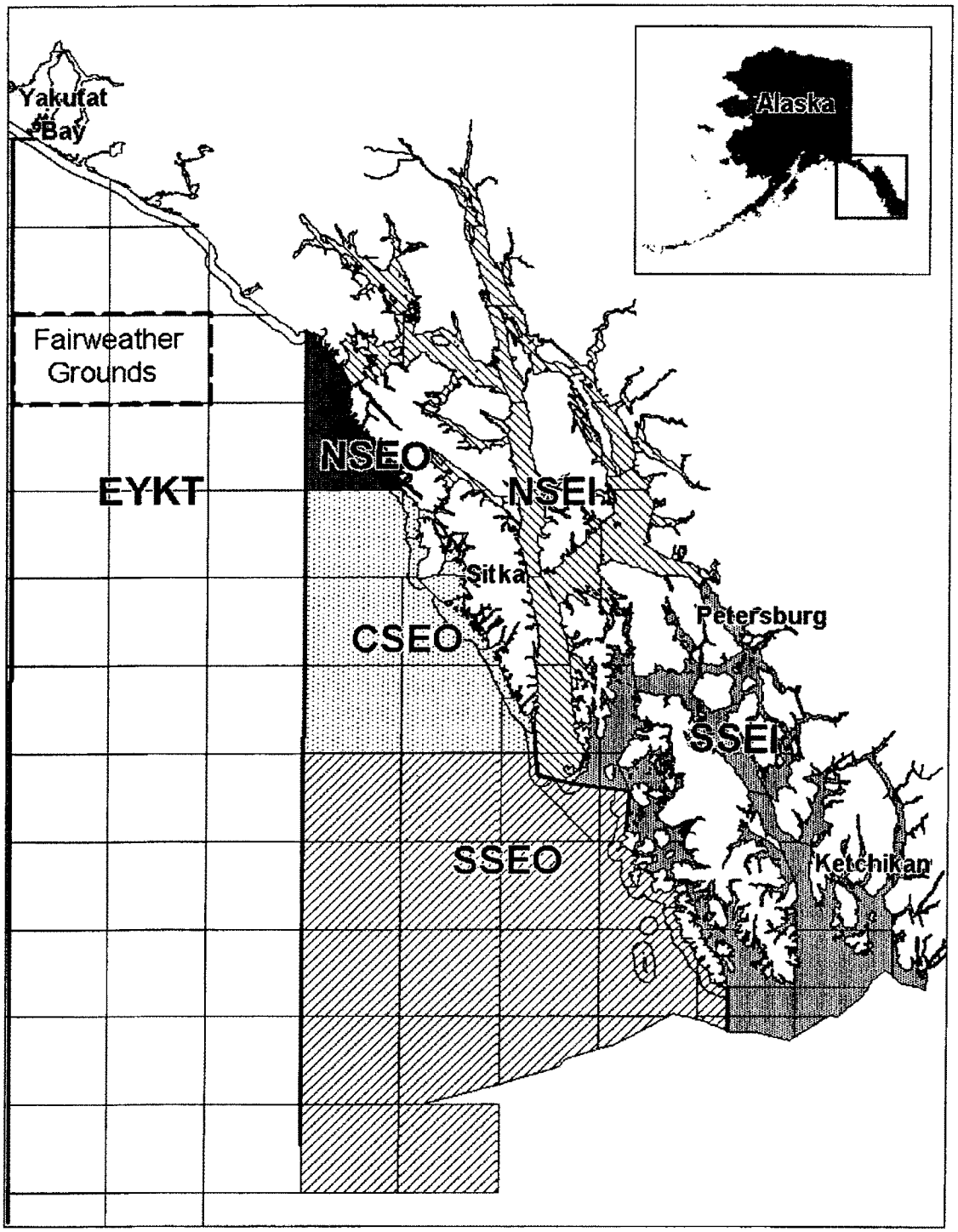

Figure 2. Southeast Outside District (Eastern Regulatory Area 650)

Table 1. Reported landings of demersal shelf rockfish (mt RWT) from domestic fisheries in the Southeast Outside District, 1982-2002[1]

	DIRECTED LANDINGS			INCIDENTAL CATCH LANDINGS		TOTAL SEO	
YEAR	Research	AREA 65 (east of 137°)	AREA 68 (140° to 137°)	AREA 65	AREA 68	LANDINGS	ABC[3]
1982	*	106	*	14	*	120	*
1983	*	161	*	15	*	176	*
1984	*	543	*	20	*	563	*
1985	*	388	*	100	1	488	*
1986	*	449	*	41	*	491	*
1987	*	726	77	47	5	855	*
1988	*	471	44	29	8	552	660
1989	*	312	44	101	18	475	420
1990	*	190	17	100	36	379	470
1991	*	199	187	83	36	889	425
1992	*	307	57	145	44	503	550
1993	13	246	99	254	18	901	800
1994	4	174	109	128	26	441	960
1995	13	110	67	90	22	282	580
1996	6	248	97	62	23	436	945
1997	13	202	65	62	25	381	945
1998	*	176	65	83	34	363	560
1999	*	169	66	74	38	348	560
2000	5	97	56	45	24	282	340
2001	6	122	50	110	37	326	330
2002[1]	1	76	0	111	37	226	350

Source: O'Connell, Carlile and Brylinsky (2002), Table 2.

[1] Landings from ADF&G Southeast Region fish ticket database and NMFS weekly catch reports through November 4, 2002.

[2] Estimated unreported DSR mortality associated with halibut fishery not reflected in totals: 1993=271 mt, 1994=353 mt, 1995=130 mt, 1996=156 mt, 1997=2204 mt, 1998=214 mt, 1999=324 mt, 2000=207 mt, 2001=170 mt, 2002=150 mt. (pers. comm. O'Connell, Jan. 7, 2003)

[3] From 1988 to 1993, ABC for FMP area 65 only; no ABC prior to 1987.

1.2.4 Stock Assessment and Exploitable Biomass

Traditional abundance estimation methods, such as area-swept trawl surveys and mark recaptures, are not considered useful for these fishes because of their distribution and life history. Rockfish density is estimated in the Eastern GOA using a manned submersible to do line transects (O'Connell et al. 2002; O'Connell and Carlile 1993). A total of 452 line transects have been run in the four management areas since 1989, six of them in 2001. Data is collected for four of the eight DSR species, but ABC/TAC recommendations for the entire assemblage are keyed to adult yelloweye biomass because that is the principal species targeted and caught (Table 2). The biomass estimate is derived as a product of estimated density, the estimate of rocky habitat within the 200 m contour, and the average weight of fish for each management area.

Estimation of total area of rocky habitat is difficult, as is estimation of line length for the transects (O'Connell et al. 2002). Techniques have changed over the years in an attempt to improve the survey. Due to revised estimates of rockfish habitat, for example, the 2000 assessment estimated the exploitable biomass at about 40 percent less than the 1999 estimate, or 15,100 mt in the SEO (Table 2). The total exploitable biomass of yelloweye rockfish in the SEO for 2003 is estimated to be 17,510 mt, a 10 percent

increase over 2002, also due to a change in the estimate of yelloweye habitat. The 2003 ABC is 390 mt and the overfishing level is 540 mt. The State has adopted a conservative harvest policy allowing for a 2% annual rate of exploitation, which is lower than the $F_{40\%}$ rate that would be obtained by the Tier 4 overfishing definition.[7] However, because of the patchy concentration of fishing effort, particularly prime habitat on the Fairweather Grounds, the harvest of yelloweye in some localities may be exceeding the overfishing level for the population (O'Connell and Brylinsky 2002).

Further information on stock assessment for DSR is found in a regional information report issued by ADF&G (O'Connell and Brylinsky 2001) and in the SAFE stock assessment report on DSR (O'Connell and Brylinsky 2002).

Table 2. Exploitable biomass (from line transect surveys), catch specifications and total catches (including discards) of adult yelloweye (mt) in the SEO, 1994-2002.

Year	Biomass	ABC	TAC	OFL	Reported Catch
1994	30,450	960	960	1,680	540
1995	20,190	580	580	1,044	220
1996	29,290	950	950	1,702	468
1997	29,290	560	560	1,450	406
1998	25,030	560	560	950	347
1999	25,030	560	560	950	297
2000	15,100	340	340	420	287
2001	14,695	330	330	410	301
2002	15,616	350	350	480	246*

*through 11/30/02
Source: NMFS catch specifications, catch statistics and biomass estimates.
http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm.

[7]The Tier 4 overfishing definition is the rate of fishing that would reduce the amount of spawning contributed by an average fish over the course of its lifetime to 40 percent of the amount that it would contribute in the absence of fishing.

1.2.5 Incidental Catch Management

NMFS determines annually how much of the TAC for each groundfish species is needed as bycatch in other groundfish fisheries. The remainder of the 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 onboard a vessel that is greater than the maximum retainable limit for that species or species group." The maximum percentage that can be retained as incidental catch is established for each species in the groundfish regulations. That percentage is calculated as a proportion of the basis species[8] that are retained onboard a vessel. Any bycatch in excess of the limit must be discarded. Such discards, required by the regulations, are known as regulatory discards. Maximum retainable catch limits reflect a balance between the need to reduce the harvest rate of bycatch species and the desire to minimize regulatory discards. In most fisheries where DSR is caught as bycatch, the MRA for DSR is 10 percent of the basis species.[9]

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 reasons, incidental catch amounts of the species may still be retained onboard a vessel up to the specified percentage of other groundfish catch open to directed fishing. NMFS attempts to manage groundfish TACs so that directed fishing closures are implemented in a timely manner, thereby providing sufficient portions of the TAC to allow for incidental catch in other fisheries. When the harvest amount approaches the TAC, NMFS may place the species on "prohibited" status, and any catch of that species must be discarded. If the harvest amount approaches the overfishing level (OFL), then NMFS may close those directed fisheries which take that species as bycatch, in order to prevent overfishing.

The MRAs 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 for fishing vessels to target on the species. Nonetheless, vessels may deliberately catch up to the MRA of a species on bycatch status, a practice which is referred to as "topping off."

Topping off is a recognized and legal activity. The incentive for fishermen to top off is directly related to the value of, and available market for, the incidental catch species in relation to the species being targeted. From the management perspective, limiting the amount of incidental catch a fisherman is allowed to retain is a tool to slow down harvest rates, which therefore do not necessarily reflect an "intrinsic" bycatch rate, but rather reflect a balance between the recognized need to slow harvest rates, minimize the potential for undesirable discards, and, in some cases, provide an increased opportunity to harvest available TAC.

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[8]Basis species are species open to directed fishing that the vessel is authorized to catch.

[9]Sablefish is the only exception to the 10% MRA which is relevant to this rule. The limit for sablefish is 1%.

Current regulations include a MRA for DSR of 10 percent by weight of most basis species. NMFS Enforcement may confiscate the overage amount, and assesses a $1,000 fine for the third or subsequent overages delivered in the same calendar year. When the overage is for DSR caught in State waters, the State of Alaska accepts surrendered DSR. In this case, the processor accepting delivery may sell the fish after recording the fish on the fish ticket as a forfeiture (harvest code "18"). The amount corresponding to the ex-vessel price is relinquished to the State of Alaska, which has set up a fishery fund for that purpose. The proceeds from DSR are not large enough for the State to use on an annual budgetary basis, but are being deposited into an account that can transcend fiscal years. This is intended to be used for management or research in the DSR fishery, once the account is sufficient.

Table 3 lists the reported DSR forfeitures for the directed fishery in excess of the trip limit and as incidental catch in the halibut fishery and other groundfish fisheries for the SEO district for 1996 – 2002. Approximately 123 vessels in the SEO target fishery, halibut incidental catch fishery, and other bycatch fisheries landed excess DSR, 58 of these in Federal waters. Note in particular the jump in the amount of confiscated fish due to the State regulation requiring full retention of DSR caught in State waters, which went into effect in the summer of 2000. Judging from these data, the State regulation seems to have resulted in a large increase in the amount of DSR retained from Federal waters as well and forfeited to the State, in spite of the regulation requiring discarding of all DSR over the 10 percent MRA level in Federal water, which still stands. Whether this reflects confusion due to the conflict between the two regulations, or whether it is simply easier for fishermen to deal with the situation by bringing all their DSR to port and risking a fine, is difficult to say.

The current management plan for DSR attempts to account for total mortality of DSR and set directed fishing levels after accounting for this bycatch. In 1998 and 1999, for example, the overfishing level for DSR was 950 mt and the TAC was set at 560 mt. The directed fishery quotas were set for the four ADF&G management areas in the SEO after subtracting the 300 mt estimated to be taken incidental to the halibut fishery. The total directed fishery quota for the SEO was 260 mt. However, the difficulty with setting these quotas, again, is that the true bycatch mortality of the DSR is unknown.

Table 3. Demersal shelf rockfish landed and confiscated in various fisheries in 1996-2002. Numbers are for unique vessels and separate landings.

		State and Federal waters				Federal waters only			
Year	Fishery	lb	mt	Vessels	Landings	lb	mt	Vessels	Landings
1996	Directed DSR	3,079	1.40	9	11	2,935	1.33	7	9
1996	Directed Halibut	4,116	1.87	36	50	2,768	1.26	19	25
1996	Other *	2,613	1.19	2	3	2,562	1.16	1	1
	TOTAL	9,808	4.45	47	64	8,265	3.75	27	35
1997	Directed DSR	3,882	1.76	7	9	3,850	1.75	7	9
1997	Directed Halibut	9,192	4.17	49	67	7,502	3.40	29	41
1997	Other *	223	0.10	5	5	42	0.02	1	1
	TOTAL	13,297	6.03	61	81	11,394	5.17	37	51
1998	Directed DSR	6,559	2.98	12	14	5,430	2.46	9	10
1998	Directed Halibut	14,253	6.46	44	70	8,035	3.64	30	41
1998	Other *	402	0.18	5	8	268	0.12	3	5
	TOTAL	21,214	9.62	61	92	13,733	6.23	42	56
1999	Directed DSR	6,231	2.83	9	11	5,743	2.60	7	9
1999	Directed Halibut	12,857	5.83	44	77	9,152	4.15	28	43
1999	Other *	887	0.40	10	14	152	0.07	3	3
	TOTAL	19,976	9.06	63	102	15,047	6.83	38	55
2000	Directed DSR	3,320	1.51	8	10	3,106	1.41	8	10
2000	Directed Halibut	11,937	5.41	53	77	8,688	3.94	30	35
2000	Other *	473	0.21	9	11	72	0.03	2	2
	TOTAL	15,731	7.14	70	98	11,866	5.38	40	47
2001	Directed DSR	4,037	1.83	7	7	3,720	1.69	7	7
2001	Directed Halibut	38,223	17.34	114	152	22,931	10.40	51	66
2001	Other *	79	0.04	2	2	0	0.00	0	0
	TOTAL	42,338	19.20	123	161	26,651	12.09	58	73

* miscellaneous finfish and directed lingcod fisheries

Source: ADF&G fish ticket data, round wt.

For 2002, the total directed quota was set at 180 mt, divided by subdistricts and by management area. In 2002 (for the first time), the directed fishery was pre-emped by the halibut fishery in the EYKT area, and this directed fishery will be pre-empted again in 2003, due to the high DSR mortality rate in the EYKT, which is estimated for 2003 to be 98 mt, or 94% of the 106 mt ABC for this management area (O'Connell et al. 2002). This preemption affects the Fairweather Ground, which is a portion of the EYKT management subdistrict and has supported an important directed fishery for DSR in past years. In the past, over one-third of the directed fishery quota was assigned to the EYKT (O'Connell and Brylinsky 2001)

The overfishing level for DSR is sufficiently higher than the TAC that it is unlikely the overfishing level would be reached under full retention, even if the true total mortality were higher than estimated. In years of high halibut catch, incidental catch in the halibut fishery would pre-empt the directed fishery, as is occurring this year in the EYKT. Conversely, it may be possible to increase the directed fishery TAC if it becomes apparent that NMFS has overallocated TAC to the incidental catch fishery.

1.2.6 Problems with bycatch estimation

Reported incidental catch of DSR taken in the course of the halibut fishery currently accounts for a significant portion of the total DSR catch: over 30 percent of the total DSR landings in Southeast Alaska in recent years (NPFMC 2001). However, this figure understates the true mortality rates. Unreported discards have been estimated by ADF&G as ranging from between 130 mt to 355 mt annually, but the estimates are considered unreliable, as data have become more difficult to collect under the halibut IFQ fishery.

Until the halibut IFQ system was instituted, unreported mortality of DSR during the halibut fishery was estimated based on IPHC interview data. For example, the 1993 interview data indicates a total mortality of DSR of 13 percent of the June halibut landings (by weight) and 18 percent of the September halibut landings. These data were taken by IPHC port samplers and summarized by the IPHC. The samplers believed the data to be marginal in quality.[10]

In recent years, ADF&G has used IPHC catch statistics to determine the percentage of the halibut catch taken in each of the four DSR management areas in the SEO. ADF&G estimated that approximately 47 percent of the 2C (IPHC Regulatory Area) halibut quota and 11 percent of the Area 3A halibut quota are taken in the SEO.[11] Based on the 2002 halibut quotas and distribution of harvest, ADF& G estimates the total DSR mortality for the 2002 SEO halibut fishery at 236 mt, but is concerned about indications in the yelloweye biological data that they may have underestimated bycatch mortality, and therefore harvested at a higher rate than intended. (O'Connell et al. 2002).

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[10]Morris Wade, IPHC, pers. comm. with Tory O'Connell, 1993.

[11]For IPHC area maps, see IPHC website at http://www.iphc.washington.edu/halcom/research/research.htm.

ADF&G also uses data from the IPHC longline surveys. The IPHC estimates are based on sampling 20 consecutive hooks on each skate of gear (a skate has 100 hooks).[12] Bycatch of DSR, expressed as the percentage of DSR weight to halibut weight (for legal-sized halibut) ranged from 0 to well over 100 percent, and estimates of area means ranged from 3 percent in the EYKT (excluding Fairweather stations) to 23 percent in the Fairweather Ground.

These data are evidence for the inherent problem in estimating a rate of bycatch for. DSR are habitat-specific, and IPHC longline survey data indicate that bycatch of DSR is highly variable both inter-annually and within year by area. Although DSR distribution overlaps with halibut, the distributions do not correlate. Relying on a 10 percent MRA therefore does not give ADF&G the information it needs to determine whether the TAC has been met, or whether the overfishing limit has been surpassed.

Most vessels in the Eastern Gulf longline fleet are under 60 ft and therefore do not carry observers. Although the IPHC requires logbooks for vessels 26 ft and longer, and State fish tickets include a box for reporting discards at sea, accurate weights, by species, for discards at sea are not possible, and State managers say that logbooks and fish tickets are unreliable in estimating DSR mortality.[13] IPHC logbook data is confidential and is not available to use for analysis of data by vessel over time and area.

1.3 Problem Statement

1.3.1 Identification of Problem

In 1996, the GOA Groundfish Plan Team began focusing on problems with obtaining accurate information on DSR mortality in the halibut longline fishery (see section 1.2.6 above for discussion of problems with bycatch estimation). According to anecdotal information from commercial fishermen, which was supported by data from International Pacific Halibut Commission (IPHC) surveys, some of the DSR bycatch, and possibly a high level, was not being reported. This introduced an unacceptable level of uncertainty for fishery management purposes in accounting for DSR mortality in the annual DSR stock assessment.

According to anecdotal evidence, the 10 percent MRA for DSR taken during the directed halibut fixed gear fishery is not always large enough to allow for normal bycatch rates in an area. On a season-wide basis, the total bycatch of DSR during the halibut fishery may be only 10 percent; but on an individual trip basis the bycatch of DSR varies greatly and for some trips may be much higher than the limit. The total bycatch mortality of DSR in other commercial fisheries is also unknown.

The major consequence to fishery management of not having a good understanding of bycatch is that the allowance for the target DSR fishery may be set too high, or too low. If the total bycatch of DSR were significantly greater than currently estimated, the allocation for the directed DSR fishery would need to be reduced. The converse would also be true, that if the total bycatch were lower than current estimates, the allocation might need to be raised – but it is unlikely that the bycatch rate is being overreported.

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[12]Heather Gilroy, Fisheries Statistics Manager, IPHC. Pers. comm., phone, Feb. 25, 2002.

[13]pers. comm. O'Connell, Jan. 7, 2003

ADF&G tackled this problem by proposing that the Alaska State Board of Fisheries (Board of Fisheries) and NMFS adopt complementary regulations implementing a full retention program for rockfish. Under this program, all incidental catch of DSR would be landed, weighed and reported. The information from this program would be used to help calculate total mortality, to enhance the DSR stock assessment and management for TAC setting. The information would also be used to evaluate whether, given the wide variation in DSR bycatch in different locations, it would make sense to keep the full retention requirement, or to reinstate the MRA, revised from the current 10 percent level if appropriate.

In September 1997, the Council initiated an analysis of a groundfish proposal submitted by ADF&G to require full retention of DSR in Statistical Area 650, or the Southeast Outside District (Figure 1). The Council adopted full retention as its preferred action in February, 1999. However, the rule ran into legal obstacles, as described subsequently, and has not been implemented by NMFS.

In July 2000 the Board of Fisheries enacted a regulation (5 AAC 28.171) requiring holders of Commercial Fish Entry Commission (CFEC) licenses to retain all species of rockfish caught in inside waters and all DSR caught in State waters (0-3 miles from shore). Overages must be reported on an ADF&G fish ticket. Any proceeds from the sale of excess rockfish bycatch must be forfeited to the State. The amount of DSR landed has increased substantially since this regulation was promulgated: in 2001, over 42,000 pounds of DSR were forfeited in Southeast Alaska, compared to less than 16,000 in 2000 (Table 3). However, the State regulation was intended to complement Federal regulations, and ADF&G managers are concerned that the data will be insufficient if it is based only on DSR taken in State waters. Also, because fishermen may face Federal penalties for retaining DSR in Federal waters in amounts that exceed MRAs, State managers suspect that fishermen may be taking the expedient route and failing to land all DSR caught in State waters.[14]

Management of DSR has been conservative; and the 2% level of harvest should be sustainable. However, these species occur patchily, and fishing effort concentrates on areas with the best habitat. Such effort has also increased, according to anecdotal reports, since the implementation of IFQs in the halibut fishery. There has also been a decline in density estimates on the Fairweather ground. All this leads State managers to conclude that localized overfishing may be occurring, and particularly that yelloweye occurring in prime habitat may be getting caught at a rate locally exceeding the overfishing level. (O'Connell et al. 2002).

1.3.2 Statement of Purpose

The Council's objectives in recommending a regulatory amendment requiring full retention of DSR bycatch are essentially fourfold:

1. To improve the gathering of information on the bycatch of DSR in the halibut longline fishery and other fisheries in the SEO, in order to get a more accurate picture of DSR mortality and to enable biologists to improve the annual stock assessments.

[14]Pers. comm. Tory O'Connell, 2002.

2. To avoid, in the process of implementing a full retention program, either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold.
3. To minimize waste to the extent practicable while meeting these goals.
4. To achieve consistency between State and Federal regulations that govern the retention and disposition of DSR harvested in the SEO.

1.3.3 Magnuson-Stevens Act Requirements

Several standards established in the Magnuson-Stevens Act are pertinent to this action.

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

National Standards 2 states: "Conservation and management measures shall be based upon the best scientific information available."

National Standard 9 states: "Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch."

Alternatives 2-4, examined in this EA, are intended to improve the collection of information on DSR mortality. Alternatives 2 and 3 reduce waste by requiring full retention and appropriate use of retained fish instead of those fish being discarded, dead, at sea. To some extent, therefore, the alternatives address all three of the above standards.

Certain sections of the Magnuson-Stevens Act which were contained in the Sustainable Fisheries Act of 1996 (SFA) are also relevant. Section 303(a)(11) requires an assessment of the amount and type of bycatch occurring in each fishery and adoption of conservation and management measures that minimize bycatch to the extent practicable. Section 313(h) requires total catch measurement in each fishery under Council jurisdiction using measures to "ensure the accurate enumeration, at a minimum, of target species, economic discards, and regulatory discards." Section 313(i) requires full retention by fishing vessels and full utilization by fish processors of economic discards in fisheries, if such discards cannot be avoided. Section 313(f) requires the reduction of economic discards.

2.0 DESCRIPTION OF THE ALTERNATIVES

2.1 Alternatives Considered

Alternative 1: No Action

Under this alternative the maximum retainable percentage limit (MRA) as set out in 50 CFR 679(e) and 50 CFR 679.20, Table 10, would continue to apply. There would be no change in the 10 percent MRA for DSR for fishermen using hook-and-line or jig gear in the SEO. Fishermen could retain any DSR caught, so long as the weight of the retained DSR was less than 10 percent of the weight of their target species; they would be required to discard any DSR harvested that was over that limit.

Discussion of Alternative 1: If no action were taken, managers would be unable to collect the data necessary to better estimate the TAC, ABC, OFL, and reasonable MRAs for this assemblage. Furthermore, rockfish over the MRA would continue to be discarded dead at sea; some of which might otherwise be retained in edible condition and used for human consumption.

*Alternative 2: **Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO.***

This alternative requires full retention of DSR, allows for sale of up to 10% of landed catch, and provides two ways to dispose of other rockfish. Alternative 2 has four provisions:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained, weighed, and reported on State of Alaska fish tickets.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Provide two methods for disposal of any DSR in excess of the amount that may be sold and the proceeds retained by the fisherman:
   a. sell the excess DSR and relinquish the proceeds to the State of Alaska;
   b. retain the excess DSR for any other use except sale, barter, or trade.

Discussion of Alternative 2: This was previously the preferred alternative, based on the action taken by the Council in June 1998. NOAA General Counsel (GC) determined in the spring of 2002 that this alternative has legal problems that prevent it from being approved by NMFS. The legal memorandum describing these problems is Appendix A to this document at the end of the following discussion.

The action as passed by the Council in 1999 actually differed from the language above, in that it laid out three options for disposal of excess DSR - relinquishing proceeds to the State, keeping the DSR for private consumption, or donating it to a non-profit charity. These last two were subsequently combined however, because the structure of State recordkeeping precludes keeping track of the fish once the processor has weighed it and returned some or all of it to the fisherman for personal use. Because it would be difficult to track how the fish was being used, the two options of keeping it for personal use or donating it were combined.

Alternative 2 would implement a full retention program for DSR caught in the hook-and-line and jig gear fisheries in the SEO. The documented catches of DSR taken under this program would allow fisheries managers to more accurately manage the TAC. Although no additional observer coverage would be required to verify full retention, State managers believe that compliance would be sufficiently assured to greatly enhance bycatch mortality reporting relative to Alternative 1.

Some concerns have been expressed about the practice of topping off in relationship to the full retention program for DSR. In October 1998, the Council's Scientific and Statistical Committee responded to these concerns. They noted that under a full retention program for DSR, landings and incidental catch might increase since it would be legal to retain DSR in excess of 10 percent of weight of the halibut or sablefish catch in the Individual Fishing Quota (IFQ) fisheries. DSR incidental catch landings could increase to the point where they would preclude a directed fishery for DSR. However, although increases in DSR catch could occur where natural bycatch rates exceed the MRA, any incentive to surpass that limit would come more from the profits associated with the directed fishery than from a topping off strategy. Since the proceeds of DSR overages would have to be forfeited, their retention presents an opportunity cost to fishermen that would affect the decision to further prosecute the target fishery. Therefore, the SSC concluded that there is no *additional* incentive to "top off" under a full retention program for DSR.

In other words, although it is likely that a full retention program would result in increased landings of DSR, this alternative (or alternative 3) would be unlikely to promote topping off, and might result instead in reduction of bycatch, if fishermen avoid areas of high bycatch to minimize the inconvenience of bringing unprofitable product to shore.

This alternative would also reduce waste, at least in terms of utilizing fish that would otherwise be dead in any event. Rockfish rarely survive being captured and discarded, so that no additional fish are saved in the course of adhering to current regulations, under which fish over 10 percent of the retained catch must be discarded. Under Alternative 2, the excess incidental catch would instead be landed, and most of the fish would be made available for human consumption, through one of the allowed options.

This alternative is less costly than an observer program would be, both to the fishermen and to the government. Because of the requirement of full retention, it is also likely to provide more data than an observer program would regarding the total mortality of DSR. However, the data might be less accurate than could be obtained through an observer program, as unobserved fishermen would have an incentive to throw back some of their bycatch, in spite of the rules, again because of the inconvenience (i.e., economics costs) of bringing unprofitable catch to shore.

Although this alternative does not use additional observer coverage to verify full retention, State managers have stated that they expect enough compliance to enhance bycatch mortality accounting over the status quo alternative.

As compared to the status quo, Alternative 2 has the added advantage of consistency with State regulations requiring a CFEC license holder to retain all DSR taken, and have it weighed and reported on an ADF&G fish ticket. Under current Federal regulations, NMFS Enforcement may take action on any amount retained over the 10 percent MRA. Such action may include a $1,000 fine on the third infraction in the same calendar year.

Disposition of DSR under State regulations, which are caught in excess of the legal limit and not sold, is the responsibility of the fishermen, who may sell it and forfeit the proceeds to the State, donate it to a food bank or other charity, or take it home. State regulations do not allow fishermen to surrender the fish directly, but rather require that all proceeds from the sale of DSR over the 10 percent allowable amount be forfeited to the State. Such forfeitures are marked on the fish ticket, and the State deposits the proceeds in a fishery fund which is designed to transcend fiscal years. When the DSR fishery fund has collected a large enough sum, it will be used toward management or research for DSR.

The State of Alaska would be expected to reassess the full retention program within three years and to recommend retaining a full retention program or reverting to setting maximum retainable percentage limits, possibly with adjustments to the MRA based on the improved data collected through this program.

Legal Obstacles to adopting Alternative 2: NOAA GC's reasoning for determining that Alternative 2 is not legal is summarized in this section. NOAA GC's full memo to the Council on this subject (Sept. 27, 2002) is attached as an appendix to this EA.

Basically, NOAA GC determined that the provision requiring proceeds from the sale of DSR over the 10 percent MRA probably exceeds the rulemaking authority provided by the Magnuson-Stevens Act. The Magnuson-Stevens Act is focused on harvesting. The Act authorizes NMFS to take conservation and management measures "applicable to foreign fishing and fishing by vessels of the United States." 16 U.S.C. 1853(a). "Fishing" is defined in the Act to include the actual or attempted catching, taking or harvesting of fish, "any other activity which can reasonably be expected to result in the catching, taking or harvesting of fish, or any operations at sea in support of, or in preparation for" the harvesting of fish. 16 U.S.C. 1802(15).

NMFS and the Councils have interpreted the law as providing authority to regulate what a fisherman can do with legally harvested fish, as long as conservation and management reasons exist for such regulation. Regulations have been implemented by NMFS that regulate processing activities by harvesters and at-sea processors, such as the roe-stripping and forage fish regulations in the North Pacific, and regulations that prohibit the sale of illegally harvested fish. These activities have been determined to fall within the Magnuson-Stevens Act authority to regulate "fishing." However, the regulation of proceeds from the sale of legally harvested fish proposed in Alternative 2 is one step further removed from the Magnuson-Stevens Act's focus on "fishing," and from the authority it grants NMFS to regulate fishing.

Furthermore, if the excess DSR is allowed to be sold to the processor via an ability to relinquish the harvester's proceeds to the State of Alaska, more DSR than contemplated by the 10 percent sale limit could enter the stream of commerce, and could create incentives for arrangements between harvesters and processors that would undermine the rule's objective of discouraging fishermen from targeting on DSR or fishing in areas where high DSR incidental catch is anticipated.

NOAA GC also looked at the possibility of modifying the draft proposed rule so that Federal regulations would require full retention of DSR caught in the SEO but remain silent as to the disposition of the DSR and sale proceeds. If State regulations required that proceeds from the sale of DSR caught in the EEZ in excess of a 10 percent sale limit be relinquished to the state, that would create a situation wherein fish that would be required to be retained in the EEZ without any other limitation under Federal law would be subject to limitations as to its disposition under State law. NOAA GC concluded that there could be pre-emption problems with such a regulatory scheme. A reviewing court might find that the Federal law supersedes the State law because the State law limiting receipt of sale proceeds could be found to interfere with and be contrary to the Federal law which sets no limit on receipt of sale proceeds, especially given the extensive administrative record showing that such a limitation was considered but rejected. NOAA GC noted that the situation is similar to the facts in State v. Sterling, 448 A. 2d 785, 787 (R.I. 1982). In State v. Sterling, a Rhode Island law purported to impose a landing-possession limit on yellowtail flounder of 3,000 pounds per boat per trip, without regard to the area of capture. An FMP regulation governing the fishing of yellowtail flounder in the same region established no per-trip possession or landing limits. Finding the Rhode Island statute in conflict with the FMP regulation, the court held that the State law was pre-empted.

Alternative 3: (Preferred Alternative) Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO; don't allow DSR over 10 % sales limit to enter the stream of commerce

This alternative is similar to Alternative 2, except that any DSR caught in excess of the10% sale limit would not be allowed to enter the stream of commerce, but could be retained for any other use, including personal use or donation to a charity. Alternative 3 would:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained and landed. Catcher/processors would continue to observe current MRAs for DSR.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Dispose of any DSR in excess of the amount that may be sold by any method other than sale, barter, or trade.

Discussion of Alternative 3: This alternative is similar to Alternative 2 but is more clearly within the purview of NMFS' authority, as the action would not entail regulating the sale of fish.

The proposed regulations do not explicitly require weighing and reporting the DSR on fish tickets because of existing State and federal regulatory requirements. State regulations at 5 AAC 39.110(c) require that all fish caught in Alaska State waters or in the EEZ and landed at Alaska ports must be weighed and reported on ADF&G fish tickets. This is the responsibility either of the buyer of raw fish, or of the fisherman who sells to a buyer not licensed to process fish or who processes his or her own catch.

DSR landed in out-of-state ports must also be reported under existing regulations. Fishermen who catch fish in State waters and land it in ports outside Alaska must under State regulations complete an ADF&G fish ticket or equivalent document estimating weights by species, with gear and location information; more precise information is generally obtained from fish tickets filled out by the out-of-state processors. Fishermen who catch fish in the EEZ and land it outside Alaska are not covered by these State requirements, but under federal regulations at § 679.5 (k) must submit a vessel activity report estimating the weight of the fish or fish products, by species.

Most incidental catch of DSR is brought to Alaska ports and would be entered on ADF&G fish tickets if it were retained under the proposed rule. To the extent that fishermen comply with the proposed full retention requirements, DSR catch data would improve under the proposed rule. Three potential problems can be foreseen with this variation however:

1. It does not track the State's program as closely as Alternative 2, because it does not allow forfeiture of excess DSR to the State. This could lead to problems and costs in keeping fish caught in State waters separate from fish caught in Federal waters.

2. Because fishermen might have to deal with excess fish by either retaining it or donating it, some might be less inclined to comply than they would if they had the option of allowing the processors to sell the fish, but forgoing the proceeds themselves.

3. Increased waste could ensue. Because processors could not sell excess DSR, the fish would have to be disposed of in another manner. Probably most of the excess would enter the waste stream for processors. Processing waste at shore plants is generally converted into fish meal, fish oil, and other by-products. Nonetheless, recovery is not 100%, thus some waste is discharged into the local marine environment. Smaller plants (e.g., with limited or no meal production capability) likely discharge proportionately more waste, per unit of landed catch, than larger plants (e.g., operations with meal production capability).

The level of excess fish caught over the 10% allowed to be sold would also affect whether these problems materialized. If a convenient donation program were established by the State or another party, donation might become a more viable option. The reduced options for dealing with excess fish might also lead fishermen to be more careful about avoiding excess DSR, which would improve the wastage situation.

Catcher/processors were excluded from the requirement for full retention of DSR because only trace amounts of DSR are caught by catcher/processors using nontrawl gear in the SEO of the GOA. These

vessels typically fish for sablefish in deeper waters than are preferred by DSR species. The use of observer data to estimate mortality of DSR for this sector is considered adequate; catcher/processors would be required to comply with the existing MRAs.

Alternative 4: Observer program on halibut longline and other hook-and-line vessels in the SEO to estimate mortality of DSR in non-target fisheries

The 10 percent MRA would be retained. Fishermen would still be required to discard DSR over that MRA. This alternative would extend existing regulations requiring observer coverage for 30 percent of fishing days on catcher vessels from 60 to 125 feet LOA to apply to catcher vessels fishing for groundfish and halibut in the SEO.

Discussion of Alternative 4: This alternative would solve the problem of inadequate data collection, in that it would create a scientific sampling program to obtain information. It has the advantage of precedent, as observers are used to obtaining such information in other fisheries. A number of obstacles exist, however, to such a program. Many of the vessels participating in the halibut fishery would find it difficult to accommodate an observer because of space limitations and safety factors.

The sampling results could be skewed somewhat by the need to limit observers to vessels that could accommodate them. Most of these vessels also do not have the capacity to weigh incidental catch, so observer estimates of total mortality would have to be based on numbers of fish.

A related problem is that bycatch of rockfish is highly variable and an effective program may need a high percentage of vessel coverage. ADF&G reviewed bycatch statistics for IPHC station locations in Southeast Alaska, from the IPHC 1998 longline survey. Bycatch of yelloweye[15], expressed as the proportion of yelloweye weight to halibut weight (for legal-sized halibut) ranged from 0 to 189 percent, with area specific means ranging from 5 percent in the EYKT to 30 percent in the Central SEO. The overall average for the SEO was 10.9 percent, based on 109 longline sets. The combined average for the North, Central, and South SEO subdistricts was 15 percent (±7 percent).

It is clear from reviewing these data that variables including area, depth, and season fished greatly affect bycatch rates of yelloweye rockfish. In order to account for these variables statistically, an observer program would need to include a higher proportion of vessels and of total fishing trips than would be necessary if DSR bycatch were more evenly distributed. An extensive observer program would be expensive and logistically burdensome for the vessel operators and the observer program, as compared to the likely improvements in catch and mortality data obtained. However, such a program might be more feasible if adopted as part of a broader restructuring of the observer program, allowing for different funding mechanisms and more flexibility, which is currently under study by the Council and NMFS

2.2 Exempted Fishing Permit: An Additional Option

An exempted fishing permit (EFP) would consist of an experiment conducted in order to obtain bycatch data. The experiment could require full retention of fish, but would outline clear procedures, would set a

[15]Yelloweye rockfish accounts for 90 percent of all DSR landings.

time limit for obtaining the information, and would involve enrolling vessels that wished to participate. Presumably, vessels which voluntarily participate would be likely to comply with the full retention requirement. This is a possible solution to the problem of collecting data in order to establish bycatch rates.

Under Federal regulations,[16] an EFP allows fishing to occur in a way that would otherwise be prohibited. Thus, conducting an EFP might allow the State and Federal government more flexibility than would otherwise be the case. Normally adopting an EFP is not considered a separate alternative to be analyzed in an EA/RIR/IRFA, because it would require an application by a third party, in this case most likely the State, which would design the experiment and ask for approval. At that point, NMFS would develop a separate EA for the EFP, and that analysis would depend on how the program was designed in terms of time, level of expected participation, etc.

An exempted fishing permit program to quantify the level of DSR discards might grant fishermen special benefits in exchange for a voluntary commitment to retain all DSR, and to bring that DSR to shore for counting and weighing. The number of fishermen included would have to be large enough to provide a scientifically valid sample, permitting inferences about overall discards in the population. The sample would have to be appropriately stratified, so that operations of different sizes, or with different times and locations of fishing, would be represented.

An exempted fishing permit program would depend on voluntary participation, and the level of this participation would, in turn, depend on the incentives that could be built into the program. The incentive would have to be high enough to allow fishermen to cover participation costs and to prompt voluntary participation. However, if the incentive were too high, fishermen might deliberately target on DSR, which would make it hard to extrapolate from the experience of the EFP participants to the whole fleet. Further complicating matters, the costs of retaining DSR differ depending on factors which include the vessel's storage capacity and its distance from its home port – the need to fully retain DSR onboard could mean an additional trip for a vessel that must travel from a distance to fish. Therefore, the appropriate incentive might differ among different classes of operations.

2.3 Alternatives Considered but Rejected

Following is a summary of alternatives that were discussed and partially analyzed while developing this proposal, but rejected without a full analysis as the Council did not consider them suitable for the DSR fisheries, for the reasons outlined.

1. Open directed DSR fishery concurrent with the halibut IFQ season and require full retention.

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[16] § 679.6 Exempted fisheries. . .For limited experimental purposes, the Regional Administrator may authorize, after consulting with the Council, fishing for groundfish in a manner that would otherwise be prohibited. No exempted fishing may be conducted unless authorized by an exempted fishing permit issued by the Regional Administrator to the participating vessel owner in accordance with the criteria and procedures specified in this section. . .

This alternative, allowing concurrent directed and incidental catch fisheries for DSR, would mean that incidental catch of DSR taken in the course of fishing for halibut could be legally landed on a directed fishery fish ticket. This entails some problems. The directed fishery was closed during the halibut IFQ season precisely in order to prevent overharvesting. Currently, the directed fishery quota in the SEO is taken in a matter of a few weeks.[17] Opening the directed fishery concurrently with the halibut IFQ fishery would remove the halibut fishermen's incentive to avoid bycatch, replacing it instead with the incentive to top off for directed fishery deliveries. As a result, the amount of DSR taken by the halibut IFQ fleet would be likely to increase considerably. Furthermore, the current scheme, under which the directed harvest receives part of the TAC, and the rest is allocated to incidental catch of rockfish in other fisheries, would no longer be feasible. The likely result would be a derby-style rush for fish.

2. Defer All Management of DSR Rockfish to the State.

The State currently manages most aspects of the DSR fishery, consistent with the FMP for the GOA. NMFS is responsible for setting the TAC and maximum retainable percentage levels. This alternative would defer management authority for DSR to the State of Alaska, either by removing DSR from the GOA FMP, or by deferring additional management authority to the State, including the ability to set MRAs. Under this scenario, the State would be able to complement its regulations by requiring surrender of DSR in excess of 10 percent of retained groundfish catch. The drawback to this alternative is that it would seem to be an extreme solution to the stated problem, when alternatives are available under the existing FMP management structure.

3. Implement an IFQ fishery for DSR.

Under recent Magnuson-Stevens Act guidelines, no new IFQ fisheries were allowed until October 2002. This provision has expired, so that managing the DSR fishery through IFQs would now be a legal option. This alternative has some of the advantages of any IFQ fishery, including increased efficiency and elimination of the incentive to race for fish. However, given the relatively low TAC, the inherent problem of discard mortality, the variation in DSR catch rate by area, depth and season, and the rapid turnover of this fishery, this might be a complicated system to implement effectively. The program would likely require concurrent quota share fishing for halibut and DSR, similar to that which occurs for halibut and sablefish. However, an IFQ fishery for DSR might be worth reconsidering, perhaps after a full retention program has been in place long enough to understand the bycatch situation more fully.

[17]See O'Connell and Brylinsky (2001) for historical season openings in SEO management areas.

3.0 ENVIRONMENTAL CONSEQUENCES 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 was discussed in Section 1, and background information presented on the DSR fishery. Alternatives were presented in Section 2. The economic impacts of the alternatives will be discussed in Sections 4 (RIR) and 5 (IRFA). This section contains the discussion of the environmental impacts of the alternatives, including impacts on essential fish habitat, on threatened and endangered species, and marine mammals.

The environmental impacts generally associated with fishery management actions result from (1) the 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, including impacts on marine mammals, seabirds, and other threatened or endangered species, is included in the final environmental assessment for the annual groundfish TAC specifications (NMFS 2001a).

3.1 Biology of DSR Rockfish and Environmental Impacts on them from the Alternatives

Rockfishes of the genus *Sebastes* are found in temperate waters of the continental shelf off North America. At least 32 species of *Sebastes* occur in the GOA. In 1987, the Council divided the rockfish complex into three components for management purposes in the eastern Gulf: DSR, Pelagic Shelf Rockfish, and Slope Rockfish. The DSR assemblage is comprised of seven species of nearshore, bottom-dwelling rockfishes listed below. These fishes all occur on the continental shelf and are generally associated with rugged, rocky habitat.

The dominant species in the DSR fishery is yelloweye rockfish, which accounts for 90 percent of all DSR landings, and which therefore is the focus of this discussion. Quillback rockfish account for 8 percent of the catch. DSR exhibit slow growth and extreme longevity; the maximum published age for yelloweye is 118 years. Estimates of natural mortality are very low. They are viviparous. These types of fishes are very susceptible to overexploitation and are slow to

Common name	Scientific Name
canary rockfish	*Sebastes pinniger*
China rockfish	*S. nebulosus*
copper rockfish	*S. caurinus*
quillback rockfish	*S. maliger*
rosethorn rockfish	*S. helvomaculatus*
tiger rockfish	*S. nigrocinctus*
yelloweye rockfish	*S. ruberrimus*

recover once driven below the level of sustainable yield (Leaman and Beamish 1984; Francis 1985); an acceptable exploitation level is assumed to be low.

Rockfishes have internal fertilization. Several months separate copulation, fertilization, and parturition (release of larvae). Most of these species extrude larvae in late winter and spring. Yelloweye rockfish extrude larvae over an extended period, peaking in April and May (O'Connell 1987). They typically attain sexual maturity at about 15 years and individual growth levels off at about 30. They may live to be over 100. The natural mortality rate (M) = 0.02.

Rockfish have a physoclistic, or closed, swim bladder, which is used to regulate buoyancy. They are not capable of quickly adjusting to depth changes and therefore suffer embolism mortality when brought to the surface from depth. Most DSR do not survive encounters with fishing gear. Rockfishes have a closed swimbladder, which is used to regulate buoyancy.

Yelloweye are a large fish which may attain a maximum length of 91 cm. They are predatory, generally feeding close to the bottom. Important prey in their diet include herring, sandlance, Puget Sound rockfish and shrimp (Rosenthal et. al 1988).

The purpose of the proposed regulations is to obtain a better accounting of DSR mortality so as to improve stock assessments and, ultimately, to safeguard the DSR from overfishing. Under status quo Federal management, it is believed that much DSR bycatch goes unreported. Under alternative 2, full retention would be required and this should lead to better accounting of mortality and therefore a better ability to make stock assessments and set quotas. Alternative 3, which would establish an observer program, would also lead to a better accounting of mortality.

No changes to the total TAC of DSR are proposed by any of the alternatives. Alternatives 2 and 3, requiring full retention of DSR, could have the effect of encouraging fishermen to move to areas of lower bycatch of DSR, in order to avoid the costs of bringing the excess DSR to shore to be weighed and disposed of. That might reduce waste in the fishery. Alternative 4 would implement an observer program in the fishery. It therefore might enable biologists to better set the ABC, OFL and TAC amounts, that is to say, it would lead to better-informed management. Presumably, more information is better than less and better-informed management would be beneficial to the fish stocks.

3.2 Essential Fish Habitat

Inclusively, all the marine waters and benthic substrates in the management areas comprise the habitat of all marine species. Additionally the adjacent marine waters outside the EEZ, adjacent State waters inside the EEZ, shoreline, freshwater inflows, and atmosphere above the waters, constitutes habitat for prey species, other life stages, and species that move in and out of, or interact with, the fisheries' target species, marine mammals, seabirds, and the ESA listed species. The PSEIS assesses the impacts of the groundfish fisheries in the GOA on the habitat, including a detailed discussion of gear impacts in Section 3.6.4 (NMFS 2004). A description of maps of essential fish habitat for the DSR fishery in the Eastern GOA are found in the EA/RIR for GOA Plan Amendment 55 (NPFMC 1998).

The effects of longline fishing on habitat have received little attention, as most scientific studies have focused on the impacts of bottom trawling. However, longline fishing has some effect on habitat, as hooks bring up coral, sponges, and other living substrate that is used as habitat for fish. Maintaining the status quo would involve a continuation of any such impacts. None of the alternatives analyzed would change the amount of fishing nor the types of fishing gear used. Alternatives 2 or 3 might have some influence on the fishing locations, as fishermen might want to avoid excess bycatch of DSR. This could be beneficial to habitat that is very productive for DSR.

3.3 Trophic Interactions and Scavenger Population Response

The marine food-web of North Pacific marine fishes is complex (Livingston and Goiney 1983). Numerous species of plankton, phytoplankton, invertebrates, mollusks, crustaceans, forage fish, demersal, mid-water, and pelagic fish, marine mammals, seabirds, and humans combine to comprise the food-web present in the GOA. Environmental changes as well as human exploitation patterns can effect change trophic interactions. Fishing causes direct changes in the structure of fish communities by reducing the abundance of target or bycatch species. These reductions may then lead to responses in non-target species through changes in competitive interactions and predator-prey relationships. Indirect effects of fishing on trophic interactions in marine ecosystems may also occur.

Several years of groundfish food habits data collected by the Trophic Interactions Program at the Alaska Fisheries Science Center confirm the consumption of fish processing offal by fish in the eastern Bering Sea, Aleutian Islands, and Gulf of Alaska (Queirolo et al. 1995). Estimates of the average percent by weight of offal in the diet of groundfish species in the Gulf of Alaska in 1990 and 1993, indicate a decline in the amount of offal in the diet between those years for Pacific cod, arrowtooth flounder, and Pacific halibut. Estimates are not available for consumption of whole animal discards by groundfish, marine mammals, or birds in the BSAI and GOA areas. When analyzing stomach contents of groundfish and birds, and scats of marine mammals, it is impossible to discern whether a whole animal in the stomach contents was consumed when alive or dead. Discarded fish are categorized as trophic level 1, or detritus. No information has been collected for rockfish. The total amount of dead organic material (detritus) that would reach the bottom is probably small relative to other natural sources of detritus.

Fishery management measures under alternatives 2 or 3 – as compared to either maintaining status quo management or instituting an observer program – might affect the marine food-web in the long-term by reducing the amount of the seven species of DSR that are discarded dead at sea. A full retention program for DSR in the SEO would reduce this available prey to scavengers (i.e., fish, marine mammals, and seabirds) by an unknown amount. By the same reasoning, the status quo management, under which DSR over the maximum retainable percentage amounts are discarded, might result in artificially promoting the population of scavenging species. The scavengers that might be affected are not known; while the literature describes what species yelloweye rockfish eat, there is little information on what species eat yelloweye rockfish. Adult yelloweye have been found in halibut stomachs. American bald eagles have been seen scavenging on floating discarded yelloweye rockfish.[18] Bottom invertebrates are believed to scavenge on those rockfish sinking to the seafloor.

[18]Tory O'Connell, pers. com, winter, 2001.

Possible ecological impacts of reducing DSR discards through a full retention program could be categorized as beneficial since these discards are an artificial contribution to trophic interactions. Stock assessments already assume 100 percent mortality of the discards of these species, so no change in the population status of these species is anticipated due to any of the proposed alternatives. However, the decrease in discards returned to the sea could result in a decrease in the amount of food available to scavengers and, if this decrease was large enough, could produce a decline in growth or reproductive output of species that rely on discards for a major portion of their food intake. Also, changes in energy flow to the detritus and local enrichment through an increase in processing waste (offal) could occur. The effect of full retention programs, as described in more detail in the EA/RIRs for BSAI Plan Amendment 49 (NPFMC 1997a) and GOA Plan Amendment 49 (NPFMC 1997b) to implement the Improved Retention/Improved Utilization Program, would theoretically be to return trophic interactions to a natural state.

However, it is unlikely that the decrease in discards would be large enough to measurably affect scavenger populations or the marine food web. As described in the EA for GOA Plan Amendment 49 (1997b), under "status quo rates of offal and discard production," most of the scavenger populations were not showing obvious signs of increase related to offal production in groundfish fisheries by pollock, Pacific cod, arrowtooth flounder, flathead sole, yellowfin sole, Pacific halibut, and skates. The authors reported evidence suggesting no linkage between offal and discards with any scavenger population trends under the existing system. Since the DSR TAC is limited to 340 mt and landings totaled 287 mt in 2000, it is unlikely that bycatch overages discarded dead at sea would have a significant impact on scavenger populations.

Local enrichment and change in species composition in some areas might occur if discards or offal returns were concentrated in those areas. Such effects have previously been seen in Orca Inlet in Prince William Sound and in Dutch Harbor, Alaska for other groundfish species (NMFS 1997a and b).

The aim of a full retention program is to quantify the unknown amount of discards being returned to sea, which might lead to modifying the MRA for DSR to better reflect natural bycatch levels and eliminate, to the extent possible, these discards. In either case, whether in the long run the full retention requirement is maintained or the maximum retainable percentage limit is set using better information, Alternatives 2 or 3 remove discarded rockfish from the marine food-web, and therefore can be seen as complying with Congressional mandates to reduce waste.

3.4 Endangered Species Act considerations

The Endangered Species Act of 1973 as amended (16 U.S.C. 1531 *et seq*; ESA), provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered jointly by NMFS for most marine mammal species, marine and anadromous fish species, and marine plant species and by the U.S. Fish & Wildlife Service (USFWS) for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA-listed species is based on the biological health of that species. The status determination is either threatened or endangered. 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)]. Species

can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through the USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

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. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Federal agencies have an affirmative mandate to conserve listed species (Rohlf 1989). One assurance of this is that Federal actions, activities or authorizations (hereafter referred to as Federal actions) must be in compliance with the provisions of the ESA. Section 7 of the Act provides a mechanism for consultation by the Federal action agency with the appropriate expert agency (NMFS or USFWS). Informal consultations, resulting in letters of concurrence, are conducted for Federal actions that have no adverse effects on the listed species. Formal consultations, resulting in biological opinions, are conducted for Federal actions that may have an adverse effect on the listed species. Through the biological opinion, a determination is made as to whether the proposed action poses "jeopardy" or "no jeopardy" of extinction to the listed species. If the determination is that the action proposed (or ongoing) will cause jeopardy, reasonable and prudent alternatives may be suggested which, if implemented, would modify the action to no longer pose the jeopardy of extinction to the listed species. These reasonable and prudent alternatives must be incorporated into the Federal action if it is to proceed. A biological opinion with the conclusion of no jeopardy may contain a series of management measures intended to further reduce the negative impacts to the listed species. These management alternatives are advisory to the action agency [50 CFR. 402.24(j)]. If a likelihood exists of any taking[19] occurring during promulgation of the action, an incidental take statement may be appended to a biological opinion to provide for the amount of take that is expected to occur from normal promulgation of the action. An incidental take statement is not the equivalent of a permit to take.

Twenty-three species occurring in the GOA and/or BSAI groundfish management areas are currently listed as endangered or threatened under the ESA (Table 4). The group includes great whales, pinnipeds, Pacific salmon and steelhead, two types of eiders, and an albatross.

Section 7 consultations

Because groundfish and crab fisheries are Federally regulated activities, any negative effects of the fisheries on listed species or critical habitat and any takings that may occur are subject to ESA Section 7 consultations. 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

[19]The 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)].

Table 4. Species currently listed as endangered or threatened under the ESA and occurring in the GOA and/or BSAI groundfish management areas.

Common Name	Scientific Name	ESA Status
Northern Right Whale	*Balaena glacialis*	Endangered
Sei Whale	*Balaenoptera borealis*	Endangered
Blue Whale	*Balaenoptera musculus*	Endangered
Fin Whale	*Balaenoptera physalus*	Endangered
Humpback Whale	*Megaptera novaeangliae*	Endangered
Sperm Whale	*Physeter macrocephalus*	Endangered
Snake River Sockeye Salmon	*Onchorynchus nerka*	Endangered
Short-tailed Albatross	*Phoebaotria albatrus*	Endangered
Steller Sea Lion	*Eumetopias jubatus*	Endangered and Threatened [3]
Snake River Fall Chinook Salmon	*Onchorynchus tshawytscha*	Threatened
Snake River Spring/Summer Chinook Salmon	*Onchorynchus tshawytscha*	Threatened
Puget Sound Chinook Salmon	*Onchorynchus tshawytscha*	Threatened
Lower Columbia River Chinook Salmon	*Onchorynchus tshawytscha*	Threatened
Upper Willamette River Chinook Salmon	*Onchorynchus tshawytscha*	Threatened
Upper Columbia River Spring Chinook Salmon	*Onchorynchus tshawytscha*	Endangered
Upper Columbia River Steelhead	*Onchorynchus mykiss*	Endangered
Snake River Basin Steelhead	*Onchorynchus mykiss*	Threatened
Lower Columbia River Steelhead	*Onchorynchus mykiss*	Threatened
Upper Willamette River Steelhead	*Onchorynchus mykiss*	Threatened
Middle Columbia River Steelhead	*Onchorynchus mykiss*	Threatened
Spectacled Eider[2]	*Somateria fishcheri*	Threatened
Steller Eider[2]	*Polysticta stelleri*	Threatened
Kittlitz Murrelet[1]	*Brachyramphus brevirostris*	Candidate
Northern Sea Otter	*Enhydra lutris*	Candidate

[1]The Steller's eider, short-tailed albatross, spectacled eider, and Northern sea otter are species under the management jurisdiction of the USFWS. For the bird species, critical habitat has been established for the Steller's eider (66 FR 8850, February 2, 2001) and for the spectacled eider (66 FR 9146, February 6, 2001). The northern sea otter has been proposed by USFWS as a candidate species (November 9, 2000; 65 FR 67343) and is proposed to be listed as threatened for the southwestern stock (69 FR 6600, February 11, 2004). The Kittlitz murrelet has been proposed as a candidate species by USFWS (69 FR 24875, May 4, 2004).

[2] These species do not occur in the eastern GOA.

[3] Steller sea lions are listed as endangered west of Cape Suckling and threatened east of Cape Suckling, which includes the area under consideration for this action.

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 USFWS). 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.

Section 7 consultations have been done for all the species listed in Table 4, some individually and some as groups.

Endangered cetaceans

NMFS concluded a formal Section 7 consultation on the effects of the GOA groundfish fisheries on endangered cetaceans April 19, 1991. This opinion concluded that the fisheries are unlikely to

jeopardize the continued existence or recovery of endangered whales. No new information exists that would cause NMFS to alter the conclusion of the 1991 opinion.

Steller sea lions

In 1990, NMFS designated the Steller sea lion as a threatened species under the ESA. 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 haulouts, and specific aquatic foraging habitats. 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° 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. The Final Supplemental Environmental Impact Statement for Steller Sea Lion Protection Measures (NMFS 2001b, Section II, Appendix A), contains the most recent Biological Opinion on Steller Sea Lions, completed in October, 2001.

The SEO, which is the subject of this rule, is not part of the area which was the subject of the reasonable and prudent alternatives developed to protect the endangered western population of Steller sea lions. Rockfish have not been identified as an important part of the sea lions' diet. The alternatives considered here are not expected to affect Stellers' sea lions or their critical habitat.

Seabirds

Short-tailed albatross are the only listed seabirds which could potentially occur in the SEO (Stellers eiders and spectacled eiders are not found in the eastern GOA). The entire world population of short-tailed albatrosses was estimated in 1998 as approximately 1000 birds; 400 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, although juveniles may be present at other times of the year. Formal consultations on the effects of the groundfish fisheries on the short-tailed albatross under the jurisdiction of the USFWS were conducted in 1989, 1995, and 1997 (USFWS 1989, USFWS 1995, USFWS 1997). The 1989 consultation concluded that the BSAI and GOA groundfish fisheries would adversely affect the short-tailed albatross but would not jeopardize the continued existence of the species. An incidental take of up to two birds per year was allowed. Subsequent consultations for changes to the fishery that might affect the short-tailed albatross also concluded no jeopardy and established non-discretionary reasonable and prudent measures to minimize the impact of the possible incidental take. The 1997 consultation resulted in an incidental take limit of up to 4 birds during the 2-year period 1997-1998 and limited the scope of the consultation to the groundfish hook-and-line fisheries. A consultation issued on March 19, 1999 (USFWS 1999) continued the no jeopardy conclusion and established the requirement to immediately reinitiate consultation if incidental takes exceeded four short-tailed albatrosses over two years' time.

NMFS requested and was granted an extension of the 1999 Biological Opinion and its accompanying Incidental Take Statement, which otherwise would have expired on December 31, 2000. (USFWS 2001). Two section 7 consultations with USFWS were initiated in 2000, and have not been concluded as yet.

None of the alternatives considered for this rule are expected to have an impact on the short-tailed albatross in any manner not previously considered. This rule is intended to improve accounting for DSR bycatch, reduce the risk of overfishing DSR, and reduce waste. The TAC would not change under any of the alternatives, and no changes are anticipated in the types of gear used. No additional impacts on short-tailed albatross or their critical habitat are expected from the options under consideration.

Impacts of the alternatives on endangered or threatened species

None of the alternatives under consideration would affect the fisheries in a way not previously considered in the above consultations. The proposed alternatives are designed to improve accounting for DSR bycatch and reduce waste. None of the alternatives should affect takes of listed species. Therefore, none of the alternatives are expected to have a significant impact on endangered or threatened species.

3.5 Marine Mammal Protection Act considerations

Under the Marine Mammal Protection Act (MMPA), NMFS categorizes all U.S. commercial fisheries (State and Federal) into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. The categorization of a fishery determines whether participants in that fishery are subject to certain requirements of the MMPA, such as registration, and observer coverage.

Species listed under the Endangered Species Act that are present in the GOA were listed in the previous section. Marine mammals not listed under the ESA that may be present in the eastern GOA 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 [Pacific harbor seal (*Phoca vitulina*), northern fur seal (*Callorhinus ursinus*), spotted seal (*Phoca largha*), and ribbon seal (*Phoca fasciata*)], and the sea otter (*Enhydra lutris*).

Take of the above listed marine mammals has been monitored through observer programs. No incidental kills or injuries have been recorded in the groundfish longline/setline fisheries in Alaska's state-managed waters. There have been documented injuries or deaths for harbor seals and Northern elephant seals in the GOA groundfish longline/setline fisheries in Federally regulated waters.

Because of the low incidence of problems and the fact that none of these alternatives would affect the size of the fishery or the gear type used, no effects are anticipated that would affect marine mammals under any of the alternatives considered for this action.

3.6 Coastal Zone Management Act Considerations

Implementation of the proposed rule would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of section 307(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

3.7 Socioeconomic Impacts

A description of the DSR fishery and detailed discussions of the socioeconomic impacts of these alternatives may be found in Sections 4 and 5. Section 4 contains a Regulatory Impact Review (RIR), conducted to review the costs and benefits of the alternatives in accordance with the requirements of E.O. 12866. A summary of the cost and benefit analysis may be found in Table 10. Section 5 contains an Initial Regulatory Flexibility Analysis, conducted to evaluate the impacts of the suite of potential alternatives being considered, including the preferred alternative, on small entities, in accordance with the provisions of the Regulatory Flexibility Act.

3.8 Direct, Indirect and Cumulative Effects

Effects of an action can be direct or indirect. According to the definition in the Council on Environmental Quality (CEQ) regulations (40CFR1500.1) providing guidance on NEPA, direct effects are caused by the action and occur at the same time and place, while indirect effects are those caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Although the CEQ regulations draw this distinction between direct and indirect effects, legally both must be considered equally in determining significance. In practice, according to "The NEPA Book" (Bass et al. 2001, p. 55), "the distinction between a reasonably foreseeable effect and a remote and speculative effect is more important than the question of whether an impact is considered direct or indirect."

The alternatives under consideration in this EA/RIR/IRFA are primarily designed to improve data collection on DSR mortality. Any direct effects or reasonably foreseeable indirect environmental effects from the action would be minor, as explained in the EA. The action itself would not entail changes in harvest levels, and any environmental effects, such as the removal of DSR biomass from the ecosystem, are so minor as to make it difficult to reasonably predict further indirect effects of those changes. However, the action could have some indirect effects when we consider possible changes in management deriving from the improved information gleaned from the data collected under full retention rules. The new data would affect the calculation of TAC and ABC levels, and the relative proportion of DSR allotted to the directed DSR fishery and as incidental catch could also change in response to an enhanced understanding of fishing-induced DSR mortality. The process by which these decisions are made would not be affected, however.

Cumulative effects are linked to incremental policy changes that individually may have small outcomes, but that in the aggregate and in combination with other factors can result in major resource trends. Cumulative effects from fishery management actions in the Gulf of Alaska have been examined in depth in the PSEIS (NMFS 2004) and the Steller Sea Lion Protection Measures Final EIS (NMFS 2001b).

This action would not interact synergistically with other actions or with natural trends to significantly affect the resources of the Gulf of Alaska. No other regulations concern mortality accounting for DSR taken in Federal waters. The preferred alternative is designed to essentially extend the State's full retention plan for DSR to include Federal waters, and direct or indirect environmental or socioeconomic benefits and costs would be similar for the State and Federal regulations. Mortality accounting could theoretically be affected by the sport fishery for DSR, but, as discussed in the RIR, section 4.6, the sport fishery is relatively small, it is not subject to the harvest limitations established by the commercial fishery managers, and sport harvests are not considered in the calculations that underlie the commercial

TACs. No reasonably foreseeable future actions would have impacts that would cause significant cumulative effects when combined with the effects from this action.

3.9 Conclusions

To determine whether there would be any significant impacts from implementation of the preferred alternative analyzed in this EA, as required by NEPA, 50 CRF § 1508.27, and NOAA Administrative Order 216-6 (NOA 216-6), we addressed 10 of the criteria for determining significance, which were suggested in two lists – one for general NOAA actions and one specifically for fishery management actions – in, respectively, Section 6.01 and 6.02 of NOA 216-6.[20] Our questions address the issues raised by this action and dealt with in the EA/RIR/IRFA, as follows:

1. Would the effects of this action be significantly adverse or beneficial?

   This is a relatively minor action within the context of fishery management in the Gulf of Alaska. Implementation of the preferred alternative, as analyzed in the EA/RIR/IRFA, will not significantly affect the quality of the human environment. While we may obtain information that allows us to improve DSR management at the margin, we do not expect fundamental changes in the management of the fishery. Direct impacts on the environment would be minimal, as discussed in sections 3.1 through 3.6 of the EA. Any changes in management that do occur would be based on policy adopted in light of new information and not as a direct result of implementing any of the alternatives. Indirect impacts to the environment could derive from better information leading to more skillful management. For example, new information could eventually lead to decisions by managers to reallocate DSR harvest between targeted and incidental catch harvests. From a socioeconomic standpoint, we expect minor direct impacts on fishermen and fish buyers from a full retention program, including increased handling costs, and minor changes in paperwork. If a successful donation program is in place, the satisfaction associated with a reduction in perceived waste would constitute a positive impact. The socioeconomic impacts are discussed in the cost and benefit sections of the RIR (Sections 4.8 and 4.9), with a summary provided in Table 10.

2. Would the proposed action jeopardize the sustainability of any target or non-target species affected by this action?

   The proposed action is not expected to jeopardize the sustainability of any target or non-target species affected by this action. As explained in section 3.1, the action is primarily designed to collect better data on incidental catch of DSR taken in the SEO by fishermen targeting other groundfish species and IFQ Pacific halibut. The action itself would not lead to direct changes in the mortality level, but improved information might lead to certain changes in management. For example, the TAC or ABC, or the proportion of DSR taken by the directed fishery for DSR, or as incidental catch in other fisheries, might change in response to an enhanced understanding of fishing-induced DSR mortality.

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[20] A few of the criteria listed in NOA 216-6, including the potential for adverse impact on historically or culturally important sites and whether the action might result in the introduction or spread of a nonindigenous species, were not considered relevant to this action, and some of the listed criteria were combined.

3. Would the proposed action cause substantial damage to essential fish habitat, or have a substantial impact on biodiversity and ecosystem function within the affected area?

The proposed action would not cause substantial damage to essential fish habitat, or a substantial impact on biodiversity and ecosystem function within the affected area, as discussed in sections 3.2 and 3.3 of the EA. The amount of fishing and the types of fishing gear used would not change. Requiring full retention might have some effect on fishing locations, as fishermen might want to avoid excess bycatch of DSR, which could have some localized beneficial effects on habitat used by DSR species. Some DSR that would be discarded under current management would instead be landed, but the reductions in discards would not be large enough to measurably affect scavenger populations or the marine food web.

4. Would the proposed action adversely affect endangered or threatened species, marine mammals, or critical habitat?

As analyzed in sections 3.5 and 3.6 of the EA, none of the alternatives would adversely affect endangered or threatened species, marine mammals, or critical habitat.

5. Would the proposed action affect public health or safety?

No issues involving public health or safety have been raised in connection with this action.

6. Would the effects on the human environment detailed in the EA/RIR/IRFA be highly controversial?

No controversy has arisen regarding the data and level of information used in this analysis.

This proposed action has also not met with much public controversy. When initially proposed, Alternative 2 provoked some discussion because of potential costs to fishermen of complying with the rule, but these costs are counterbalanced by perceived benefits in terms of improved data collection and reduced wastage. The State of Alaska implemented full retention regulations in its own waters adjacent to the Federal waters covered by this action in 2000. The operation of the State's rule has not caused controversy.

7. To what degree are the effects of this action highly uncertain; does the action involve unique or unknown risks?

Some uncertainty attaches to the question of the degree to which fishermen will comply with a full retention requirement. To the extent that the data is incomplete, the objectives of the action may be undermined. The action does not entail unique or unknown risks.

8. To what degree does this action establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The experience with the results of this action may help managers decide whether or not to take similar action for other rockfish species with poor bycatch information, such as shortraker and rougheye. Beyond the possibility that it may prove helpful in assessing full retention as a tool, this action is such a carefully crafted response to a special situation that its ramifications are likely to be limited.

9. Will the action have effects that are individually insignificant but cumulatively significant?

This action is not expected to have effects which combined with the effects of other actions or natural trends would be cumulatively significant. –See section 3.8.

10. Will this action cause a violation of Federal, state, or local law for environmental protection?

No.

4.0 REGULATORY IMPACT REVIEW

4.1 Introduction

This Regulatory Impact Review (RIR) evaluates alternative regulatory actions to improve information on demersal shelf rockfish (DSR) bycatch mortality in the halibut and groundfish hook-and-line and jig fisheries in Federal waters in the Gulf of Alaska's Southeast Outside District (SEO).[21]

4.2 What is a Regulatory Impact Review?

This RIR is required under Presidential Executive Order (E.O.) 12866 (58 *FR* 51735; October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the 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 nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

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

[21]The SEO area is also designated as Area 650. The SEO includes Alaska State waters (within three miles of the outside coast) as well as Federal waters. SEO and its subareas are shown in Figure 2 in the EA.

4.3 Statutory authority

The National Marine Fisheries Service manages the U.S. groundfish fisheries of the Gulf of Alaska management area (GOA) in the Exclusive Economic Zone (EEZ) under the Fishery Management Plan (FMP) for that area. The North Pacific Fishery Management Council (Council) prepared the FMP under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Regulations implement the FMPs at §50 CFR part 679. General regulations that also pertain to U.S. fisheries appear at subpart H of §50 CFR part 600.

Federal regulations were amended in 1991 so that State of Alaska (State) management regulations governing the harvest of DSR in the SEO would not be pre-empted. Under this regulation, State of Alaska regulations governing fishing seasons, gear, harvest guidelines, possession and landings requirements, and harvest of bait by commercial permit holders, were not pre-empted in Federal waters for vessels "fishing for demersal shelf rockfish in the Eastern Regulatory Area" (56 *FR* 2706, January 24, 1991). The Eastern Regulatory Area includes the SEO district, as well as the waters inside Southeast Alaska (Area 659), inside Prince William Sound (Area 649), and in the GOA south of Prince William Sound (Area 640).[22]

Management of the Pacific halibut (hereafter halibut) fishery in and off of Alaska is based on an international agreement between Canada and the United States – the "Convention between United States of America and Canada for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea," signed at Ottawa, Canada on March 2, 1953, and amended by the "Protocol Amending the Convention," signed at Washington, D.C., March 29, 1979. This Convention, administered by the International Pacific Halibut Commission (IPHC), is given effect in the United States by the Halibut Act. Generally, fishery management regulations governing the halibut fisheries are developed by the IPHC and recommended to the U.S. Secretary of State. When approved, these regulations are published by NMFS in the Federal Register as annual management measures. For 2002, the annual management measures were published March 20, 2002 at 67 FR 12885.

The Halibut Act provides for the Council to develop halibut fishery regulations, including limited access regulations, in its geographic area of concern that would apply to nationals or vessels of the United States (Halibut Act, section 773(c)). Such regulations must be in addition to and not in conflict with IPHC regulations, approved and implemented by the Secretary, and any allocation of fishing privileges must be fair and equitable and consistent with other applicable Federal law.

The Council does not have a "fishery management plan" for halibut as that term is used under the Magnuson-Stevens Act. Hence, halibut fishery management rules developed by the Council do not follow the FMP or FMP amendment procedures set out in the Magnuson-Stevens Act. Instead, a regulatory amendment process is followed. This process requires submission of the Council action to the Secretary together with a draft proposed rule notice for publication in the Federal Register, along with supporting analyses as required by other applicable law.

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[22]These areas are shown in Figure 1 in Section 1 of the EA.

4.4 Purpose and need for action

This RIR examines the impacts of alternative methods of obtaining better information on DSR mortality on the Gulf of Alaska fisheries harvesting DSR. As noted in the accompanying Environmental Assessment (EA)[23], the four purposes of this action are:

1. To improve the gathering of information on the bycatch of DSR in the halibut longline fishery and other fisheries in the SEO, in order to get a more accurate picture of DSR mortality and to enable biologists to improve the annual stock assessments.

2. To avoid, in the process of implementing a full retention program, either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold.

3. To minimize waste to the extent practicable while meeting these goals.

4. To achieve consistency between State and Federal regulations that govern the retention and disposition of DSR harvested in the SEO.

Fishermen catch DSR in fisheries targeted directly on DSR. They also catch it in other fisheries, particularly those for halibut, as a by-product. The annual DSR TAC is divided between the targeted DSR fishery and incidental catch in the halibut fishery (and other groundfish fisheries). To prevent fishermen in the halibut and other groundfish fisheries from topping off (or deliberately targeting) DSR,[24] they are required to discard DSR taken in excess of 10 percent of the weight of the targeted fish they have onboard. However, this regulation creates three problems: (1) DSR do not survive capture, so that discarding them is seen by many fishermen and managers as wasteful; (2) the discards are not adequately reported, so managers have poor information about the total levels of discard mortality; (3) State and Federal regulations governing the treatment of DSR incidental catch are currently in conflict and create compliance problems for the fishermen.

Because discards are not adequately reported, total bycatch mortality of DSR in the halibut and other groundfish fisheries is unknown. If, on the basis of information gained from the proposed action, it turns out that the bycatch is significantly greater than currently estimated, the directed fishery allocation may be reduced to prevent the risk of overfishing. Conversely, if the true mortality is lower than estimated, the directed fishery allocation may be increased. Data from the action would be used in several ways: (1) to obtain information about bycatch and bycatch rates for DSR; (2) to calculate total mortality; (3) to enhance the DSR stock assessment and refine estimates of allowable biological catch (ABC) and TAC levels.

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[23] Section 1.3.2.

[24] See the "topping off" discussion in Section 1.2.5 of the EA.

Market failure rationale

U.S. Office of Management and Budget guidelines for analyses under E.O. 12866 state that

> . . . in order to establish the need for the proposed action, the analysis should discuss whether the problem constitutes a significant market failure. If the problem does not constitute a market failure, the analysis should provide an alternative demonstration of compelling public need, such as improving governmental processes or addressing distributional concerns. If the proposed action is a result of a statutory or judicial directive, that should be so stated.[25]

The alternatives reviewed in this RIR are a response to a market failure. Public management of the DSR fishery is necessary to maximize the social value of the DSR resource. DSR are a slow-growing common property resource. Fish left unharvested by one fisherman can be taken by the next. Fishermen individually, and as a group, have an incentive to fish intensely in the present, because each must heavily discount the possibility of his own harvest in the future. Taken together, the fishermen exploit the fishery as if they had a discount rate that was higher than the appropriate social discount rate. Fisheries management has intervened to offset this tendency by imposing annual total allowable catches (TACs) based on annually updated estimates of the available resource base.

4.5 Alternatives considered

The four alternatives considered for this action have been described in detail in Section 2.1 of this Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA). This section summarizes the alternatives.

Alternative 1: No Action

Under this alternative the maximum retainable percentage limit (MRA) as set out in 50 CFR 679(e) and 50 CFR 679.20, Table 10, would continue to apply. There would be no change in the 10 percent MRA for DSR for fishermen using hook-and-line or jig gear in the SEO. Fishermen could retain any DSR caught, so long as the weight of the retained DSR was less than 10 percent of the weight of their target species; they would be required to discard any DSR harvested that was over that limit.

[25]Memorandum from Jacob Lew, OMB director, March 22, 2000. "Guidelines to Standardize Measures of Costs and Benefits and the Format of Accounting Statements," Section 1.

Alternative 2: Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO.

This alternative requires full retention of DSR, allows for sale of up to 10% of landed catch[26], and gives two alternatives for disposal of other rockfish. It has four parts:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted vessels using hook-and-line and jig gear in the SEO be retained, landed, weighed and reported on State of Alaska fish tickets;

3. Limit fishermen to retaining the revenues from incidental catch of DSR of no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip.

4. Any DSR in excess of the amount that may be sold with revenues retained by the fishermen may be disposed of by either of two methods:
   a. sell the excess DSR and relinquish the proceeds to the State of Alaska;
   b. retain the excess DSR for any other use except sale, barter, or trade.

(This was the Council's original preferred alternative. For reasons discussed in the EA and in Appendix A, NOAA General Counsel has indicated that the Magnuson-Stevens Act may not provide the necessary authority to implement this alternative. At its February 2003 meeting, the Council adopted Alternative 3 as its new preferred alternative.)

Alternative 3: Require full retention of DSR in the hook-and-line and jig gear fisheries in the SEO; don't allow DSR over the 10 % sales limit to enter the stream of commerce

Alternative 3 is similar to Alternative 2 except that any DSR caught in excess of the10% sale limit would not be allowed to enter the stream of commerce, but could be retained for any other use, including personal use or donation to a charity. Alternative 3 would:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained and landed. Catcher/processors would continue to observe current maximum retainable amounts (MRAs) for DSR.

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[26]Sablefish is the only exception to this 10% MRA. The limit for sablefish would be 1%.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Allow retention of any DSR in excess of the amount that may be sold for any use except for sale, barter, or trade.

Alternative 3 was chosen as the Council's preferred alternative at its February 2003 meeting.

Alternative 4: Observer program on halibut longline and other hook-and-line vessels in the SEO to estimate mortality of DSR in non-target fisheries

Under this alternative the 10 percent MRA would be retained. Fishermen would still be required to discard DSR over that MRA. This alternative would extend existing regulations requiring observer coverage for 30 percent of fishing days on catcher vessels from 60 to 125 feet LOA to apply to catcher vessels fishing for groundfish and halibut in the SEO.

4.6 Description of fishery

This section of the RIR is organized into five parts; each part describes a different aspect of the DSR fisheries: (1) the approach used to determine the amounts of DSR that can be harvested in each year; (2) the DSR full retention program in State waters that has been operating since July 2000; (3) the directed fishery for DSR in the SEO; (4) the fishery in the SEO that takes DSR as incidental catch; and (5) the sport fishery.

Allowable catch determination and allocation in Federal waters

The SEO is divided into four separate subdistricts: the Southern Southeast Outside (SSEO), Central Southeast Outside (CSEO), Northern Southeast Outside (NSEO) and East Yakutat (EYKT).[27] These subdistrict designations are important, because the DSR fishery TACs are calculated and administered separately for each of these areas. Table 5 summarizes the approach to directed DSR TAC determination in the subareas in the SEO.

If a directed fishery is allowed, it takes place in two parts. A winter fishery, which is allocated two-thirds of the directed DSR TAC, takes place from January 1 to March 14, while a fall fishery, with one-third of the TAC, takes place from November 16 to December 31. In other words, once 67 percent of the annual directed harvest limit for a management area is taken in the winter, the fishery is closed, and once

[27] The SEO (Area 650) and its four subareas are shown in Figures 1 and 2 in Section1.2.1 of the Environmental Assessment (EA).

Table 5. DSR directed fishery TAC Determination in the SEO Subareas

Calculate the yelloweye biomass	Yelloweye rockfish accounts for about 90% of DSR harvests in the SEO. The calculation of the allowable DSR harvest is based on annual estimates of the yelloweye biomass. The estimate of the exploitable biomass of yelloweye in each of the subareas is based on the estimated yelloweye habitat within the area, the estimated yelloweye density within the habitat, and the estimated average weight of the yelloweye. The yelloweye density estimates are based on transects surveyed by submarine. Yelloweye biomass estimates are deliberately conservative. The estimates in each area are based on the lower end of the 90% confidence interval around the point estimate for density. This conservative approach to estimating the exploitable biomass is taken because yelloweye "are particularly vulnerable to overfishing given their longevity, late maturation, and sedentary and habitat-specific residency." (O'Connell, Carlile, and Brylinsky, 2001, p. 10).
What is the permissible catch from the biomass?	Within each area the recommended allowable biological catch of yelloweye is determined using a fishing mortality rate of F = 0.02 of the biomass. Yelloweye are estimated to constitute 90% of the harvest. Therefore, the actual total harvest of yelloweye and other DSR (mainly quillbacks) can be calculated by dividing the yelloweye catch estimate by 0.9. The use of the rate F=0.02 is conservative (Tier 4 allows for $F_{40\%}$, in this case equivalent to F=0.025).
What is the expected DSR bycatch in the SEO?	Managers estimate the percentage of the halibut harvests within Halibut IPHC management Areas 2C and 3A that were taken in the SEO in the previous year. These percentages are then applied to the 2C and 3A halibut quotas for the coming year. IPHC statistical reporting areas do not correspond exactly with the SEO subareas, so rough extrapolation is required from the IPHC areas to the SEO areas. DSR bycatch is assumed to be 10% of the halibut harvest from the Southern Southeast Outside, Central Southeast Outside, and Northern Southeast Outside subdistricts, and of fish coming from Area 19 of the East Yakutat subdistrict. Area 19 approximates the Fairweather Grounds, where DSR bycatch is believed to be relatively high. DSR bycatch is assumed to be 7% of the halibut harvest from other parts of the East Yakutat subdistrict (Areas 18W and one-half of the harvest from Area 20).[28] The 10% and 7% bycatch rates have a weak scientific foundation. These estimates fall within ranges suggested by other data sources and have political support. However, ADF&G managers suspect that they may be low. They cite IPHC port survey data collected prior to the advent of the individual quota program which suggest bycatch rates of 13% to 18%.[29] Catch curve analysis of yelloweye data suggests that fishery removals are greater than estimated in some areas.
How much DSR is available for the directed fishery?	Subtract the expected DSR bycatch from the fishable biomass. The remainder is available for the directed fishery. If the remainder is too small, there will be no directed fishery in that subarea. There has been no directed DSR fishery in the NSEO subarea since 1994. The DSR bycatch in the EYKT subarea was high enough to require closure of the directed DSR fishery for the first time in 2002.
Notes: The details of this process may be found in O'Connell, Carlile, and Brylinsky (2001).	

33 percent of the limit is taken in the fall season, the fishery is closed.[30] Often the TAC for the directed fishery is harvested and the fishery closed before the full season is completed.

DSR managers have no control over halibut quotas or fishing activity and thus no control over incidental catch of DSR in the halibut fishery. The halibut fishery is given priority access to the DSR quota, and

[28]Tory O'Connell, ADF&G demersal shelf rockfish manager, Dec. 11, 2001, pers. com.

[29]O'Connell, *supra*.

[30]The season regulation may be found at 5 AAC 28.111.

the residual, if any, is made available for the directed DSR fishery.[31] If it is estimated that the incidental catch in the directed halibut and groundfish fisheries will exceed the TAC in a management area, the directed fishery in that area is precluded. As noted in Table 5, there has been no directed fishery for DSR in the Northern Southeast Outside (NSEO) District since 1994. In 2002, the directed DSR fishery on the Fairweather ground was closed because the estimated incidental catch of DSR in the halibut fishery in that area would be too large to allow one.

Full retention in Alaska waters

DSR occur in both Federal waters and State waters (within three miles of shore) in the SEO. The State of Alaska adopted a "full retention" regulation similar to Alternative 2 that became effective in its waters in July, 2000.[32] In 2001, Southeast Alaska fishermen completed the first full year of fishing under this regulation. The State regulation is important for this discussion for two reasons: (1) the experience in the fishery under this regulation may shed light on the way a similar regulation might work in Federal waters; (2) current conflicting approaches in State and Federal waters create compliance difficulties for fishermen.

In February 2000 the Alaska Board of Fisheries adopted a regulation requiring fishermen in State waters who take DSR as incidental catch to retain all of the DSR, weigh it, and report it on fish tickets. Under this regulation, fishermen may retain the income from DSR incidental catch up to 10 percent of the round weight of the targeted fish that they land. Fishermen are required to submit any income from the sale of any DSR over 10 percent of the round weight of the targeted fish to the State of Alaska's fishery fund (O'Connell et al. 2001, p. 9). The money placed in this fund is to be used for the benefit of the fishery from which it was collected.[33] This regulation applies in Alaska State waters but not in Federal waters. Since areas of the SEO within three miles of the coast are State waters, the rule applies in some, but not all of the waters of the SEO.

While compliance is impossible to determine accurately, fishery observers suggest that it is substantial.[34] The full retention regulation appears to have had an impact on the volume of DSR being delivered. Table 3 in the EA summarizes the amounts of DSR landed over regulatory limits and confiscated in various fisheries from 1996 to 2001. In 2000, fishermen delivered 12,410 pounds or about 5.6 metric tons of DSR that fell into this category from the halibut and other groundfish fisheries in State and Federal waters. In 2001, fishermen delivered 38,302 pounds, or about 17.4 metric tons in this category. This is a large apparent increase in delivered DSR bycatch.[35] Moreover, Table 2 indicates that a large part of this increased volume of fish in this category came from fishermen active in Federal waters of the

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[31]The bycatch priority may be found at 5 AAC 28.160(c)(1)(C).

[32]The full retention regulation may be found at 5 AAC 28.171(a).

[33]O'Connell, *supra*, note 26.

[34]O'Connell, *supra,* note 26; Dan Falvey, longline fisherman, Dec. 12, 2001 and Jan. 30, 2002; Arne Fugulvog, longline fisherman, Dec. 13, 2001, pers. com.

[35]This comparison of 2000 and 2001 should actually understate the total impact, since the regulation took effect in July 2000 and total DSR retentions that year are probably above what they would otherwise have been.

SEO (to whom the full retention rule did not apply). Deliveries in this category reported from Federal waters rose from 8,760 pounds in 2000 to 22,931 pounds in 2001. The increase in deliveries from Federal waters accounted for about 45 percent of the total increase in deliveries.

This regulation has had operational implications for fishermen since they must now retain all incidental catch of DSR, thus utilizing valuable hold space. Two main storage techniques are used on the vessels in this fishery. Some ice down their fish in fish holds, others store the fish in tanks of refrigerated sea water (RSW). Storing the additional DSR onboard raises three issues: (1) impact on quality of other fish, (2) maintaining DSR quality, (3) displacement of other fish. DSR have spines which can puncture other fish in the same storage compartment, reducing their commercial value. Moreover, storage in RSW tanks may also lead to abrasion between the DSR and other species, damaging the scales and flesh of the other species. DSR themselves lose quality when they are stored in RSW tanks. Yelloweye are valued, in part, for their bright red or orange color. Storage in RSW tends to wash out the color, in some cases leaving them appearing white. This reduces their value on delivery. Finally, the space taken by DSR is not available for the storage of other species. An industry source suggests that a pound of DSR could be expected to displace more than a pound of halibut; he said that a pound and a half would be the high end of the possible range of displacement.[36]

On a vessel storing the fish on ice, these problems may be dealt with by setting the DSR aside until the other species are iced down, and then storing the DSR in a separate top layer of their own in the fish hold. The DSR may also be iced down in a bait hold. On larger vessels using RSW, the DSR can be iced in totes on the deck. Smaller RSW vessels with limited deck space for totes may experience the greatest storage problems.[37] Clearly, all of these options impose operational compromises and economic costs.

The volumes of DSR taken by halibut fishermen can require them to cut their fishing trips short. Fishermen may thus be required to take extra trips to fully harvest their halibut individual quotas. Rockfish must be delivered within three days of catch to be accepted by processors, while halibut will maintain their quality (and market value) onboard for significantly longer periods. Halibut trips often last 10 days.

If fishermen are trying to deliver quality rockfish and get a higher price for it, they may also tend to take shorter trips. DSR would displace other species (primarily halibut) only if the fishing vessel would have completely filled its holds on the trip. Anecdotal comments suggest that on many trips vessels return without filling their holds, and that this may be more common in the halibut fishery since the advent of the individual quota program. Fishermen now tend to fish more slowly, to be more concerned with quality, and to return to port without trying to completely fill their holds.[38]

Fishermen may sell their DSR to a fish buyer on shore, but they are not allowed to accept payment for the DSR in excess of their MRA for the trip (the limit will vary depending on their harvest of the target

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[36]Falvey, *supra*, note 30.

[37]Linda Behnken, longline fisherman, Jan. 30, 2002, pers. com., and Falvey, *supra*, note 30.

[38]Behnken and Falvey, *supra*, note 30.

species). If a fisherman lands DSR, including fish over the limit, the processor will write a check to him paying for the DSR under the limit. If the DSR species mix varies, or if the fish vary in quality, the processor and fisherman are able to count the more valuable fish as the allowable DSR. The processor does not pay the fishermen for fish over the limit. The processor writes a check to the Alaska Department of Fish and Game (ADF&G) for these fish and forwards the check to ADF&G along with the fish tickets. ADF&G also allows processors who wish to accumulate the checks from multiple trips to forward these with supporting documentation to the Department on a monthly basis.[39]

Fishermen have retained the fish for their own home use. Fishermen have also donated the fish to non-profits. At least one non-profit organization in Sitka is said to be willing to come take the fish for use in its own lunch program.[40] Relatively small amounts of DSR appear to have been used for these purposes so far, however.[41]

The change in the State's fishery regulations in July 2000 created an inconsistency with Federal regulations that is said to have caused inconvenience for many fishermen. Waters in the SEO within three miles of shore are under State jurisdiction, and are subject to the State's full retention regulations. SEO waters beyond the three-mile limit are subject to Federal regulation and to the provisions of the MRA program. These latter regulations prohibit retention of any fish over the 10 percent MRA. Fishing trips will often take fishermen into both Federal and State waters, and subject them to these conflicting regulations on different parts of their DSR catch. If enforcement agents board a vessel while it is fishing in Federal waters, there is a rebuttable presumption that all catch onboard has been caught in Federal waters, and is thus subject to the 10% MRA, regardless of whether the boat fished in State, a well as Federal, areas. As noted, fishermen are unable to weigh their fish at sea and on delivery must estimate the portions of their catches taken in State and Federal waters.

Directed DSR fishery in Federal waters

The directed fishery for DSR takes place primarily in waters between 75 and 150 meters deep. While the complex consists of seven species, in recent years about 90 percent of the harvest has been yelloweye and about 8 percent has been quillbacks. The directed fishery is largely a longline fishery, although jig gear is used by some fishermen (see Table 6).

By regulation the directed fishery season for DSR takes place from January 1 to March 14 and from November 16 to December 31. Sixty-seven percent of the directed DSR allocation in each of the SEO's subareas is reserved for the January-March season and 33 percent is reserved for the November-December season. The directed DSR allocations are based on the Federal TAC after deducting estimated halibut and other groundfish bycatch mortality. The actual fishing period in some areas can be significantly less than the scheduled seasons, because the fleet is capable of taking its quota more

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[39]Marshall, Scott. 2000. Letter from Scott Marshall, Southeast Regional Supervisor, Commercial Fisheries Division, Alaska Department of Fish and Game, to Southeast seafood processors. November 16, 2000.

[40]Behnken and Falvey, *supra*, note 30.

[41]Kamala Carroll, ADF&G, Sitka, Feb. 14, 2002; Jeff Pearson and Bev McElhose, Seafood Producers' Co-op, Feb. 6, 2002, pers. com.

quickly. In 2002, the winter season in the Central SEO only lasted until January 4, and the fall season until November 17. The winter season in the Southern SEO lasted until January 25, while the fall season lasted until November 24. There were no open seasons in the Northern SEO. In 2001, only the East Yakutat area had no premature seasonal closure (O'Connell and Brylinsky 2001, Tables 6a -6f, pp. 20-25).

During the directed fishery east of 137°W. Long. (including all the outside districts except East Yakutat), vessels or Alaska Commercial Fisheries Entry Commission permit holders may not sell more than 6,000 pounds (round weight) of DSR in any five-day period. DSR over this amount must be weighed and reported on an ADF&G fish ticket; and revenues from DSR in excess of this amount must be turned over to the State. Similar provisions are in place in the East Yakutat portion of the SEO, except that the five day limit is 12,000 pounds (O'Connell 2001, pp. 12-13).[42] Money from trip limit overages is handled by Alaska, which treats it the same way as it does money from MRA overages. Note that trip limit overages may include money from trips in Federal waters.[43] [44]

The expenses incurred in such a trip would include those for fuel, food, ice, bait, damage to or loss of fishing gear, crewshares, and the cost of the skipper's compensation. Since directed DSR is probably only a part of a groundfish fisherman's diversified operation, the fixed costs of the operation are not significantly affected by a decision about whether or not to participate in the directed DSR fishery.

Table 6 summarizes information on numbers of catcher vessels estimated to have made directed harvests of DSR from 1996 to 2001. An examination of landings data shows that this directed fishery was prosecuted entirely by catcher vessels; catcher/processors were not active. Table 6 indicates several additional things: (1) two gear types made directed DSR harvests, hook-and-line and jig gear; (2) comparison of columns 2 and 3 with columns 6 and 7 indicates that almost all directed harvests were made by vessels greater than or equal to 27 feet and less than 60 feet (Vessels less than 27 feet don't need a Federal longline permit and vessels under 60 feet are not required to carry observers, as vessels over 60 feet are required to do 30 percent of their fishing time.); (3) the numbers of vessels of each gear type landing DSR appear to have been generally declining during this period.

The primary market for DSR (one industry source estimates it at about 90 percent) is the U.S. Chinese community (the product is not marketed to other Asians or other ethnic groups). This is a national domestic market (Houston, San Francisco, Detroit) although some may be shipped overseas. The product is marketed fresh and in the round (with the guts in) by the fish buyers.[45] To service this market, buyers require a high quality product from fishermen. They look for fish that have been bled and iced, with good flesh color and good color in the eyes, that have not been bleached by the sun while they lay on deck, have good texture, and have not been held onboard for more than three days. (If they have been

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[42]The regulation may be found at 5 AAC 28.171(c).

[43]Marshall, Scott. 2000. Letter from Scott Marshall, Southeast Regional Supervisor, Commercial Fisheries Division, Alaska Department of Fish and Game, to Southeast seafood processors. November 16, 2000.

[44]Carroll, *supra*, note 37.

[45]Jeffrey Reynolds, sales manager with Seafood Producers Co-op, Bellingham, WA, Dec. 28, 2001, pers. com.; and Brian Paust, Marine Advisory Agent, Petersburg, Ak., Jan. 29, 2002, pers. com.

held onboard three days, they may retain good quality for another 4 to 5 days before being consumed).[46] Other product forms are marketed as well. If the fresh, round market prices are low, processors may freeze the high quality DSR in the round and save it until markets improve. Poorer quality fish may be filleted and sold in other markets.[47]

Table 6. Numbers of catcher vessels active in the directed DSR fisheries in the SEO, 1996-2001.

	Vessels with DSR in DSR target landing		Vessels with DSR in all target landings		Vessels greater than or equal to 27 feet and less than or equal to 60 feet.	
Year (1)	Hook and line (2)	Jig (3)	Hook and line (4)	Jig (5)	Hook and line (6)	Jig (7)
1996	85	12	86	12	78	12
1997	76	8	76	8	71	5
1998	58	3	58	3	54	2
1999	61	3	61	3	58	2
2000	39	2	40	2	37	1
2001	44	1	44	1	40	1

Notes: prepared from the NMFS SF Alaska Region (AKR) "Catch by vessel" database. 12-17-01 and updated 12-17-02. Directed fishing was determined by the dates of landings (January 1 to March 14 and November 16 to December 31) and by the use of a DSR permit to make the landings. 2002 is not included, as up-to-date information on 2002 is not available in this database. These estimates are all catcher vessels; no catcher/processors appear to have been active during this period.

Table 7 provides estimates of average DSR prices in the directed fishery, and of total and average (per vessel) gross revenues generated in the directed fishery over the period 1996-2001. Price increases during this period did not completely offset generally declining harvests. As a result, total gross revenues from the fishery declined in every year, from about $768,000 in 1996 to about $561,000 in 2001. As noted earlier, the number of vessels participating in the directed fishery for DSR generally fell during this period. On balance, the size of the fleet appears to have fallen faster than gross revenues, so that average gross revenues were higher at the end of the period than in the beginning.

[46]Reynolds, Paust, *supra*, note 38.

[47]Reynolds, Paust, *supra*, note 38; Pearson, supra, note 37.

Table 7. DSR gross revenues from Directed DSR fishery in the SEO, 1996-2001

Year	Average DSR round price per pound	Average DSR round price per metric ton	DSR landings in metric tons	Gross revenues from DSR	Number of vessels	Average DSR gross revenues
1996	$1.01	$2,227	345	$768,200	97	$7,920
1997	$1.26	$2,778	267	$741,678	84	$8,830
1998	$1.26	$2,778	241	$669,455	61	$10,975
1999	$1.20	$2,646	235	$621,703	64	$9,714
2000	$1.53	$3,373	183	$617,272	41	$15,055
2001	$1.48	$3,263	172	$561,208	45	$12,471

Notes: Prices from NMFS-AKR REFM; directed landings from Table 8; number of vessels from NMFS-SF AKR "catch by vessel" data set. Gross revenues understate total revenues from this fishery since they do not account for the value of landed bycatch of other species.

DSR incidental catch fishery in Federal waters

Large amounts of DSR are also taken as incidental catch in the directed fisheries for halibut. Some additional amounts of DSR are taken in the other directed fisheries for groundfish. Table 8 shows total directed and incidental catch harvests and provides estimates of DSR discard mortality in the halibut and other groundfish fisheries. The two columns on the right side of the table show the large proportions of the total landings and of total DSR mortality that are believed to be due to bycatch discard mortality - primarily in the halibut fishery. These percentages have not only been large, but also variable. Discard mortality as a percent of total mortality ranged between 30 percent and 48 percent.

Some incidental catch is delivered in the very good condition required for the fresh and frozen round markets. Other DSR is of poorer quality and is directed to the fillet market. A comparison of the average prices in Table 7 (for directed DSR deliveries) with the average prices in Table 9 (for DSR delivered as incidental catch) shows that the average prices received in the incidental catch fishery are much lower. The average price for the six years from 1996 to 2001 for DSR incidental catch was about 51 percent of the average price for DSR delivered in the directed fishery. The percentage ranged from 38 percent in 1997 up to 66 percent in 1999. While fishermen delivering a high quality product may be receiving prices similar to those in the directed fishery, others are delivering product suitable for fillets. The latter fishermen may be receiving $0.30 to $0.35 a pound for their product.[48]

Under current Federal rules, fishermen may retain an amount of DSR equal to 10 percent of the weight of their target harvest. However, fishermen are unable to weigh their catch at sea. They must estimate the weights in order to stay within the MRA. In many cases, fishermen learn that their estimates were mistaken when they make their delivery and find that they have exceeded (or fallen short of) the MRA. For example, on weighing the fish, the processor may find that the DSR delivered is 200 or 300 pounds

[48]Reynolds, *supra*, note 38.

Table 8. SEO DSR directed catch, incidental catch, and estimated discards, 1993-2001. Metric tons round weight.

Year	Directed catch (a)	Delivered Incidental Catch (b)	Estimated Discarded Bycatch (c)	Reported landings* (a)+(b)	Total mortality (a)+(b)+(c)	Discards as percentage of landings	Discards as percentage of mortality
1993	345	272	271	630	901	43%	30%
1994	283	154	353	441	794	80%	44%
1995	177	112	130	302	432	43%	30%
1996	345	85	156	436	592	36%	26%
1997	267	87	204	367	571	56%	36%
1998	241	117	214	358	572	60%	37%
1999	235	112	324	347	671	93%	48%
2000	183	94	207	282	484	73%	43%
2001	172	147	170	319	489	53%	35%

Source: O'Connell et al. (2001, Table 2, p. 14). Estimated discarded bycatch, O'Connell, pers. com., 1-7-03.
*Includes small amounts of research catch (does not add to sum of directed and incidental catch)

Table 9. Value of DSR incidental catch in halibut and groundfish fisheries in the SEO.

Year	Metric tons round weight	Weighted average price for DSR ($/lb round weight	Price for yelloweye ($/lb round weight)	Total Value (using DSR price)
1996	85	0.65	0.67	$121,805
1997	87	0.48	0.48	$92,065
1998	117	0.53	0.54	$136,708
1999	112	0.79	0.81	$195,065
2000	94	0.82	0.84	$169,932
2001	147	0.71	0.72	$230,096

Notes: Incidental catch from Table 8; Prices from REFM.

over the limit. The processor will pay the fisherman for all of the fish, including the overage, and deliver copies of the fish tickets to NOAA Enforcement. NOAA Enforcement will calculate the size and value

of the overage and may present a "summary settlement offer" to the fisherman either in person or by certified mail. Unless it is a serious offense, the offer will allow the fisherman to voluntarily abandon the proceeds of the bycatch overage by submitting payment for the value of the overage, but will not impose further penalties. Due to staff limitations and heavy workloads, it can be up to ten months before the notice is sent out. After a summary settlement offer has been issued, the fisherman has up to 30 days to submit a check to NOAA enforcement for the value of the overage. If a fisherman chooses not to pay the summary settlement, the situation is placed in the hands of the NOAA GC's office and an additional penalty may be assessed.[49]

The halibut and sablefish seasons are open from March 15 to November 15. Most of the DSR landed during this period is incidental catch from halibut fishing.[50] The SEO overlaps two separate IPHC halibut areas, Areas 3A and 2C. Separate halibut QS was issued for each of those IPHC areas. Thus holders of 3A QS may fish in the western part of the SEO (which includes most of the Fairweather Grounds) and holders of 2C QS may fish in the eastern part of the SEO. In mid-December 2001, 1,505 unique persons held QS for halibut in IPHC Area 2C, and 1,997 unique persons held QS for halibut in IPHC Area 3A. Many of these people hold both types of QS, so summing the numbers from each area would overstate the number of unique persons who could fish for halibut in the SEO. Both Area 2C and Area 3A are very large, and many quota share holders in each area do not operate in the SEO.

In 2000, an estimated 423 vessels fished in the halibut and groundfish fisheries in the Federal waters of the SEO in which DSR was taken as incidental catch. Almost all of these were catcher vessels. Only five of the 423 were catcher/processors. Most took at least some halibut. Only 80 caught groundfish without showing deliveries of at least some halibut. These were generally small vessels, that is, vessels under 60 feet in length. Only 51 were over 60 feet; almost all of these fell into the length range of 60 to 125 feet (estimates based on NMFS Catch by Vessel Database and RAM halibut fishing statistics).

This fleet generated an estimated $33 million in gross revenue from its harvests in the Federal waters of the SEO during 2000. Average gross revenues were about $79,000 per vessel. Almost all of the revenues from the Federal SEO waters were generated from halibut and sablefish. Sablefish revenues were about $21 million, while halibut revenues were about $12 million. Fishing in the SEO was only a part of the fishing activity by these vessels. Gross revenues for these vessels, from all groundfish and halibut fisheries off Alaska in 2000, were $111 million, or about $262,000 per vessel. In addition to significant statewide revenues from sablefish ($54 million) and halibut ($45 million), these vessels obtained large revenues from Pacific cod ($9 million). DSR incidental catch revenues for 2000 in the SEO (estimated in Table 9) were about $176,000; total statewide DSR revenues (from incidental catch and directed harvests) were about $793,000 (estimated from Tables 7 and 9). These revenue estimates are only estimates of revenues from groundfish and halibut; many of these entities would also have earned revenues from other fisheries, of which Alaska's salmon and herring fisheries were probably most important. DSR incidental catch revenues were about 0.16% of the fleet's total statewide groundfish and halibut revenue; if probable herring and salmon revenues are also considered, DSR incidental catch revenues are even a smaller percentage of overall revenues. DSR incidental catch revenues in the SEO were about 0.53% of the fleet's groundfish and halibut revenues from Federal waters in the SEO.

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[49]Falvey, *supra*, note 30; Al Duncan, NOAA Enforcement agent in Sitka, AK, Feb. 6, 2002, pers. com. Ron Antaya, NOAA Enforcement, Juneau AK, March 22, 2002, and Jan. 10, 2003, pers. com.

[50]Falvey, *supra*, note 30 O'Connell, *supra*, note 26.

DSR incidental catch was taken primarily by the catcher vessels. Catcher/processors, typically fishing in deeper waters for sablefish, caught only trace amounts of DSR. Over the period of 2001 through August of 2003, observer data from 8 distinct catcher/processor vessels in area 650, with a total of 159 sampled sets, indicates that only 7 of the sampled sets, or 4.4 percent, had any DSR species, with a total extrapolated DSR weight of 286 kilograms, or about a quarter of a metric ton, for all those sets. The percentage of DSR in the observed sets was 0.11 percent.

Shoreside processors buying DSR also bought other groundfish, halibut, salmon, herring and crab. In 2000, the 22 firms processing groundfish in Southeast Alaska, had total gross revenues from all fish processing activities of about $262 million, or an average per plant of about $12 million. Several larger plants dominate the average calculation; the median gross revenues were about $5 million. Groundfish (which does not include halibut) were a relatively minor component of the processing activity, accounting for about 20% of aggregate firm gross revenues. Total groundfish revenues were about $52 million, or about $2.4 million per plant. The importance of groundfish varied across firms. Nine firms earned more than 10% of their gross revenues from groundfish, while five earned between 30% and 50% of their revenues from groundfish. No plant made more than 50% from groundfish. In comparison, the total first wholesale value of DSR products (from both the directed DSR fishery and from the DSR bycatch in other fisheries) in 2000 (from 19 plants) was about $1.2 million, or about $60,000 per plant.[51]

The sport and subsistence fisheries

Sport fishermen harvest DSR in the waters of Southeast Alaska. DSR are often taken as incidental catch in directed sport fisheries for salmon, halibut, and lingcod. They are also taken in a directed DSR sport fishery. The fisheries take place in both State and Federal waters; however, data collection procedures do not produce information on whether fish were harvested in State or Federal waters.

Although rockfish are not a primary target of most Southeast Alaska sport anglers, an estimated 37,165 rockfish were caught in the combined Ketchikan, Sitka, and Juneau fisheries in 2001. Only 45 percent of the rockfish caught were retained. Yelloweye comprised nearly 70 percent of the harvest in Sitka, but only 41 percent of the harvest in Ketchikan. Quillbacks were the second most commonly taken rockfish in Ketchikan, while black rockfish were the second most commonly taken in Sitka (Hubartt et al. in prep.).

In the Ketchikan area, sport rockfish harvests have generally declined from the levels of the early 1990s. The Ketchikan rockfish harvest in 2001 was only 34 percent of the 1984-2000 average. On the other hand, Sitka sport harvests have risen. The Sitka harvest in 2002 was about 177 percent of the 1984-2000 average. Fewer than half of the rockfish harvested are retained by the sport fishermen. The retention rate in the Ketchikan area was 38 percent in 2001, while the retention rate in the Sitka area was 47 percent. (Hubartt et al. in prep).

The sport fishery is managed by the Alaska Department of Fish and Game. Data is collected through creel surveys, a charter operator logbook program, and through a statewide survey of Alaska sport fishing

[51]Terry Hiatt. NMFS, Alaska Fisheries Science Center. Personal communication, September 27, 2001.

license holders. The Department is unable to estimate the biomass mortality associated with its harvest estimates. The creel survey and logbook programs, which provide the landings information, are designed to obtain data on fish numbers rather than weights. Management of the sport and commercial fisheries is not tightly integrated. Sport harvests are not subject to the harvest limitations established by the commercial fishery managers, and sport harvests are not considered in the calculations that underlie the commercial TACs.[52]

Data from surveys of subsistence resource users conducted by the Alaska Department of Fish and Game (ADF&G) suggest that "red rockfish" are a common subsistence good in Southeast Alaska. "Red rockfish" is a generic category, including yelloweye, shortraker, rougheye, and other species.[53] These surveys are available for twenty communities, some very small, in Southeast Alaska during the period 1996-1998[54]. While a community may have been surveyed in more than one year during this period, only data for the year considered by the Division of Subsistence as the most representative of the community harvest pattern are summarized here. The data are adequate to indicate the extent of subsistence use of red rockfish, but not to estimate actual subsistence harvests during the period.

The total edible pounds harvested for the different communities ranged from none for Klukwan and 110 pounds for the Game Creek Census Designated Place up to about 13,000pounds in Craig and 35,000 pounds in Sitka. A total of about 82,000 pounds of edible weight were harvested across all 20 communities in their most representative year (this is meant to provide a sense of the extent of subsistence use, not an estimate of annual subsistence use). Per capita harvests ranged from none in Klukwan and 0.64 edible pounds in Kake, to about 26 edible pounds in Naukati Bay and about 60 pounds in Edna Bay. Median community per capita consumption of edible meat was about 4.9 pounds.

The percentage of the households trying to harvest red rockfish in these communities was often quite large. This ranged from zero in Klukwan to 91.7% in Edna Bay. The average percent over the 20 communities was 31%. Because many harvesters pass on red rockfish as gifts, the percentages of households using red rockfish in these communities were even larger. In 10 of the 20 communities, over half of the households made use of subsistence red rockfish. The average percentage of community households transferring red rockfish as gifts was about 11%.[55]

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[52]Mark Schwann, Alaska Dept. of Fish & Game, Feb. 6, 2002, pers. com.

[53]The ADF&G Subsistence Division survey has categories for "red rockfish," "black rockfish," and "unknown rockfish." The focus here is on red rockfish, since yelloweye account for 90% of the DSR catch, and yelloweye fall in the red rockfish category.

[54] The twenty communtiies were: Angoon, Coffman Cove, Craig, Edna Bay, Game Creek Census Designated Place, Haines, Hollis, Hoonah, Hydaburg, Kake, Kasaan, Klawock, Klukwan, Naukati Bay, Point Baker, Port Protection, Sitka, Thorne Bay,Whale Pass, Whitestone Logging Camp.

[55] These are averages of community percentages, unweighted for community populations. Sitka is by far the largest community in the data set, and its percentages are below the community average for all of these cases. Thus the percentage of households in these 20 communtiies taken together would be less than these community averages.

Red rockfish used for subsistence may have been taken in a variety of ways. Some may have been harvested in directed red rockfish subsistence activities, or as bycatch in other subsistence activites. Some may be directed into subsistence channels from directed sport or commercial fishing activities. The ADF&G subsistence data base identifies three sources for red rockfish: commercial fishery retention, rod and reel (not a valid subsistence gear at the time, so this is presumably sport fish harvest identified by respondents as subsistence consumption) and other gear (presumably subsistence gear, possibly hand-held longlines). Of the 81,855 edible pounds of red rockfish identified from the representative years in the 20 communities, 38% was derived from commercial fishery retention, 55% was identified as taken with rod and reel, and 7% was taken with other gear types.

4.7 Summary of the benefits and costs

The DSR fishery has a value, which can be approximated by estimating the present value of the net returns that annual DSR harvests will generate through time.[56] The benefit of the DSR full retention alternatives, or of observer coverage, is the increase in the present value of the net returns from the fishery. The present value of the fishery may increase if better information allows managers to set TACs for DSR and allocations between directed DSR catch and incidental catch that will come closer to optimizing the sustained benefit stream deriving from the resource. The "value of the net returns" from the fishery must be construed broadly. It does not simply consist of the change in the profits to commercial users. Consumers, subsistence and personal-use fishermen, and sport fishermen may receive net benefits from the fishery that are not measured by commercial market prices. Conservationists may receive benefits if the proposed action reduces the likelihood of severe resource degradation or even species extinction.

Acquiring better information may be costly. Under Alternatives 2 or 3, commercial fishermen will have to retain and deliver all DSR catch, including fish they are currently required to discard. This will impose direct expenses and require operational changes. If it is costly for them to do this, the costs will offset some of the increase in the present value of the resource. Depending on relative market power (e.g., as between harvesters, processors, wholesalers, and consumers) some of these costs may be distributed to other participants in the DSR market stream. Under Alternative 4, the commercial fishing sector will have to pay for observer coverage, which is not currently required under the status quo (Alternative 1) and would not be required under Alternatives 2 or 3.

The benefits and costs of the alternatives are summarized below in Table 10. These impacts are discussed more carefully in Sections 4.8 (Benefits) and 4.9 (Costs). The final section of the RIR, Section 4.10, summarizes the implications for the E.O. 12866 significance analysis.

In general the information on operating behavior and costs that would make it possible to predict how fishermen and markets will react to the new regulation, and how their costs and revenues will change, is not available. Therefore this analysis of benefits and costs must be primarily qualitative.

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[56]The present value is the sum of the annual net benefits from each year in the fishery, after appropriately discounting values from future years.

Table 10. Summary of the cost and benefit analysis

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	Status quo. Continue 10% MRA prohibiting retention above that level.	*Required retention. Fishermen must retain all DSR and dispose of it onshore without commercial compensation for excess.*	*Required retention. Fishermen must retain all DSR and dispose of it onshore without commercial compensation for excess. DSR may not enter "stream of commerce."*	*Observers. Implement 30% observer coverage on halibut and groundfish fishing vessels in the SEO.*
Impacts on resource management (See section 4.8)	None	Better information on bycatch mortality, potential source of funds for DSR management, fishermen may change behavior to avoid DSR	Better information on bycatch mortality, fishermen may change behavior to avoid DSR	Better information on bycatch mortality
Benefits (See Section 4.8)	No change in benefits	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Non-compliance could compromise the confidence that can be placed in this data source. Less frustration for fishermen over perceived DSR discard waste. Reduced conflict between State and Federal retention regulations. Benefits from improved management may also accrue to sport and subsistence users.	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Non-compliance could compromise the confidence that can be placed in this data source. Reduces the conflict between State and Federal retention regulations, but not to the extent of Alternative 2. May reduce waste, but not to extent of Alt. 2. Benefits from improved management may also accrue to sport and subsistence users.	Resource management improvements may lead to increased value of stock to commercial fishermen, distribution system, and consumers. Benefits from improved management may also accrue to sport and subsistence users.
Costs (see Section 4.9)	No change in costs	Costs to fishermen for onboard storage, handling and delivery of DSR. Some additional cost to processors for additional weighing and grading. Depending on market conditions, as well as condition of surrendered catch, processors may face increased cold storage, inventory, handling, and [perhaps]] disposal costs. Potential costs for enforcement.	Costs to fishermen for onboard storage, handling and delivery of DSR. Some additional cost to processors for additional weighing and grading. Disposal costs higher than Alt 2 since there are fewer options. Depending on market conditions, as well as condition of surrendered catch, processors may face increased cold storage, inventory, handling, and [perhaps]] disposal costs. Potential costs for enforcement.	Additional observer costs of $330 per day, plus transportation costs. Reduced work room for crew on vessels. Changes in operating patterns of vessels may be necessary to accommodate the observers.
Net benefits	No change in net benefits	Impossible to quantify with the available information.	Impossible to quantify with the available information.	Impossible to quantify with the available information.
Program objectives (See Section 4.4)	Does not address issues of bycatch mortality, waste, and conflict between State and Federal regulations.	Improves bycatch mortality estimates, does not increase incentives to target DSR, reduces DSR waste, reduces conflict between State and Federal regulations. This alternative has legal difficulties.	Improves bycatch mortality estimates, does not increase incentives to target DSR. Reduces conflict between State and Federal regulations, although not to the extent of Alternative 2. Does not address waste issue.	Improves bycatch mortality estimates, likely has the strongest disincentive to target DSR (i.e., onboard observer). Does not address the issues of waste or of conflict between State and Federal regulations
E.O. 12866 significance (see Section 4.11)	Does not appear to be significant	Does not appear to be significant	Does not appear to be significant	Does not appear to be significant

Notes: Alternative 1 (**status quo**) is the **no action** alternative and provides the **baseline** against which the costs and benefits for action alternatives have been estimated.

4.8 Benefits of the alternatives

The potential benefits from Alternatives 2 or 3 are likely to be very dependent on the extent to which fishermen comply with the rule. Because of this, the first part of this section deals with enforcement issues. A discussion of impacts on resource management follows. Benefits accruing to persons who value the continued existence of DSR (e.g., passive-use), to commercial fishermen and processors, to sport fishermen, to subsistence/personal-use fishermen, and to consumers are then discussed.

Enforcement

Alternatives 2 and 3 require fishermen to retain DSR bycatch, to bring it to shore, and to weigh it. Neither alternative allows fishermen to earn income from the DSR retained above the 10% MRA. Alternative 3 also prohibits fish buyers or processing firms from earning income from these fish.

These alternatives create a two-fold enforcement problem. First, discard of DSR at-sea will be illegal under Alternatives 2 or 3. However, under each alternative, costs associated with retention and disposal of the DSR may give fishermen an incentive to discard. Second, under these alternatives, fishermen can only receive payment for DSR weighing up to 10% of the other species they are delivering. This provision is included to limit the incentive to target DSR. Moreover, under Alternative 3, the excess DSR may not enter the stream of commerce. Because DSR are valuable, processors and fishermen have an incentive to evade the rules prohibiting or restricting commercial DSR transactions.

Both alternatives impose costs on fishermen or processors, including the costs of storing DSR onboard, the possible displacement of target species because of limited storage facilities aboard, the costs of weighing and recording the DSR, and the costs of disposal after weighing. The disposal costs may be somewhat greater under Alternative 3, which restricts acceptable ways of disposing of the fish to a greater extent (by prohibiting the fish from being sold, traded or bartered). Because of these costs, fishermen will have a continuing incentive to discard their excess bycatch at sea, in violation of the proposed regulations.

Discard of DSR at-sea is illegal under Alternatives 2 and 3. Fishermen incurring the costs described above will be balancing the immediate savings associated with discarding against their desire to obey the law, and the expected value of any fine they may incur if caught violating the discard prohibition. The expected value of the fine will depend on the likelihood that they are caught, and (since a fine will be imposed in the future, if at all) by the fisherman's subjective discounting of future costs and benefits.[57]

Discarded rockfish continue to float and many have a bright red color that attracts attention. However, effective enforcement of the rule is likely to require actual observation of discarding or of discards closely associated with a vessel. Vessels that routinely discard DSR as they are brought aboard are not likely to be found with large numbers of DSR nearby. Vessels that initially retain DSR, but that discard it when they find they have more than they can be paid for, may discard larger amounts at one time. Observations from planes or helicopters may not be enough; it may be necessary to actually recover

[57]The discounting reflects the fact that $100 that must be paid a year from now is less of a burden than $100 that must be paid now - since if it doesn't have to be paid for a year you can enjoy the use of it in the interim.

discarded fish to make a species identification. In some instances, crew members may report discarding activity, but their allegations may be difficult to verify.

Under Alternative 2, fishermen may also be paid for the DSR they land, up to 10% of the weight of the other species they land. Payment for the remaining fish must be directed to the State of Alaska's fisheries fund and not to the fishermen.[58] The processors may then sell the DSR at wholesale and retain the proceeds. The purchase of excess rockfish may be a profitable activity for buyers and processors. This raises the possibility that buyers and processors will look for ways to encourage fishermen to deliver rockfish in excess of the 10% retention cap. They could do this by paying relatively higher prices for the 10% DSR (a DSR premium) that the fishermen may legitimately be paid for, or by paying more than the going rate for species that are delivered along with the DSR. This activity could be very difficult for enforcement to identify. While it would not lead to a miscounting of delivered DSR volumes, it does raise the danger that DSR targeting might be encouraged, or at the least, that fishermen would be less prone to avoid areas with high DSR bycatch.

Under Alternative 3, fishermen may be paid only for the DSR they land, again up to 10% of the weight of the other species they land. However, DSR above this limit are not be allowed to enter the "stream of commerce." That is, processors may not sell DSR or DSR products. Either the processor, or the fisherman, must take responsibility for disposing of the excess DSR through non-commercial channels. The fishermen, or the buyers, or their employees could personally consume the DSR. Alternatively, the excess DSR could be donated to a non-profit outlet, or it could be disposed of in the plant's processing waste stream, although presumably not in the manufacturing of fish meal and oil, because these are commercial products, subsequently offered for sale (i.e., which enter the stream of commerce). This requirement raises enforcement issues beyond those under Alternative 2. The DSR may be valuable in wholesale markets. That value gives buyers or processors an incentive to sell the fish and share the proceeds with the fishermen. Successful cheating may also make it necessary for buyers and processors to falsify their State and Federal reporting records. Since the DSR may legitimately be disposed of by donation to non-profit entities, there is also a possibility that non-profits may resell DSR.[59]

Impacts on resource management

The benefits of the alternatives may flow from three impacts the alternatives may have on resource management. First, an alternatives may lead to better information about total bycatch mortality; second, revenues from overages collected under Alternative 2 may act as a grant to Alaska for investments in DSR management; third, the additional costs of full retention may cause some fishermen to alter their fishing patterns to avoid concentrations of DSR.

Many of the benefits from the alternatives will depend on the information they generate about the extent of bycatch discard mortality and the impacts that this information will have on decision making about the appropriate rate to use for estimating discards in the "other groundfish" and halibut fisheries. As noted earlier, the rates currently used do not have a strong scientific foundation.

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[58] As noted in Section 2.1 of the EA, there are serious legal questions about the viability of Alternative 2.

[59] It may or may not be desirable to prohibit non-profit sale of the excess DSR. Sale of DSR in a "fish feed"might be a community event raising money for charitable purposes.

The current approach to DSR management gives an effective priority to estimated incidental catch of DSR in the halibut fishery (see Table 9). If it turns out that the incidental catch is significantly greater than currently estimated, the directed fishery allocation may be reduced or eliminated to prevent the risk of overfishing. However, if the true mortality is lower than currently estimated, then the directed fishery allocation may be increased.

As noted earlier, managers believe that the true mortality rate is higher than the rate used for estimating bycatch. This suggests that estimated halibut incidental DSR catches are more likely to increase than decrease. Moreover, there is a factor peculiar to Alternatives 2 and 3, that would also contribute to this result. Because it is likely that some persons will not fully comply with the full retention rule, managers will never be sure that all the DSR bycatch has been accounted for. This means that even if, under the alternative, incidental catch deliveries were less than anticipated, managers could not assume that the bycatch rate was less than the rate previously used to estimate bycatch (because there is always the chance that some DSR were discarded illegally). The same problem would not occur if incidental catch deliveries were greater than expected. This issue would not arise under Alternative 4, the observer alternative.

A second factor that may contribute to resource health under Alternative 2 is the revenue that may be provided for DSR management.[60] Under Alternative 2, revenues from overages, which would otherwise have been paid to fishermen, will be deposited in an account in the Alaska Fish and Game Fund and be earmarked for DSR management. It is impossible to predict accurately what the total amount of these revenues would be. A high estimate, using the highest annual estimate of discard mortality since 1993, assuming perfect compliance, and the highest average price received for incidental catch since 1996, is $638,000; a low annual estimate, assuming the lowest estimate of discard mortality since 1993, a 50% compliance level, and a fillet price, is $27,000. An intermediate annual estimate, using the average bycatch mortality from 1993 to 2001, a 75% level of compliance, and an average price since 1996, is $221,000.[61] The extent to which deposits into the Fish and Game Fund will actually increase revenues for DSR management will depend on the extent to which the State may respond to the additional income in this fund by spending money it might otherwise have spent on DSR management on other things.[62]

While Alternative 2 earmarks the DSR overage revenues for use in fisheries management, this is not the only possible use for these funds. They could be retained by the Federal government and deposited in its general funds, or used in other ways. The highest valued use of additional revenues may not be DSR management. It may not be in fisheries management at all. When these funds are earmarked for DSR

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[60]As noted in Section 2.1 of the EA, there are serious legal questions about Alternative 2, and it may not be viable.

[61]These crude estimates are meant to suggest the range of possible revenues, rather than to make a prediction. The price of $0.50 was used in the intermediate scenario to reflect the opportunities fishermen have under the State system to assign their lower priced DSR to the overage and to assign their higher priced poundage to meeting the MRA.

[62]In this regard it should be pointed out that Alaska is widely expected to face a fiscal crisis in the next few years and State agencies may find themselves strapped for funds. Whether the current proposal would make it easier for Alaska to move DSR money to other purposes, or will allow Alaska to keep DSR funding up despite the funding crisis is impossible to say.

management, the government's ability to allocate its revenues to their highest and best use may be limited.

However, by earmarking these funds for Alaska's Fish and Game Fund, the Federal DSR full retention program becomes fully consistent with the Alaska full retention program. The paperwork burden on fishermen landing incidental catch of DSR would be reduced, the complications of the DSR overage program would be reduced for fishermen, processors, and managers, and NOAA enforcement would experience a reduced paperwork burden. These benefits may offset the costs to the Federal government from the reduced flexibility in its disposition of the funds. Precedent for earmarking to the Alaska Fish and Game Fund is also available. Bycatch overage revenues from lingcod and black rockfish caught in Federal waters are currently deposited in this fund, as are trip limit overages in the directed DSR fishery.[63]

The third mechanism by which Alternatives 2 or 3 may contribute to the health of the DSR stocks is by prompting some fishermen to change their fishing patterns so as to reduce DSR bycatch, and the costs of handling, storing, and delivering it. It is impossible to determine how likely this response will be.

Although these alternatives may lead to improvements in resource management, the benefits from these improvements are likely to be delayed for a long time. Of course, if bycatch estimates are currently too high, the benefits of increased DSR availability in the directed fishery may be received in a few years. But as pointed out above, this is relatively unlikely. The other sources of improved DSR management would produce their benefits in the form of increasingly healthy and productive stocks. But it may take a long time for these benefits to be received. As noted in Section 1.2 in the EA, rockfish grow slowly, and stocks "are slow to recover once driven below the level of sustainable yield." Moreover, yelloweye rockfish, which account for the bulk of the harvest, don't become sexually mature until they are 15 years old. Thus benefits from improved mortality accounting may not be felt for many years and, according to standard benefit-cost analytical methods, may have to be heavily discounted (depending upon the true social rate of time preference). Discounting is not conducted explicitly in this RIR, which is primarily qualitative. However, to provide an understanding of the potential impact of discounting, note that the value of $1.00 after 15 years, discounted using the current rate recommended by the U.S. Office of Management and Budget (OMB), is $0.67.[64] The value of a discounted dollar in subsequent years would be even less. There are convincing arguments within the professional literature which suggest that real rates of social time preference may be much smaller than those recommended by OMB and, indeed, when the risk of extinction of a species exists, the true rate may be negative, under some circumstances.

Non-use benefits

Non-use, or passive-use, benefits are the benefits received by persons who value the continued existence of a species or of some attribute or attributes of a natural environment. People do not need to use (for example, by viewing or consuming) the resource, and need not expect to use the resource, in order to

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[63]Marshall, Scott. Letter from Scott Marshall, Southeast Regional Supervisor, Commercial Fisheries Division, Alaska Department of Fish and Game, to Southeast seafood processors. November 16, 2000, page 2.

[64]This "present value" is calculated by interpolating between 10 and 30 year real rates recommended by the U.S. Office of Management and Budget to obtain a 15 year real rate of 2.675%. (Daniels).

derive non-use benefits. Activity undertaken by many persons to preserve endangered species, and the results of survey research, suggest that, in many instances, a substantial value is placed on the continued existence of a species.

Non-use benefits flowing from a reduction in the risk of extinction are not likely to be significant in this instance. The fishery is managed conservatively. The exploitable biomass estimate is conservative (exploitable biomass estimates are "...based on the sum of the lower 90% confidence limits of biomass estimates from each management area."). Moreover, managers believe that they are taking about 2 percent of the exploitable biomass of the DSR stock in the SEO annually. They believe that this level of exploitation is sustainable for the SEO as a whole. Yelloweye tend to remain in one area, however, and this may create the possibility of localized overfishing. This may be occurring, for example, on the Fairweather Grounds. However, overall, the stock does not appear to be in danger of extinction at this time (O'Connell, Carlile, and Brylinsky 2001, p. 9-11).

Benefits to commercial fishermen and DSR buyers and distributers

Experience with Alaska's DSR full retention program, and comments from fishermen contacted for this analysis, suggest that the amounts of DSR incidental catch delivered and weighed will increase under this program. This should improve the information on bycatch mortality. On the other hand, it is also unlikely that all fishermen will fully comply with the program all the time. Persons familiar with the Alaska program do not believe that there is 100 percent compliance with that program. As noted earlier, there are costs associated with retention and delivery of the DSR. These costs will not be offset by the opportunity to sell all the DSR that are delivered. Therefore, it is likely that at least some fishermen will not fully comply with the program.

The benefits from the improved estimates of DSR bycatch mortality are hard to determine. In part, this is because they will depend on the content of the new information (which, by definition, is unknown now), and on what policy decisions are made based on that improved information. One approach is to guess at what the benefits might be by assuming that the value of the annual DSR harvest increases because of the rule. A crude analysis of this type is of limited usefulness. It does however provide a potential benchmark against which to evaluate the E.O. 12866 significance criterion of a $100 million impact.

Using this approach, we can estimate that the gross value of the directed harvest and incidental catch harvest of DSR from 1996 to 2001 averaged about $820,000 a year (from Tables 7 and 9). A 10 percent increase in the revenues would generate about $82,000 per year, a 20 percent improvement would generate $164,000 a year. A 50 percent increase would generate about $410,000 per year. These estimates have to be qualified by two important factors: (1) they are estimates of gross and not net revenues; (2) DSR are a slow growing species and the benefit from the improved information might not be felt for many years.

Fishermen in the directed fisheries are currently required to discard their DSR bycatch over the 10 percent MRA. The fish would be valuable if they could be sold. The fish cannot survive release, once brought to the surface, so discarding doesn't preserve them for growth, reproduction, or future harvest. Several respondents have indicated that fishermen forced to discard their DSR are frustrated by the waste. The fish are bright red and remain floating behind the vessel as they are discarded. In some cases

large numbers of them are left floating. The visibility of the fish after discarding must be an unusually potent reminder of the waste.[65] Alternative 2 would eliminate the discard requirement, and in fact, make it illegal to discard the DSR. The elimination of waste is one of the stated objectives of the proposal and the satisfaction to fishermen of no longer being forced to waste the fish would be one of its benefits. This benefit would not, however, accrue to the same extent under Alternative 3, which does not allow the fish to enter the stream of commerce, although it does permit personal and/or charitable uses of the DSR in excess of the saleable 10 percent DSR MRA. Alternative 3 may force fishermen or processors to dispose of some DSR, rather than to turn it to some human use. This benefit would not accrue from the observer alternative. Under that alternative, fishermen would still be subject to the 10 percent DSR MRA and would be required to continue to discard DSR in excess of 10 percent.

In July 2001 the State of Alaska initiated a full retention requirement for DSR caught within its waters. These waters include the inside districts of Southeast Alaska, but they also include waters of the SEO within three miles of shore. Fishermen fishing off of Southeast Alaska routinely fish inside Alaska waters and outside of Alaska waters on a single trip. Thus, they are subject to two conflicting DSR bycatch handling requirements. In Federal waters they are required to discard all DSR over 10 percent of the weight of the targeted species they have onboard. In State waters they are required to retain all DSR. The conflict between the State and Federal regulations, both of which may apply during some portions of a single trip, creates uncertainty for fishermen. They cannot weigh their fish at sea and must make estimates on delivery of the volumes taken in State and in Federal waters. Errors can easily enter into these estimates and place them in apparent violation of the Federal no retention rule. Alternatives 2 and 3, the full retention alternatives, would provide consistency between Federal and State rules on this issue. This is not a benefit accruing from Alternative 4, the observer alternative. State and Federal regulations with respect to the discard of DSR bycatch would still be in conflict. Information from observers might be useful to clarify the location of DSR bycatch for the 30 percent of fishing days that are observed, but there would be no information on the 70 percent of days that were not observed.

The full retention alternative may simplify the paperwork for fishermen delivering DSR as incidental catch on directed trips for halibut or for other groundfish species in Federal waters. Currently these fishermen are paid for their full catch and are expected to rebate any income from DSR over the MRA to Federal enforcement officers in response to a subsequent request (these requests may come many months later). Under the full retention alternative currently in use for the State fisheries, processors pay the fisherman for the DSR under the retained incidental catch limit at the time of delivery, and subsequently deliver a check for the balance of the DSR directly to the State for deposit in the fishery fund. The State's approach, which is likely to be adopted under Alternative 2, is simpler, reducing the paperwork effort for the fisherman, and making it somewhat easier for the fisherman to settle with his or her crew.[66] [67] Under Alternative 3, the excess DSR are not allowed to enter the stream of commerce, and a rebate procedure should not be necessary. Under Alternative 4, the observer alternative, the current methods of handling overages would not be changed.

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[65]Falvey, Fugulvog, *supra*, note 30; Paust, note 38, O'Connell, note 26.

[66]Falvey, *supra*, note 30; Behnken, note 32, Pearson and McElhose, *supra*, note 37.

[67]The Federal procedure is more fully described in the description of the incidental catch fishery in Section 4.6, while the State's approach is discussed in the description of the State's full retention program in the same section.

Benefits to sport and subsistence fishermen

As noted earlier, sport fishermen harvest DSR in Southeast Alaska, and to some extent in the SEO. DSR are often taken as incidental catch in directed sport fisheries for salmon, halibut, and lingcod. They are also taken by a directed DSR sport fishery.

It's difficult to see a clear benefit to sport fishermen from any of these proposals. Better information and the better management that results should improve the biological health of the fishery. This might increase sport catch-per-unit-of-effort (CPUE) and increase the satisfaction from sport fishing. On the other hand, much of the sport fishing takes place within State waters, and, since DSR tend to have a localized distribution, an improvement in SEO stocks may not have a large impact on stocks harvested by sport fisheries. Management of the sport fishery is not tightly tied to and dependent on management of the Federal commercial fishery. Moreover, DSR are slow growing; thus, biological benefits and increased CPUE might take years to manifest themselves in the sport fishery.

A full retention requirement in the commercial fishery might have an intangible benefit, however, in that it could improve the public perception of the commercial fishery, especially in the eyes of the sport fishing community. When sport fishermen observe commercial operators throwing DSR over the side, and see DSR carcasses floating behind a commercial boat, tensions and bad feelings between the groups may be heightened. If this highly visible discarding practice is eliminated, both groups may gain.

Subsistence impacts may differ from sport impacts, because a significant part of subsistence consumption is being diverted from commercial landings. Alternative 1 is the status quo and the baseline, and will not provide any additional benefits for subsistence fishermen. Alternative 2 will lead to increased DSR deliveries from the directed halibut and groundfish fisheries. Fishermen have the option of using this fish themselves or for gifts, or of selling it and transferring the proceeds to the state. This option should increase the DSR available for subsistence purposes from these fisheries. Alternative 3 will lead to increased DSR deliveries from the directed halibut and groundfish fisheries, but fishermen or processors will not be allowed to sell the excess. This constraint on the marketing of excess DSR may make fishermen less likely to comply with this alternative than with alternative 2 leading to smaller deliveries of excess DSR than under Alternative 2. On the other hand, they have fewer options for use of the excess DSR they deliver than under Alternative 2, and fewer opportunity costs to using it for subsistence purposes. This option should increase the DSR available for subsistence purposes from the halibut and groundfish fisheries over the status quo. Alternative 4 will not affect the amounts of DSR bycatch being brought to shore by commercial fishermen. In the long run, subsistence harvesters should benefit from Alternatives 2, 3, or 4 as better information and management benefits DSR stocks.

Potential benefits to consumers

Consumer benefits from a good or service are generally measured by the excess of the amount people would be willing to pay for the good or service over and above what they do have to pay for it.[68] The benefits to consumers from the full retention program would be measured by any increase in this

[68]The technical term for this is "consumers' surplus."

"excess" through time associated with management changes based on the new information learned through the program.

New information should lead to resource productivity increases through time and thus increased consumer benefits, but the actual size of these benefits is impossible to predict. As already noted, the information that will be produced is unknown, and the management changes that will follow from it are also unknown. Furthermore, projections of benefits cannot be made without better data on the DSR market. As noted previously in this discussion of benefits, DSR are slow growing, and the benefits may not be received for many years.

In the short run, Alternative 2 may be associated with changes in the marketing of fish. DSR bycatch that was formerly discarded will now be delivered to shore from March 15 to November 15. Under Alternative 2 it could enter the stream of commerce, while under Alternative 3 it could not. Table 8, which shows estimated discarded bycatch, both absolutely and as a percentage of landings, suggests that there could be a large increase in the supply of DSR under Alternative 2 during that period. From 1993 to 2001, estimated discards ranged from 36 percent to 93 percent of landings. Although there are problems with these discard estimates, and they may be higher or lower than actual discards, they certainly suggest that a large number of additional fish, relative to current landings, will be delivered. It is difficult to predict the level of quality of these new deliveries. This increase in the volume of fish could imply increases in both high quality fish for the fresh and frozen round markets, and lower quality fish for the fillet markets. Increases in commercial production would not occur under Alternatives 3 or 4.

Under Alternatives 2, 3, and 4, if new estimates of the DSR discard mortality rate do not match the previous estimates, allocation of DSR may shift from the halibut fishery to the directed DSR fishery, or from the directed fishery to the halibut fishery. If the current estimated bycatch rates are higher than the actual rates, bycatch set-asides may be reduced and volumes in the directed fishery may be increased. Conversely, if the estimated bycatch rates are lower than the actual rates, the bycatch set-asides may be increased and the quota for the directed fishery reduced. This latter possibility is believed to be more likely by fishery managers. The disparity between prices for DSR taken as incidental catch or in the directed fishery for DSR, and the argument that fishermen will have less concern for the quality of incidental than directed catch, suggest that a shift from an incidental catch fishery to a directed fishery implies more product going into fresh and frozen round markets, and that a shift from a directed fishery to an incidental catch fishery means relatively more product going into fillet markets.

Charitable donations in Southeast Alaska may increase under Alternatives 2 or 3. These may provide benefits to some low income consumers. As noted earlier, at least in Sitka one organization is said to be willing to take the product and fillet it for a lunch program conducted under the State program. Charitable donations might increase if larger quantities of DSR were delivered to shore under Alternatives 2 or 3. However, as noted in the discussion of the Alaska full retention regulation in Section 4.6, Alaska Department of Fish and Game sources suggest that relatively little use has been made of DSR for charitable donations under the Alaska program. It is impossible to say, therefore, whether a large number of persons would eventually be served by this program, or to estimate the benefits from it.

4.9 Costs of the alternatives

Alternative 1, the status quo, is treated as the baseline in this discussion. No additional costs are associated with maintaining status quo management. The costs of the full retention and observer options are discussed or estimated using Alternative 1 as the baseline.

Cost of full retention to fishermen and DSR buyers and distributers

Commercial fishermen may respond in different ways to the requirement under Alternatives 2 and 3 that all incidental catch of DSR be retained and landed. Some may change their fishing patterns to minimize their bycatch of DSR. Fishermen who do not change their fishing patterns or who do, but nevertheless take DSR, will be required to retain and deliver them for weighing. Because of the lack of observer coverage in this fishery, some fishermen, faced with the increased costs of full retention and the consequent need to change their fishing patterns, may discard some or all of their DSR bycatch in violation of the regulation.

Some fishermen may change the places they fish to reduce the amounts of DSR bycatch they take during their halibut fishing. DSR are "habitat-specific," and the distributions of halibut and DSR are not correlated. "IPHC longline survey data indicates that bycatch of DSR is highly variable . . . within year by area." (O'Connell et al. 2001, p. 4). Thus, fishermen may be able to reduce DSR bycatch by fishing in new areas. Changes in fishing patterns will likely reduce fishermen's profits from a trip, since they will be operating in ways that they would not have if they had been left unconstrained. For example, they may incur larger fuel costs or they may experience lower halibut CPUE.

Fishermen may continue to fish as before, and comply with the new regulations, by delivering their fish to shore and forfeiting (under Alternative 2) or foregoing (under Alternative 3) the commercial value on all DSR over 10 percent of the weight of their targeted catches. In either case, these fishermen would face increased operating costs. They would have to make provision for storage of the DSR onboard. This may require special facilities to protect halibut or other catch from the DSR spines, and may utilize ice or space that might also have been used for their targeted catch. For many vessels the cost of retaining the DSR may be small. As noted earlier, in the description of the fishery in Section 4.6 of this RIR, on many trips a vessel may not expect to fill its hold to capacity with halibut or other groundfish and retained DSR. In these cases, for vessels icing their catch, and for larger RSW vessels, there may be few costs associated with bringing the DSR to shore and delivering them to the processor. Smaller RSW vessels with limited room on deck for totes may face higher costs. On delivery, offloading and grading may take somewhat more time. Under Alternative 3, DSR brought to shore in excess of the 10% limit will have to be disposed of without sale. Fishermen would be required to utilize the fish for personal use, find a charitable outlet, or to arrange for the discard of the excess after weighing. This effort would impose additional costs on them.

Faced with the costs of storage, handling, and delivery, and with potential cost increases associated with changing their fishing patterns to reduce bycatch, fishermen might choose to violate the full retention requirements (i.e., fishermen may continue to discard some or all of the DSR bycatch). DSR are brightly colored and float after being discarded at sea. This might make it possible to identify vessels discarding relatively large numbers of DSR, if the vessel were found in the area shortly after disposal. In some

instances, crew members might also report illegal discarding. Nonetheless, discards would be difficult for NMFS Enforcement or USCG to monitor.

Alternatives 2 and 3 involve an increase in costs for fish buyers. With the delivery of additional fish, buyers would face additional costs for weighing and for sorting and grading of fish. Additional recordkeeping time would be required to fill out fish tickets and, under Alternative 2, for estimation and delivery of the overage payments to the fishing fund. Under Alternative 3, processors are likely to help vessel owners delivering excess DSR to dispose of this excess. These actions could include allowing employees to fillet and take home excess DSR, adding DSR to their waste streams, or coordinating with donation programs to take excess DSR. Under Alternative 2, processors might recover some of the costs through sale of the product, while under Alternative 3, they could not sell the fish.

New information collected under Alternatives 2, 3, or 4, may lead to reductions in the allowable catches for the directed DSR fishery at the start and end of the calendar year. This would require an additional action through the annual specifications process, and would not be a direct consequence of this action. Nevertheless, if this happened, the commercial fishermen in the directed DSR fishery (and persons diverting the commercial harvest in this fishery to subsistence purposes) would face reduced harvests.

Costs imposed on consumers

Following the adoption of any one of the alternatives to the status quo, there is the distinct possibility that total commercial production of DSR, from this region, could decline. This would be so if the newly acquired fishng mortality data demonstrate that DSR are being overharvested, whether globally or locally, at current TAC levels. In such a circumstance, restrictions might be imposed to reduce the total catch of this species complex. This could, in turn, result in reduced supplies of DSR product to the marketplace and accompanying higher consumer prices. As previously suggested, data on markets, and their price and supply responsiveness, do not currently exist. Therefore, it is not possible, at this time, to quantify these effects. Nonetheless, they may reflect real consumer welfare losses, especially because DSR are primarily marketed domestically.

Observer costs to the fishermen[69]

Alternative 4, (the observer alternative) assumes an extension of the standard model for observer coverage in groundfish fisheries in Federal waters off Alaska. Under that model, fishing vessels over 125 feet long must have observer coverage on 100 percent of their fishing days, vessels from 60 to 125 feet long must have coverage on 30 percent of their fishing days, and vessels under 60 feet are not required to carry observers.[70] Vessel operators contract with private firms to provide the observer coverage and pay for it themselves. NMFS does not have details on the costs of observer coverage to the

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[69]The Canadians face a similar problem with estimating DSR bycatch mortality in their British Columbia fisheries, and have experimented with an observer program to gather additional information. See Haigh *et al.*

[70]The 30% coverage is based extends the model used for observer coverage in the groundfish fleet of vessels between 60 and 125 feet to a fleet of vessels generally under 60 feet fishing groundfish and halibut. The 30% coverage may not provide the appropriate sampling scheme for this different fleet.

fishing operations. However, anecdotal information suggests that fishermen pay about $330 per day for the coverage, and may be required to pay for additional observer travel and logistics as well.

This alternative would extend the standard groundfish observer coverage in two ways: (1) to vessels under 60 feet; (2) to vessels, of whatever size, fishing for halibut. In the SEO, these latter vessels are generally smaller than 60 feet. Neither class of vessel would normally be required to carry observers. However, under this alternative, it is assumed that the vessel classes under consideration here would be required to carry observers on 30 percent of their fishing days, as is currently required of medium-sized groundfish vessels. Consistent with the groundfish model, fishing vessel operators would be required to contract for the coverage with private firms and would pay for the coverage themselves. Under this alternative, fishermen would continue to be subject to the 10 percent DSR MRA; they would be required to discard DSR in excess of that limit.[71]

The daily cost of this alternative has been estimated by assuming a $330/day cost for observer coverage. The total number of fishing days has been estimated as 4,508.[72] With 30% coverage, this fleet of vessels would be carrying observers for about 1,350 days. Thus, the total observer cost for this coverage is estimated to be $446,000, or an average of $1,054 per vessel (assuming 423 vessels). As noted in the footnote below, this is a very crude estimate of their total observer costs.

As noted, the cost estimates above may not include all logistics and transportation expenses incurred by the observers. These expenses would be billed, on top of the assumed $330/day observer costs, to the fishing vessel operators. Moreover, these fishing operations would incur observer related costs that are not directly reflected in the money they must spend on observer coverage, logistics and transportation. For example, fishing vessel operators might have to alter their travel plans and schedules to pick up or drop off observers; observers and their equipment may take up limited deck space while they observe gear setting and retrieval, and record and sample catch and bycatch; observers occupy "living space" aboard, which otherwise may have housed additional crew members. These operational impacts may be reflected in both increased operating expenses and reduced harvests and revenues. These impacts would

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[71]Because of this, the observer alternative does not reduce fishermen's frustration over waste of DSR. Moreover, this alternative does not ameliorate the conflict between the State and Federal regulations DSR retention regulations in the SEO.

[72]The number of fishing days was estimated as follows. Alaska fish ticket records record the dates for the start and end of a fishing trip. This made it possible to estimate the length of each trip. Each groundfish record in the fish ticket database showing harvests from the SEO was treated as a separate trip. It was thus possible to count up the number of days of fishing time. This is clearly a crude approach to this calculation, but it is sufficiently accurate to allow the analysis to address the significance threshold in E.O. 12866 ($100 million). Some potential sources of bias would tend to lead to an underestimate of costs. The approach only looks at trips with groundfish landings; however, halibut vessels appear to have taken at least some trips producing no groundfish landings. These trips aren't counted. Other sources of bias might tend to lead to an overestimate of costs. For example, 359 of the reported days were fished by vessels between 60 and 125 feet. Unless these vessels were fishing for halibut and delivering groundfish (including sablefish) only as bycatch, they would already have been subject to the 30 percent observer coverage requirement. Another source of inaccuracy which might increase the number of trips and lead to an overestimate of costs involved the assumption that each trip was represented by only one fish ticket. It is likely that an unknown number of trips generated more than one fish ticket. A third source of bias leading to an overestimate of costs is the application of the analysis to all SEO activity. Actually, the observer coverage would only apply to days spent fishing in the federal waters of the SEO.

be relatively more severe on a smaller vessel. It is not possible, with available information, to quantify these effects, but they may represent a substantial additional cost of operation for this class of vessels.

The discussion above was predicated on a set of costs that reflect experience in the current 100 percent and 30 percent observed fleets. However, most of the vessels that would be required to carry DSR observers are under 60 feet and have not been required to carry observers before. The costs of supplying certified observers to these small vessels may be higher, on average, than the costs of supplying observers to the larger vessel fleet. There are several reasons for this: (a) working conditions may be more difficult on smaller vessels and observers may require higher wages for working on them, (b) smaller vessels may take shorter but more frequent trips making it necessary for observers to transfer between operations more frequently and increasing logistical and transportation costs, (c) higher costs for moving observers between vessels may make it harder for observer companies to meet the needs of fishermen for observers in a timely manner, (d) increased demands for observers associated with the program may make it harder for observer companies to supply them.

In addition to the privately borne costs of the observer program, just discussed, the public willalso face additional costs. An increase of 1,350 fishing days spread over eight months of open IFQ fisheries, is likely to require additional observers. These observers will have to be trained, partly at public expense. In addition, the additional observing activity will make it necessary to spend more time debriefing observers and entering observer data. If additional funding for these activities is not forthcoming, the cost would be incurred as a reduction in other services provided.

This alternative would implement observer coverage on halibut and groundfish fishing vessels in the SEO in order to gather DSR bycatch data. However, there may be other reasons to expand or alter observer coverage. For example, observer coverage on halibut vessels, including the vessels under 60 feet, has been investigated as a method of monitoring the bycatch mortality of the short-tailed albatross. This seabird has been identified as endangered by the U.S. Fish and Wildlife Service under the provisions of the Endangered Species Act (Geernaert et al. 2001).

This has two implications. First, it may be premature to implement observer coverage in this fishery for the purpose of monitoring DSR bycatch mortality alone. A piecemeal approach to alterations in the observer program may be inappropriate, making the ultimate change more costly, and perhaps starting the changes down a path that might need to be altered as other issues are considered. It may be more appropriate to pursue an observer alternative as part of a broader change in the approach to observers in the GOA and BSAI. Second, in this analysis the costs of the observer program in the SEO are being balanced against the benefit flowing from better information on DSR bycatch mortality. There may well be other benefits from observer coverage that would be considered in a more comprehensive approach.

4.10 Summary of the significance criteria

A "significant regulatory action" under E.O. 12866 means any action that is likely to result in a rule that may:

- 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;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the executive order.

The combined value of the incidental catch and directed harvest of the DSR is typically less than a million dollars. As noted earlier, if the information led to improvements in management and subsequently increased the annual value of the DSR harvests by 50 percent, the total increased gross ex-vessel value would only be about $410,000. The increase in net value would be less. The potential cost of the full retention alternative was unknown. The estimated cost for the observer program is on the order of $446,000 (although this was identified as a likely underestimate). None of these changes, even with large adjustments made for the purpose of a sensitivity analysis, would appear to have the potential to result in ". . . 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 . . ."

NMFS has not identified any factors that would (a) "Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency"; (b) "Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof"; or (c) "Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the executive order."

5.0 INITIAL REGULATORY FLEXIBILITY ANALYSIS

5.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) reviews a regulatory action that would improve information on demersal shelf rockfish (DSR) bycatch mortality in the targeted halibut and groundfish fisheries in Federal waters in the Gulf of Alaska off of Southeast Alaska.

5.2 The purpose of an IRFA

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action.

On March 29, 1996, President Clinton signed the Small Business Regulatory Enforcement Fairness Act. Among other things, the new law amended the RFA to allow judicial review of an agency's compliance with the RFA. The 1996 amendments also updated the requirements for a final regulatory flexibility analysis, including a description of the steps an agency must take to minimize the significant economic impact on small entities. Finally, the 1996 amendments expanded the authority of the Chief Counsel for Advocacy of the Small Business Administration (SBA) to file *amicus* briefs in court proceedings involving an agency's violation of the RFA.

In determining the scope, or 'universe,' of the entities to be considered in an IRFA, NMFS generally includes only entities that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis. NMFS interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and that focus is reflected in analyses that are designed to address RFA compliance.

Data on cost structure, affiliation, and operational procedures and strategies in the fishing sectors subject to the proposed regulatory action are insufficient, at present, to permit preparation of a "factual basis" upon which to certify that the preferred alternative does not have the potential to result in "significant adverse impacts on a substantial number of small entities" (as those terms are defined under the RFA). Because, based on all available information, it is not possible to 'certify' this outcome, should the proposed action be adopted, a formal IRFA has been prepared and is included in this package for Secretarial review.

5.3 What is required in an IRFA?

Under 5 U.S.C., Section 603(b) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

    1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;

    2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;

    3. The use of performance rather than design standards;

    4. An exemption from coverage of the rule, or any part thereof, for such small entities.

5.4 What is a small entity?

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a 'small business' as having the same meaning as 'small business concern,' which is defined under Section 3 of the Small Business Act. A 'small business' or 'small business concern' includes any firm that is independently owned and operated and not dominant in its field of operation. The SBA has further defined a "small business concern" as one "organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor . . . A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the firm is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture."

The SBA has established size criteria for all major industry sectors in the United States, including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $3.5 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the $3.5 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established "principles of affiliation" to determine whether a business concern is "independently owned and operated." In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party, with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern's size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805, are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership under the following conditions: (1) If a person owns or controls, or has the power to control, 50 percent or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, that person is considered an affiliate of the concern; or (2) If two or more persons each owns, controls or has the power to control less than 50 percent of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors or general partners controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such a relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations. The RFA defines "small organizations" as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of fewer than 50,000.

5.5 What is this action?

The alternatives considered for this action are described in Section 2.1 of the environmental assessment (EA), and are summarized again in Section 4.5 of the Regulatory Impact Review (RIR). In February 2003, the Council chose Alternative 3 as its preferred action. Alternative 3, which requires full retention, but which doesn't allow the excess DSR to enter the stream of commerce, has the following four components:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained and landed. Catcher/processors would continue to observe current maximum retainable amounts (MRAs) for DSR.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Allow retention of any DSR in excess of the amount that may be sold for any use except for sale, barter, or trade.

5.6 Reason for considering the proposed action

A complete description of the purposes of this proposed action can be found in Section 1.0 of the EA, and a somewhat shorter description is in Section 4.4 of the RIR. As noted in the RIR, fishermen catch DSR in fisheries targeted directly on DSR. They also catch it in other fisheries, particularly those for halibut, as a by-product. The annual DSR Total Allowable Catch (TAC) is divided between the targeted DSR fishery and incidental catch in the halibut fishery (and other groundfish fisheries). To prevent fishermen in the halibut and other groundfish fisheries from exploiting loopholes in the rules that could permit covert targeting of DSR, they are currently required to discard DSR taken in excess of 10 percent of the weight of the targeted species which they have onboard. However, this regulation creates three problems: (1) DSR sustain injuries when brought to the surface that result in 100 percent mortality, so that discarding is perceived by many fishermen and managers as wasteful; (2) the discards are not adequately reported, so managers have poor information about the total levels of discard mortality; (3) State and Federal regulations governing the treatment of DSR bycatch, which is often taken in Federal and State waters on the same trip, are not consistent.

Because of the discard requirements, total bycatch mortality of DSR in the halibut and groundfish fisheries is unknown. This creates a risk of overfishing the DSR stock. Data from the proposed full

retention program would be used to: (1) obtain information about bycatch and bycatch rates for DSR; (2) calculate total mortality; (3) enhance the DSR stock assessment and refine estimates of allowable biological catch (ABC) and (TAC); and ultimately, (4) revise the DSR MRA accordingly, unless a decision is made to continue the full retention program indefinitely.

5.7 Objectives of, and legal basis for, the proposed action

As noted in the EA and the RIR, the objectives of this action are:

1. To improve the gathering of information on the bycatch of DSR in the halibut longline fishery and other fisheries in the SEO, in order to get a more accurate picture of DSR mortality and to enable biologists to improve the annual stock assessments.

2. To avoid, in the process of implementing a full retention program, either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold.

3. To minimize waste to the extent practicable while meeting these goals.

4. To achieve consistency between State and Federal regulations that govern the retention and disposition of DSR harvested in the SEO.

The legal basis for the proposed action was discussed in Section 4.2 of the RIR that accompanies this IRFA.

5.8 Number and description of small entities directly regulated by the proposed action

What are the regulated entities?

The preferred alternative would regulate catcher vessels fishing for halibut or for groundfish with hook-and-line gear and jigs in Federal waters in the SEO. Vessels fishing only in State waters in the SEO would not be regulated by this alternative. Vessels fishing in both Federal and State waters would not be regulated while fishing in State waters. The vessels targeting DSR during the directed DSR fishing season from January 1 to March 14, and from November 16 to December 31, would not be directly regulated by this proposal. Catcher/processors would not be regulated by this alternative.

The preferred alternative would also regulate entities buying fish from vessels delivering DSR as bycatch. Under its provisions, these entities would not be allowed to subsequently sell DSR purchased from a fisherman in excess of the limit imposed by the 10% restriction on the fisherman's permitted sales.

Number of small regulated entities

As noted in the RIR, an estimated 423 vessels were active in the halibut and groundfish hook-and-line fisheries in the Federal waters of the SEO in 2000. Almost all of these (all but five) were catcher vessels. Each of these vessels has been assumed to represent a separate entity (estimates based on NMFS Catch by Vessel Dtabase and RAM halibut fishing statistics).

As noted earlier in the IRFA, a small fishing entity is a vessel that annually grosses less than $3.5 million in all of its combined operations, including the operations with which it may be affiliated. It is currently impossible, however, to determine how much these fishing vessels gross in all of their operations, or to identify the affiliations between them and other entities. The best source of information on the size classification of groundfish fishing entities in the GOA are tables prepared by the NMFS Alaska Science Center and published in the annual Groundfish Economic SAFE document. These indicate that all hook-and-line groundfish vessels in the GOA are small entities (Hiatt et al., 2002). There are good reasons to believe that these tables understate the numbers of large entities.[73] However, in the absence of better information, all of the entities potentially taking DSR bycatch in Federal waters of the SEO are treated here as small entities.

Landings records indicate that between 17 and 26 shorebased buyers in Southeast Alaska purchased DSR between 1996 and 2001. The median and modal numbers of firms were both 21.[74] The threshold for large seafood buyers and processors is 500 employees. In taking account of the numbers of employees, affiliations between entities should be accounted for. That is, a firm that employs fewer than 500 persons would be a large entity if it were affiliated with another firm that employed more than 500; or with two affililated firms that between them employed more than 500. Firm level data on the numbers of employees and information about the affiliations between entities is not readily available. For this purpose of this analysis, these shoreside processors are assumed to be small entities.

Description of small regulated entities

This fishery was described in the RIR, Section 4.6. The fleet is largely composed of catcher vessels under 60 feet, primarily fishing hook-and-line gear for halibut. Other groundfish species are taken as well. Sablefish may be targeted separately from halibut; other groundfish are probably taken largely incidentally. This fleet generated an estimated $33 million in gross revenue from its harvests in the Federal waters of the SEO during 2000. Average gross revenues were about $79,000 per vessel. Almost all of the revenues from the Federal SEO waters were generated by halibut and sablefish. Sablefish revenues were about $21 million, while halibut revenues were about $12 million. Fishing in the SEO was only a part of the fishing activity by these vessels. Gross revenues for these vessels, from all groundfish and halibut fisheries off Alaska in 2000, were $111 million, or about $262,000 per vessel. In

[73]Perhaps the strongest reason for this is that the categorizing of large and small entities is done solely by considering revenues from groundfish fishing. These vessels are almost all also involved in fishing for other species in Alaska and these revenues have not been considered here. These tables are known to be subject to other shortcomings as well. They do not take account of revenues that may have been earned in fisheries outside of Alaska, and they do not take account of possible affiliations between vessels, or between vessels and processors.

[74]Terry Hiatt. NMFS, Alaska Fisherie Science Center. Personal communication, Sept. 27, 2001.

addition to significant statewide revenues from sablefish ($54 million) and halibut ($45 million), these vessels obtained large revenues from Pacific cod ($9 million). DSR incidental catch revenues for 2000 in the SEO (estimated in Table 9) were about $176,000; total statewide DSR revenues (from incidental catch and directed harvests) were about $793,000 (estimated from Tables 7 and 9). These revenue estimates only include revenues from groundfish and halibut; many of these entities would also have earned revenues from other fisheries, of which Alaska's salmon and herring fisheries were probably most important. DSR incidental catch revenues were about 0.16% of the fleet's total statewide groundfish and halibut revenue; if probable herring and salmon revenues are also considered, DSR incidental catch revenues are even a smaller percentage of overall revenues. DSR incidental catch revenues in the SEO were about 0.53% of the fleet's groundfish and halibut revenues from Federal waters in the SEO.

Shoreside processors buying DSR also bought other groundfish, halibut, salmon, herring and crab. In 2000, the 22 firms processing groundfish in Southeast Alaska, had total gross revenues from all fish processing activities of about $262 million, or an average per plant of about $12 million. Several larger plants dominate the average calculation; the median gross revenues were about $5 million. Groundfish (which does not include halibut) were a relatively minor component of the processing activity, accounting for about 20% of aggregate firm gross revenues. Total groundfish revenues were about $52 million, or about $2.4 million per plant. The importance of groundfish varied across firms. Nine firms earned more than 10% of their gross revenues from groundfish, while five earned between 30% and 50% of their revenues from groundfish. No plant made more than 50% from groundfish. In comparison, the total first wholesale value of DSR products in 2000 (processed by 19 plants) was about $1.2 million, or about $60,000 per plant.[75]

5.9 Adverse economic impacts on small entities

Under Alternative 3, fishermen will be required to retain and deliver to shore all DSR bycatch. As the estimated bycatch discard column in Table 8 suggests, this could be on the order of 150 to 350 metric tons annually, spread over the eight month IFQ fishing season. Fishermen may experience increased costs associated with handling the additional DSR, of storing them on the vessel until it reaches port, and of unloading and disposing of the fish. Some fishermen may incur additional costs by changing their fishing patterns for their target species in order to avoid DSR bycatch. Handling and delivery costs would primarily take the form of increased work effort required on the vessel. Costs may be higher on smaller RSW vessels which lack deck space for special DSR totes, or on vessels that would otherwise have filled their holds with their target fish, but are unable to do that, given the need to retain a larger amount of DSR. Fishermen will also face costs of disposing of the excess DSR onshore. They will not be allowed to sell it; they may use it for personal use, donate it for charitable purposes, or discard it.

The primary effect of Alternative 3 would be on the operations of these entities during their halibut fishing operations in Federal waters in the SEO. As noted, this fleet earned about $12 million (about $28,000 on average) of its $110 million (about $262,000 on average) halibut and groundfish total statewide gross revenues from this part of its activities. The actual average statewide fishing revenues were almost certainly larger than $110 million since many of these vessels are likely to be active in

[75]Terry Hiatt. NMFS, Alaska Fisheries Science Center. Personal communication2, Sept. 27, 2001, and Dec. 12, 2002..

Alaska's salmon and herring fisheries. Thus 11% ($28,000/$262,000) is a high estimate of the percentage of the total gross revenues these operations obtain from halibut fishing in Federal waters in the SEO.

Small processors would face the costs of weighing and recording additional DSR that may be landed. They are likely to play a role in helping vessel owners delivering excess DSR to dispose of this excess. These actions could include allowing employees to fillet and take home excess DSR, adding DSR waste to their waste streams, or coordinating with donation programs to take excess DSR. Processors would no longer be able to sell excess DSR from federal waters. Table 3 suggests that this was about ten metric tons in 2001 (the largest annual volume listed). Using the bycatch ex-vessel round price for 2001 from Table 9, this implies gross revenues foregone from this source of about $16,000.

5.10 Recordkeeping and reporting requirements

The IRFA should include "a description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record . . ."

The Council's preferred alternative does not impose new recordkeeping or reporting requirements on the regulated small entities.[76]

5.11 Federal rules that may duplicate, overlap, or conflict with proposed action

An IRFA should include "An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule . . ."

This analysis did not reveal any Federal rules that duplicate, overlap or conflict with the Council's preferred alternative.

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[76]The focus of the IRFA is on adverse impacts on regulated entities. However, as noted in the discussion of benefits to the commercial industry in Section 4.8, the preferred alternative may reduce some paperwork burdens for regulated commercial fishermen. Currently fishermen with overages are paid for those overages. The money is then turned over to the Federal government in response to a "summary settlement offer." Under Alternative 2, the fish buyer would likely turn the payments for the overages over to the State of Alaska, directly, without involving the fishermen (Falvey, *supra*, note 30 Behnken, note 32). Note also, however, that some recordkeeping requirements for entities not directly regulated (fish buyers) may increase under Alternatives 2 or 3 (Pearson, *supra*, note 37).

5.12 Description of significant alternatives

An IRFA should include "A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities."

This EA/RIR/IRFA has evaluated four alternatives: (1) the status quo, (2) full retention allowing excess DSR to enter the stream of commerce, (3) full retention prohibiting excess from entering the stream of commerce, and (4) use of an observer program. The Council has chosen Alternative 3 as its preferred alternative. Table 11 compares the four alternatives analyzed in this EA/RIR/IRFA on the basis of the ability of each to achieve the objectives of this action. As noted earlier, these objectives are::

1. To improve the gathering of information on the bycatch of DSR in the halibut longline fishery and other fisheries in the SEO, in order to get a more accurate picture of DSR mortality and to enable biologists to improve the annual stock assessments.

2. To avoid, in the process of implementing a full retention program, either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold.
3. To minimize waste to the extent practicable while meeting these goals.

4. To achieve consistency between State and Federal regulations that govern the retention and disposition of DSR harvested in the SEO.

Table 11. Comparison of the alternatives

Alternative	Does this alternative have adverse impacts on small entities?	Did this alternative meet the objectives of the action?	Why wasn't this alternative selected?
Alt 1 - the status quo	This is the baseline alternative and imposes no new adverse impacts on small entities.	Provides no new information on status of DSR stocks. Does not increase incentives for targeting DSR. Continued waste. Continued conflict between State and Federal regulations.	This alternative does not meet the action objective of providing better information on DSR bycatch mortality in the SEO. Nor does it meet the objectives of reducing waste and increasing consistency between state and federal regulations.
Alt 2 - full retention - possible disposal over 10% to buyers or processors	Fishermen face additional costs of storage, reduced space for target species, delivery, unloading, weighing and disposal.	Provides new information on status of DSR stocks. Does not increase incentives for targeting DSR. Reduces waste of DSR. Reduces conflict between State and Federal regulations.	This was the Council's original preferred alternative, but Alt. 3 was adopted in its place, after NOAA General Counsel identified serious legal issues with Alt. 2. The key problem is that Alt. 2 appears to exceed the authority granted to NMFS under the MSA. This issue is discussed in Sec. 2.1 of the EA and in detail in Appendix to this EA/RIR/IRFA.
Alt 3 - full retention - DSR over 10% limit cannot enter the "stream of commerce"	Fishermen face additional costs of storage, reduced space for target species, delivery, unloading, weighing and disposal. Processors would no longer be able to sell fishermens' excess DSR. Processors are likely to become involved in helping fishermen to dispose of excess DSR.	Provides new information on status of DSR stocks. Does not increase incentives for targeting DSR. May **not** reduce waste of DSR to the same extent as Alternative 2. Partially reduces conflict between State and Federal regulations.	This was adopted by the Council as its preferred alternative at its February 2003 meeting.
Alt 4 - observers	Fishermen face additional costs for observer, including travel and logistical expenses for observers, and an additional cost of about $330/day for 30% of days at sea.	Provides new information on the status of DSR stocks. Does not increase incentives for targeting DSR. Does not reduce waste of DSR. Does not reduce conflict between State and Federal regulations.	This would extend the groundfish observer program to a vessel size class (<60 feet) and a target species (halibut) for which the program was not designed. Fishermen would be responsible for paying for observer coverage. Non-monetary costs of carrying observers on small vessels may also be burdensome.

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APPENDIX A

Explanation of Legal Issues with Council's Preferred Action on DSR

Prepared by GCF and GCAK as Attachment to a September 27, 2002 letter to Council from NMFS

The following describes the legal issues identified by NOAA General Counsel in reviewing the draft proposed rule to require full retention of demersal shelf rockfish (DSR) onboard Federally-permitted vessels participating in the hook-and-line and jig fisheries within Federal waters of the Southeast Outside District (SEO) of the Gulf of Alaska.

The subject regulatory amendment seeks to improve the information collected on the incidental catch of DSR in the hook-and-line and jig fisheries conducted within the SEO of the Gulf of Alaska. According to the draft proposed rule, improved information collection will be used to "more accurately estimate DSR fishing mortality, improve DSR stock assessments, and evaluate whether 10 percent is the appropriate maximum retainable percentage limit for DSR in the SEO." In order to improve the accuracy of the data concerning DSR incidental catch, the draft proposed rule requires full retention and the landing, weighing, and reporting (on State of Alaska fish tickets) of all DSR incidentally caught by federally-permitted vessels fishing for IFQ Pacific halibut or engaged in directed fishing for groundfish with hook-and-line or jig gear in the SEO. Furthermore, to avoid unwanted directed fishing incentives for DSR, the draft proposed rule permits fishermen to sell and keep sale proceeds for retained DSR up to an amount that is equivalent to 10 percent of the aggregate round weight of IFQ halibut and groundfish species open to directed fishing that are landed during the same fishing trip (hereinafter referred to as the "10 percent sale limit"). Amounts of retained DSR that are in excess of the 10 percent sale limit could be disposed of in one of two ways: (1) sell the excess DSR and relinquish all sale proceeds from such excess DSR to the State of Alaska within 60 days, or (2) retain the excess DSR for any use except sale, barter or trade. This second option could include personal use or donation to a non-profit charitable organization.

Although NOAA GC initially thought that the management scheme proposed by the Council was within the rulemaking authority of the Magnuson-Stevens Act (MSA), on review of the draft proposed rule developed by NMFS to implement the DSR measures, serious legal concerns were identified with Option 1 and its extension of MSA authority to the regulation of sale proceeds. While there is no caselaw regarding the extent of MSA authority to regulate the disposition of sale proceeds from legally harvested fish, NOAA GC has determined that such a provision likely exceeds the rulemaking authority provided by the MSA.

The MSA authorizes NMFS to take conservation and management measures "applicable to foreign fishing and fishing by vessels of the United States." 16 U.S.C. 1853(a). The MSA defines "fishing" to include the actual or attempted catching, taking or harvesting of fish, "any other activity which can reasonably be expected to result in the catching, taking or harvesting of fish, or any operations <u>at sea</u> in support of, or in preparation for" the harvesting of fish (emphasis added). 16 U.S.C. 1802(15). Based on these and other provisions, the MSA is focused on harvesters. The Councils and NMFS have interpreted the MSA as providing authority to regulate what a fisherman can do with legally harvested fish as long as conservation and management reasons exist for such regulation. Regulations have been implemented by

NMFS that regulate processing activities by harvesters and at-sea processors, such as the roe-stripping and forage fish regulations in the North Pacific, and regulations that prohibit the sale of legally harvested fish.[77] These activities have been determined to fall within the MSA authority to regulate "fishing." However, regulation of activities that occur after the fish has left the harvester's control is less related to "fishing" and to the MSA's conservation and management goals than to "the business arrangements between processors and harvesters."[78] The draft proposed rule's regulation of proceeds from the sale of legally harvested fish is one step beyond the MSA's fishing focus and the authority granted to NMFS to regulate fishing.

Additionally, if the excess DSR is allowed to be sold to the processor via an ability to relinquish the harvester's proceeds to the State of Alaska, more DSR than contemplated by the 10 percent sale limit could enter the stream of commerce, and could create incentives for arrangements between harvesters and processors that would undermine the rule's objective of discouraging fishermen from targeting on DSR or fishing in areas where high DSR incidental catch is anticipated.[79]

Therefore, Option 1 for the disposal of DSR in excess of the 10 percent sale limit appears to exceed the rulemaking authority of the MSA and should not be part of the draft proposed rule.

Possible modification of the draft proposed rule to circumvent the identified legal issues

NMFS staff asked NOAA GC whether the draft proposed rule could be modified such that the Federal regulations would require full retention of DSR caught in the SEO but contain no provisions as to the disposition of DSR and sale proceeds. Under this Federal regulatory scheme, State of Alaska regulations would require that proceeds from the sale of DSR caught in the EEZ that is in excess of a 10 percent sale limit be relinquished to the State of Alaska. With this modification, NOAA GC examined whether, under the Supremacy Clause of the United States Constitution, the regulatory scheme implemented by the State of Alaska would be preempted by the Federal regulatory scheme in the EEZ.

The Supremacy Clause of the United States Constitution, Article IV, cl. 2, "nullifies state laws that 'interfere with, or are contrary to' federal law." Louisiana Seafood Management Council, Inc. et al. v. Foster, 917 F. Supp 439, 442 (E.D. La. 1996) (*quoting* Gibbons v. Ogden, 22 U.S. 1 (1824)).

State law is found to conflict with an FMP regulation either when dual compliance with the state and federal laws is impossible[80] or when the state law "stands as an obstacle to the accomplishment of the

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[77]See National Fisheries Institute, Inc. v. Mosbacher, 732 F. Supp. 210, 216 (D.D.C. 1990) (upholding NMFS prohibition against sale of legally harvested billfish finding that billfish were in need of conservation and that no-sale provision was rational way to achieve conservation objective).

[78]1989 Memorandum entitled "Limitations on Roe-Stripping," co-authored by GCF and GCAK for the North Pacific Fishery Management Council, at 13.

[79]Compare National Fisheries Institute, Inc. v. Mosbacher, 732 F. Supp. at 216 (Secretary of Commerce reasonably determined that "no-sale" provision would discourage harvest of Atlantic billfish by preventing development of commercial billfish market.)

[80]Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 142 (1963).

full purposes and objectives of Congress."[81] The former test is broad, including literal impossibility of dual compliance as well as scenarios where state standards are more stringent than their federal counterparts. In Vietnamese Fishermen Ass'n of America v. California Department of Fish and Game, 816 F. Supp. 1468 (N.D. Ca. 1993), the court held that a California law prohibiting the use of gill or trammel nets for taking rockfish in federal waters off the coast of California was preempted by a Pacific Council FMP prohibiting the use of such nets only in waters north of 38 degrees north latitude. The court found that, by its silence regarding waters south of this line, the FMP intended to allow gill and trammel nets in this area. The California law, establishing a stricter standard, was thus in conflict with the FMP and therefore preempted by it. Vietnamese Fishermen Ass'n of America, 816 F. Supp at 1475. However, the mere existence of federal regulations in the relevant subject matter does not automatically establish preemption.[82] The existence of an FMP regulation merely opens the way for further analysis of whether state and federal laws conflict.

As explained above, a modified Federal proposed rule would require only that all DSR caught in the EEZ be retained, landed, weighed and reported and there would be no limitations placed on the disposition of such fish or how much of the proceeds from the sale of such fish could be retained by the fisherman. Furthermore, there is an extensive administrative record that demonstrates Federal consideration but rejection of a limitation on the amount of sale proceeds that can be retained by the fisherman that could be used to help interpret any ambiguity as to what the Federal regulatory scheme intended, thus creating an even stronger presumption that no limitations be placed on the disposition of sale proceeds under the Federal regulatory scheme. However, State regulations would require that proceeds from the sale of DSR caught in the EEZ that is in excess of a 10 percent sale limit be relinquished to the State of Alaska. This scenario creates a situation wherein fish that would be required to be retained in the EEZ without any other limitation under Federal law would be required to be sold and the proceeds relinquished to the State of Alaska under State law. A reviewing court may find that the Federal law supersedes the State law because the State law of limiting receipt of sale proceeds could be found to interfere with and be contrary to the Federal law which sets no limit on receipt of sale proceeds and has an administrative record that considered but rejected such a limitation.

This situation is similar to the facts in State v. Sterling, 448 A. 2d 785, 787 (R.I. 1982). In State v. Sterling, a Rhode Island law purported to impose a landing-possession limit on yellowtail flounder of 3,000 pounds per boat per trip, without regard to the area of capture. An FMP regulation governing the fishing of yellowtail flounder in the same region established no per-trip possession or landing limits. Finding the Rhode Island statute in conflict with the FMP regulation, the court held that the state law was preempted.

Given the above, there could be preemption problems with the suggested Federal-State approach to limiting sale proceeds of DSR retained in excess of a specified amount. However, should the Council and NMFS ultimately adopt the modified draft proposed rule as suggested, it would be up to the State of Alaska to determine the defensibility of state regulations that placed limits on the disposition of sale proceeds.

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[81] Hines v. Davidowitz, 312 U.S. 52 (1941).

[82] See State of Alaska v. Painter, 695 P. 2d 241, 243 (Ct. App. Alaska 1985) (no preemption where trial court found state and federal regulations to be "substantially the same.")

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nmollett 9-15-03, 12-10-03
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FINAL REGULATORY FLEXIBILITY ANALYSIS

for a for a Regulatory Amendment for

Full Retention of Demersal Shelf Rockfish in Longline Fisheries
in the Southeast Outside District

September 2004

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Abstract: This Final Regulatory Flexibility Analysis (FRFA) evaluates the small entity impacts of requiring full retention of Demersal Shelf Rockfish (DSR) in the longline fisheries of the Southeast Outside District of the Gulf of Alaska. This FRFA addresses the requirements of the Regulatory Flexibility Act at 5 U.S.C. 604(a).

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Table of Contents

Executive Summary v

1 Introduction 1

2 The purpose of a FRFA 1

3 What is required in a FRFA? 2

4 What is a small entity? 2

5 What is this action? 4

6 Need for and objectives of the rule 4

7 Public Comments 5

8 Number and description of small entities affected by the proposed action 5

9 Recordkeeping and reporting requirements 7

10 Description of significant alternatives 8

List of preparers 10

Literature cited 10

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Executive Summary

This Final Regulatory Flexibility Analysis (FRFA) accompanies a final rule to require full retention by Federally permitted catcher vessels of incidentally caught demersal shelf rockfish (DSR) in the hook-and-line and jig gear fisheries in the Southeast Outside District (SEO) of the Gulf of Alaska (GOA), in order to improve data collection on DSR bycatch in those fisheries.

The current regulations require catcher vessels to discard all DSR bycatch over ten percent of the retained catch of targeted species in the fixed gear fisheries. It is believed that this system leads to a considerable amount of unreported discards. Full retention is expected to improve data collection and enable biologists to conduct more accurate stock assessments. Improved assessments will make it easier to prevent overfishing. The proposed changes in handling incidental catch of DSR are also intended to reduce wastage since DSR do not survive being caught and returned to the sea.

This FRFA addresses the requirements of the Regulatory Flexibility Act at section 604(a).

Purpose and need

Fishermen catch DSR in fisheries targeted directly on DSR. They also catch it in other fisheries, particularly those for halibut, as a by-product. The annual DSR Total Allowable Catch (TAC) is divided between the targeted DSR fishery and incidental catch in the halibut fishery (and other groundfish fisheries). To prevent fishermen in the halibut and other groundfish fisheries from exploiting loopholes in the rules that could permit covert targeting of DSR, they are currently required to discard DSR taken in excess of 10 percent of the weight of the targeted species which they have onboard. However, this regulation creates three problems: (1) DSR sustain injuries when brought to the surface that result in 100 percent mortality, so that discarding is perceived by many fishermen and managers as wasteful; (2) the discards are not adequately reported, so managers have poor information about the total levels of discard mortality; (3) State and Federal regulations governing the treatment of DSR bycatch, which is often taken in Federal and State waters on the same trip, are not consistent.

Because of the discard requirements, total bycatch mortality of DSR in the halibut and groundfish fisheries is unknown. This creates a risk of overfishing the DSR stock. Data from the proposed full retention program would be used to: (1) obtain information about bycatch and bycatch rates for DSR; (2) calculate total mortality; (3) enhance the DSR stock assessment and refine estimates of allowable biological catch (ABC) and (TAC); and ultimately, (4) revise the DSR MRA accordingly, unless a decision is made to continue the full retention program indefinitely.

Comments on the IRFA

The proposed rule was published in the *Federal Register* on January 21, 2004 (69 *FR* 2875). An Initial Regulatory Flexibility Analysis (IRFA) was prepared for the proposed rule, and described in the classification section of the preamble to the rule. The public comment period ended on February 20, 2004. One letter with six comments was received during the comment period. None of the comments were on small entity issues or on the IRFA.

Numbers of small entities

The directly regulated entities are those catcher vessels taking DSR as incidental catch in halibut and groundfish fisheries in Federal waters of the SEO district and the processors buying the DSR from them. NMFS estimates that 423 vessels participated in these fisheries in 2000. Most of these vessels were less than 60 feet in length, fishing with hook-and-line gear and jig gear. Average gross revenues for these vessels from the Alaskan halibut and groundfish fisheries were about $262,000. Average gross revenues from all fisheries for these entities are undoubtedly higher, because these vessels participate in other fisheries in Alaska. In the years from 1996 to 2001, between 17 and 26 plants bought groundfish in Southeast Alaska. In 2000, the average gross revenues for these plants were about $12 million. NMFS estimates that these fishing and processing operations were all "small entities" within the meaning of the Regulatory Flexibility Act.

Recordkeeping and reporting

The Council's preferred alternative does not impose any new recordkeeping requirements on regulated entities.

Alternatives to the proposed action

Three alternatives, in addition to the preferred alternative, were considered. The preferred Alternative was Alternative 3 in the EA/RIR/IRFA.

The status quo alternative imposes no new adverse impacts on small entities. This alternative has fewer adverse impacts on the directly regulated small entities than the preferred alternative. However, this alternative does not meet the action objective of providing better information on DSR bycatch mortality in the SEO. Nor does it meet the objectives of reducing waste and increasing consistency between state and federal regulations.

Alternative 2 is the same as the preferred alternative, except it would permit the sale of DSR in excess of the 10% limit, and regulated the disposition of the proceeds. This alternative would meet the objectives of the action and impose fewer adverse impacts than the preferred alternative, because it would provide fishermen with more options for the disposal of excess DSR. This was the Council's original preferred alternative. However Alternative 3 was adopted in its place, after NOAA General Counsel identified serious legal issues with Alternative 2. Regulation of the disposition of the proceeds from the sale of the DSR likely exceeds the authority granted to NMFS under the Magnuson-Stevens Act.

Alternative 4 would require fishermen to carry 30% observer coverage. Under this alternative, fishermen would face additional costs for observers, including travel and logistical expenses, and an additional cost of about $330/day for 30% of days at sea. This alternative is believed to impose more adverse impacts on directly regulated small entities than the preferred alternative. It would extend the groundfish observer program to a vessel size class (<60 feet) and a target species (halibut) for which the program was not designed. Fishermen would be responsible for paying for observer coverage. Non-monetary costs of carrying observers on small vessels may also be burdensome. The alternative would provide new information on the status of DSR stocks and would not increase incentives for targeting DSR. However, it would not reduce waste of DSR or conflicts between State and Federal regulations.

1 Introduction

This Final Regulatory Flexibility Analysis (FRFA) accompanies a final rule to require full retention by Federally permitted catcher vessels of incidentally caught demersal shelf rockfish (DSR) in the hook-and-line and jig gear fisheries in the Southeast Outside District (SEO) of the Gulf of Alaska (GOA), in order to improve data collection on DSR bycatch in those fisheries.

The current regulations require catcher vessels to discard all DSR bycatch over ten percent of the retained catch of targeted species in the fixed gear fisheries. It is believed that this system leads to a considerable amount of unreported discards, and that better data collection associated with full retention would enable biologists to conduct more accurate stock assessments, so that measures can be taken if necessary to prevent overfishing DSR stocks. The proposed changes are also intended to reduce wastage of DSR. DSR do not survive being caught and returned to the sea.

A proposed rule was published in the *Federal Register* on January 21, 2004 (69 *FR* 2875). An Initial Regulatory Flexibility Analysis (IRFA) was prepared for the proposed rule, and described in the classification section of the preamble to the rule. The public comment period ended on February 20, 2004. One letter with six comments was received during the comment period. None of the comments were on small entity issues or on the IRFA.

This FRFA addresses the requirements of the Regulatory Flexibility Act at section 604(a).

2 The purpose of a FRFA

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action.

On March 29, 1996, President Clinton signed the Small Business Regulatory Enforcement Fairness Act. Among other things, the new law amended the RFA to allow judicial review of an agency's compliance with the RFA. The 1996 amendments also updated the requirements for a final regulatory flexibility analysis, including a description of the steps an agency must take to minimize the significant economic impact on small entities. Finally, the 1996 amendments expanded the authority of the Chief Counsel for Advocacy of the Small Business Administration (SBA) to file *amicus* briefs in court proceedings involving an agency's violation of the RFA.

In determining the scope, or 'universe', of the entities to be considered in a FRFA, NMFS generally includes only those entities that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the

purpose of this analysis. NMFS interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

Data on cost structure, affiliation, and operational procedures and strategies in the fishing sectors subject to the proposed regulatory action are insufficient, at present, to permit preparation of a "factual basis" upon which to certify that the preferred alternative does not have the potential to result in "significant adverse impacts on a substantial number of small entities" (as those terms are defined under RFA).

Because, based on all available information, it is not possible to 'certify' this outcome, should the proposed action be adopted, a formal FRFA has been prepared and is included in this package for Secretarial review.

3 What is required in a FRFA?

Under 5 U.S.C., Section 604(a) of the RFA, each FRFA is required to contain:

> (1) a succinct statement of the need for, and objectives of, the rule;
>
> (2) a summary of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis, a summary of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;
>
> (3) a description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;
>
> (4) a description of the projected reporting, recordkeeping and other compliance requirements of the rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and
>
> (5) a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

4 What is a small entity?

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) and small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a 'small business' as having the same meaning as 'small business concern' which is defined under Section 3 of the Small Business Act. 'Small business' or 'small business concern' includes any firm that is independently owned and operated and not dominant in its field of operation. The SBA has further defined a "small business concern" as one "organized for profit, with a place of business located in the United States, and which operates primarily

within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor...A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the firm is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture."

The SBA has established size criteria for all major industry sectors in the U.S., including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $3.5 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the $3.5 million criterion for fish harvesting operations. Finally a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established "principles of affiliation" to determine whether a business concern is "independently owned and operated." In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern's size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50 percent or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or has the power to control less than 50 percent of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors or general partners controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor or subcontractor is treated as a participant in a joint venture if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the

ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations. The RFA defines "small organizations" as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

5 What is this action?

This action requires an operator of a federally-permitted catcher vessel using hook-and-line or jig gear in the Southeast Outside District (SEO) to retain and land all demersal shelf rockfish (DSR) caught while fishing for groundfish or for Pacific halibut under the Individual Fishing Quota (IFQ) program in the SEO. This action is necessary to improve estimates of fishing mortality of DSR. Under existing Federal and State of Alaska (State) regulations, all landed fish must be weighed and reported on State tickets or, in the case of fish landed in a port outside of Alaska, on equivalent Federal or State documents. The final rule limits the sale of retained DSR to prevent excess amounts of DSR entering commerce.

It has the following four components:

1. Eliminate the MRA for incidental catch of DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO;

2. Require that all DSR caught by federally-permitted catcher vessels using hook-and-line and jig gear in the SEO be retained and landed. Catcher/processors would continue to observe current maximum retainable amounts (MRAs) for DSR.

3. Limit the sale of incidental catch of DSR to no more than 10 percent of the aggregate round weight of IFQ Pacific halibut, and other groundfish species open to directed fishing, that are landed during the same fishing trip; or no more than 1 percent of the aggregate round weight of sablefish.

4. Allow retention of any DSR in excess of the amount that may be sold for any use except for sale, barter, or trade.

This action was recommended by the North Pacific Fishery Management Council in February 2003 as its preferred alternative.

6 Need for and objectives of the rule[1]

The need for this action

[1]A complete description of the purposes of this proposed action can be found in Section 1.0 of the EA, and a somewhat shorter description is in Section 4.4 of the RIR (NMFS, 2004).

Fishermen catch DSR in fisheries targeted directly on DSR. They also catch it in other fisheries, particularly those for halibut, as a by-product. The annual DSR Total Allowable Catch (TAC) is divided between the targeted DSR fishery and incidental catch in the halibut fishery (and other groundfish fisheries). To prevent fishermen in the halibut and other groundfish fisheries from exploiting loopholes in the rules that could permit covert targeting of DSR, they are currently required to discard DSR taken in excess of 10 percent of the weight of the targeted species which they have onboard. However, this regulation creates three problems: (1) DSR sustain injuries when brought to the surface that result in 100 percent mortality, so that discarding is perceived by many fishermen and managers as wasteful; (2) the discards are not adequately reported, so managers have poor information about the total levels of discard mortality; (3) State and Federal regulations governing the treatment of DSR bycatch, which is often taken in Federal and State waters on the same trip, are not consistent.

Because of the discard requirements, total bycatch mortality of DSR in the halibut and groundfish fisheries is unknown. This creates a risk of overfishing the DSR stock. Data from the proposed full retention program would be used to: (1) obtain information about bycatch and bycatch rates for DSR; (2) calculate total mortality; (3) enhance the DSR stock assessment and refine estimates of allowable biological catch (ABC) and (TAC); and ultimately, (4) revise the DSR MRA accordingly, unless a decision is made to continue the full retention program indefinitely.

The objectives of this action

As noted in the EA and the RIR, the objectives of this action are:

1. To improve the gathering of information on the bycatch of DSR in the halibut longline fishery and other fisheries in the SEO, in order to get a more accurate picture of DSR mortality and to enable biologists to improve the annual stock assessments.

2. To avoid, in the process of implementing a full retention program, either increasing incentives to target on DSR or increasing incentives to discard bycatch in excess of the amount that can legally be sold.

3. To minimize waste to the extent practicable while meeting these goals.

4. To achieve consistency between State and Federal regulations that govern the retention and disposition of DSR harvested in the SEO.

7 Public Comments

The proposed rule was published in the *Federal Register* on January 21, 2004 (69 *FR* 2875). An Initial Regulatory Flexibility Analysis (IRFA) was prepared for the proposed rule, and described in the classification section of the preamble to the rule. The public comment period ended on February 20, 2004. One letter with six comments was received during the comment period. None of the comments were on small entity issues or on the IRFA.

8 Number and description of small entities affected by the proposed action

What are the directly regulated entities?

The preferred alternative would regulate catcher vessels fishing for halibut or for groundfish with hook-and-line gear and jigs in Federal waters in the SEO. Vessels fishing only in State waters in the SEO would not be regulated by this alternative. Vessels fishing in both Federal and State waters would not be regulated while fishing in State waters. The vessels targeting DSR during the directed DSR fishing season from January 1 to March 14, and from November 16 to December 31, would not be directly regulated by this proposal. Catcher/processors would not be regulated by this alternative.

The preferred alternative would also regulate entities buying fish from catcher vessels delivering DSR as bycatch. Under its provisions, these entities would not be allowed to subsequently sell DSR acquired from a fisherman in excess of the limit imposed by the 10% restriction on the fisherman's permitted sales.

Number of small directly regulated entities

As noted in the EA/RIR/IRFA, an estimated 423 vessels were active in the halibut and groundfish hook-and-line fisheries in the Federal waters of the SEO in 2000. Almost all of these (all but five) were catcher vessels. Each of these vessels has been assumed to represent a separate entity (estimates based on NMFS Catch by Vessel Database and RAM halibut fishing statistics). (NMFS, 2004, page 73)

As noted earlier, a small fishing entity is a vessel that annually grosses less than $3.5 million in all of its combined operations, including the operations with which it may be affiliated. It is currently impossible, however, to determine how much these fishing vessels gross in all of their operations, or to identify the affiliations between them and other entities. The best source of information on the size classification of groundfish fishing entities in the GOA are tables prepared by the NMFS Alaska Science Center and published in the annual Groundfish Economic SAFE document. These indicate that all hook-and-line groundfish vessels in the GOA are small entities. There are good reasons to believe that these tables understate the numbers of large entities.[2] However, in the absence of better information, all of the entities potentially taking DSR bycatch in Federal waters of the SEO are treated here as small entities. (NMFS 2004, page 73).

Landings records indicate that between 17 and 26 shorebased buyers in Southeast Alaska purchased DSR between 1996 and 2001. The median and modal numbers of firms were both 21.[3] The threshold for large seafood buyers and processors is 500 employees. In taking account of the numbers of employees, affiliations between entities should be accounted for. That is, a firm that employs fewer than 500 persons would be a large entity if it were affiliated with another firm that employed more than 500; or with two affiliated firms that between them employed more than 500. Reliable data on the numbers of employees and information about the affiliations between entities are not readily available. For this purpose of this analysis, these shoreside processors are assumed to be small entities. (NMFS, 2004, page 73).

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[2]Perhaps the strongest reason for this is that the categorizing of large and small entities is done solely by considering revenues from groundfish fishing. These vessels are almost all also involved in fishing for other species in Alaska and these revenues have not been considered here. These tables are known to be subject to other shortcomings as well. They do not take account of revenues that may have been earned in fisheries outside of Alaska, and they do not take account of possible affiliations between vessels, or between vessels and processors.

[3]Terry Hiatt. NMFS, Alaska Fisheries Science Center. Personal communication, Sept. 27, 2001.

Description of small regulated entities

The fleet is largely composed of catcher vessels under 60 feet, primarily fishing hook-and-line gear for halibut. Other groundfish species are taken as well. Sablefish may be targeted separately from halibut; other groundfish are probably taken largely incidentally. This fleet generated an estimated $33 million in gross revenue from its harvests in the Federal waters of the SEO during 2000. Average gross revenues were about $79,000 per vessel. Almost all of the revenues from the Federal SEO waters were generated by halibut and sablefish. Sablefish revenues were about $21 million, while halibut revenues were about $12 million. Fishing in the SEO was only a part of the fishing activity by these vessels. Gross revenues for these vessels, from all groundfish and halibut fisheries off Alaska in 2000, were $111 million, or about $262,000 per vessel. In addition to significant statewide revenues from sablefish ($54 million) and halibut ($45 million), these vessels obtained large revenues from Pacific cod ($9 million). DSR incidental catch revenues for 2000 in the SEO were about $176,000; total statewide DSR revenues (from incidental catch and directed harvests) were about $793,000. These revenue estimates only include revenues from groundfish and halibut; many of these entities would also have earned revenues from other fisheries, of which Alaska's salmon and herring fisheries were probably most important. DSR incidental catch revenues were about 0.16% of the fleet's total statewide groundfish and halibut revenue; if probable herring and salmon revenues are also considered, DSR incidental catch revenues are even a smaller percentage of overall revenues. DSR incidental catch revenues in the SEO were about 0.53% of the fleet's groundfish and halibut revenues from Federal waters in the SEO. (NMFS 2004, pages 73-74).

Shoreside processors buying DSR also bought other groundfish, halibut, salmon, herring and crab. In 2000, the 22 firms processing groundfish in Southeast Alaska, had total gross revenues from all fish processing activities of about $262 million, or an average per plant of about $12 million. Several larger plants dominate the average calculation; the median gross revenues were about $5 million. Groundfish (which does not include halibut) were a relatively minor component of the processing activity, accounting for about 20% of aggregate firm gross revenues. Total groundfish revenues were about $52 million, or about $2.4 million per plant. The importance of groundfish varied across firms. Nine firms earned more than 10% of their gross revenues from groundfish, while five earned between 30% and 50% of their revenues from groundfish. No plant made more than 50% from groundfish. In comparison, the total first wholesale value of DSR products in 2000 (processed by 19 plants) was about $1.2 million, or about $60,000 per plant.[4] (NMFS, 2004, page 74)

9 Recordkeeping and reporting requirements

The FRFA should include "a description of the projected reporting, record keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record..."

This regulation does not impose new recordkeeping or reporting requirements on the regulated small entities. (NMFS, 2004, page 75).

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[4]Terry Hiatt. NMFS, Alaska Fisheries Science Center. Personal communication2, Sept. 27, 2001, and Dec. 12, 2002..

10 Description of significant alternatives[5]

A FRFA should include "a description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected. "

The EA/RIR/IRFA for this action considered four alternatives: (1) the status quo, (2) full retention allowing excess DSR to enter the stream of commerce, (3) full retention prohibiting excess from entering the stream of commerce, and (4) use of an observer program. (NMFS, 2004). The Council and NMFS have chosen Alternative 3 as the preferred alternative. The table on the next page describes the relative adverse impacts of the four alternatives on small entities, and describes why Alternatives 1, 2, and 4 were not chosen.

[5]This section is based on pages NMFS 2004, pages 74-77.

Comparison of the alternatives

Alternative	**How do the small entity impacts of this alternative compare to those of the preferred alternative?**	**Why wasn't this alternative selected?**
Alt 1 - the status quo	This alternative has fewer adverse impacts on the directly regulated small entities than the preferred alternative.	This alternative does not meet the action objective of providing better information on DSR bycatch mortality in the SEO. Nor does it meet the objectives of reducing waste and increasing consistency between state and federal regulations.
Alt 2 - full retention - possible disposal over 10% to buyers or processors but no retention of the proceeds	Alternative 2 is the same as the preferred alternative, except it would permit the sale of DSR in excess of the 10% limit, and regulate the disposition of the proceeds. Fishermen would face additional costs of storage, reduced space for target species, delivery, unloading, weighing and disposal. This would have fewer adverse impacts than the preferred alternative, because it would provide fishermen with more options for the disposal of excess DSR.	This Alternative would provide new information on status of DSR stocks. Would not increase incentives for targeting DSR, would reduce waste of DSR and conflict between State and Federal regulations. This was the Council's original preferred alternative, but Alt. 3 was adopted in its place, after NOAA General Counsel identified serious legal issues with Alt. 2. Regulation of the disposition of the proceeds from the sale of the DSR appears to exceed the authority granted to NMFS under the Magnuson-Stevens Act.
Alt 3 - full retention - DSR over 10% limit cannot enter the "stream of commerce" **(preferred alternative)**	**This is the preferred alternative.** Fishermen face additional costs of storage, reduced space for target species, delivery, unloading, weighing and disposal. Processors would no longer be able to sell fishermens' excess DSR. Processors are likely to become involved in helping fishermen to dispose of excess DSR.	This was adopted by the Council as its preferred alternative in February 2003. Provides new information on status of DSR stocks. Does not increase incentives for targeting DSR. May **not** reduce waste of DSR to the same extent as Alternative 2. Reduces conflict between State and Federal regulations.
Alt 4 - observers	Fishermen would face additional costs for observer, including travel and logistical expenses for observers, and an additional cost of about $330/day for 30% of days at sea. This alternative is believed to impose more adverse impacts on directly regulated small entities than the preferred alternative.	This would extend the groundfish observer program to a vessel size class (<60 feet) and a target species (halibut) for which the program was not designed. Fishermen would be responsible for paying for observer coverage. Non-monetary costs of carrying observers on small vessels may also be burdensome. Would provide new information on the status of DSR stocks. Would not increase incentives for targeting DSR. Would not reduce waste of DSR. Would not reduce conflict between State and Federal regulations.

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Literature cited

NMFS. 2004. Final Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis for a Proposed Regulatory Amendment for Full Retention of Demersal Shelf Rockfish in Longline Fisheries in the Southeast Outside District. NMFS, P.O. Box 21668, Juneau, Alaska 99802. May, 2004.