# Public Testimony Sign-Up Sheet

## Agenda Item D-1a GOA Arrowtooth MRA

| | NAME (PLEASE PRINT) | AFFILIATION |
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| 1 | Theresa Peterson | AMCC |
| 2 | Ron Kawamoto | Sylvia Star |
| 3 | Julie Benny | AFDB |
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NOTE to persons providing oral or written testimony to the Council: Section 307(1)(I) of the Magnuson-Stevens Fishery Conservation and Management Act prohibits any person " to knowingly and willfully submit to a Council, the Secretary, or the Governor of a State false information (including, but not limited to, false information regarding the capacity and extent to which a United State fish processor, on an annual basis, will process a portion of the optimum yield of a fishery that will be harvested by fishing vessels of the United States) regarding any matter that the Council, Secretary, or Governor is considering in the course of carrying out this Act.

AGENDA D-1(a)
OCTOBER 2007

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver
Executive Director

DATE: September 20, 2007

SUBJECT: Groundfish Management

ESTIMATED TIME
4 HOURS
(all D-1 items)

ACTION REQUIRED

Final action on the GOA Arrowtooth MRA adjustment.

BACKGROUND

In June 2007, the Council reviewed an EA/RIR/IRFA that proposes to revise the maximum retainable amounts (MRAs) of groundfish in the GOA arrowtooth flounder fishery. The proposed action includes three alternatives under consideration. Alternative 1 is the no action alternative. Alternative 2 would set the MRAs for incidental catch species relative to arrowtooth based on the industry proposal. Alternative 3 would set the MRAs for incidental catch species relative to arrowtooth near recent high catch levels in the arrowtooth flounder fishery. The executive summary of the EA/RIR/IRFA is attached as Item D-1(a)(1). At this meeting, the Council is scheduled to take final action.

# Executive Summary

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) evaluates the environmental impacts, costs and benefits, and small entity impacts of a proposed regulatory amendment. The proposed amendment would increase the maximum retainable amounts (MRAs) of selected groundfish in the arrowtooth flounder fishery in the Gulf of Alaska (GOA). The purpose of the proposed amendment is to reduce the amount of regulatory discards of otherwise marketable groundfish in the developing arrowtooth flounder fishery. This EA/RIR/IRFA addresses the requirements of the National Environmental Policy Act, Presidential Executive Order 12866, and the Regulatory Flexibility Act.

In October 2006 the North Pacific Fishery Management Council (Council) received a proposal from industry to revise the MRAs of groundfish in the arrowtooth flounder fishery in the GOA. The problem statement made by the industry may be summarized as follows:

> When the MRAs for the directed GOA arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowances at zero for a wide group of species to prevent vessels from using arrowtooth flounder as a basis species for retention since there was no market for arrowtooth flounder. Arrowtooth flounder is now a viable target fishery and efforts to improve retention of many groundfish species utilized by the trawl sectors are restrained by MRAs in the directed GOA arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates as an allocation approach. However, sometimes species managed with MRAs must be discarded, even though economic incentives exist to retain that species. Thus, the MRA forces regulatory discards of some species that might otherwise be retained without undermining the intent of the MRA as a tool to reduce overall harvest rates. This regulatory amendment would evaluate raising the MRAs for some species in the directed GOA arrowtooth flounder fishery to provide increased opportunity for retention of species harvested by the trawl sectors and reduce overall discards in this sector, while not subjecting incidentally caught species to increased allocation concerns.

The MRA of a species closed to directed fishing is the maximum weight of that species that may be retained onboard a vessel, calculated as a percentage of the weight of the retained catch onboard the vessel of each species open to directed fishing (the basis species). Table 1 lists the proposed MRAs for incidental catch species relative to arrowtooth flounder as a basis species under each alternative. Note that the basis species under each alternative is arrowtooth flounder and that the MRA percentages for each incidentally caught species are found in the columns.

The alternatives consider increasing the MRAs in the arrowtooth flounder fishery for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, Atka mackerel, sablefish,

aggregated rockfish, and skates. None of the alternatives consider changing the existing MRAs in the arrowtooth flounder fishery for pollock, Pacific cod, the "other species" category (squid, octopus, sharks, and sculpins), or forage fish.

Alternative 1, the no action or status quo alternative, would leave the MRAs for groundfish in the arrowtooth fishery unchanged from those in current regulations.

Alternative 2 would set the MRAs for incidental catch species relative to arrowtooth flounder as a basis species as per the industry proposal.

Alternative 3 would set the MRAs for incidental catch species relative to arrowtooth flounder as a basis species near recent high catch levels associated with the arrowtooth flounder target.

The action area covers the entire GOA. Under Alternatives 2 and 3, the MRAs for selected groundfish in the arrowtooth flounder fishery would be increased from current levels. Increased MRAs would allow increased retention of groundfish closed to directed fishing during the arrowtooth flounder fishery. Increased retention of these incidentally caught groundfish would reduce regulatory discards. The opportunity for increasing retention may result in an increased catch of these incidental catch species in the arrowtooth flounder fishery. However, even if the amounts of groundfish retained in the arrowtooth flounder fishery increased, total removals of each species would be maintained within the total allowable catch (TAC) levels for each species established through the harvest specifications process. The impacts of the harvest strategies and resulting TAC amounts were analyzed in the Alaska Groundfish Harvest Specifications Environmental Impact Statement (NMFS 2007a). This proposed action would have no additional impacts on the GOA environment beyond those analyzed in the EIS.

The eastern and western distinct population segments (DPS) of Steller sea lions (SSL) and their designated critical habitat occur in the GOA. The western DPS is listed as endangered and the eastern DPS is listed as threatened under the Endangered Species Act (ESA). NMFS has jurisdiction under the ESA over SSL and is responsible for the conservation and recovery of the species. One of the potential effects of the groundfish fisheries on SSL is competition for the prey species pollock, Pacific cod, and Atka mackerel. The MRAs for pollock and Pacific cod are not proposed to be revised under any of the alternatives. However, Alternatives 2 and 3 propose increases in the MRA for Atka mackerel in the arrowtooth flounder fishery, which could lead to an increase in the total catch of Atka mackerel in SSL critical habitat. Although it is difficult to predict how an increase in MRAs will change the fishing behavior of participants in the arrowtooth flounder fishery, neither Alternative 2 or 3 is expected to significantly change the timing of the arrowtooth flounder fishery or the total catch of Atka mackerel in this fishery. The catch of Atka mackerel in the arrowtooth flounder fishery has been low in the past and the participants in this fishery have had opportunities in all of the other GOA groundfish fisheries to retain Atka mackerel under the MRAs established in those fisheries. Localized depletion of Atka mackerel was not identified as a concern with a 20 percent MRA for Atka mackerel in these other groundfish fisheries.

The current directed fishery for arrowtooth flounder is described in more detail in Section 2.4 of this document. In the GOA the arrowtooth flounder fishery is almost exclusively

prosecuted by catcher vessels (CVs) and catcher/processor vessels (CPs) using bottom trawl gear. Although the arrowtooth flounder fishery is open to other vessel categories and gear types, very small amounts of arrowtooth flounder are harvested by other gear types and then only as incidental catch. In recent years CVs participating in the arrowtooth flounder fishery generally fish for Pacific cod and pollock during the roe season. Following the seasonal closure of these fisheries, vessels target arrowtooth flounder until the second seasonal halibut bycatch cap for the deep-water complex is reached (usually in May). The CPs participating in the arrowtooth flounder fishery enter the fishery following the closure of rock sole and yellowfin sole in the Bering Sea. Most of the harvest of arrowtooth flounder occurs from March through May. Depending upon the availability of the halibut PSC allowance for the trawl fisheries vessels may also target arrowtooth flounder in October and November. After the arrowtooth flounder fishery closes in the spring, these vessels generally shift to several different targets; notably flatfish species in the shallow-water complex, rockfish, pollock, and Pacific cod as the seasonal allowances of these targets become available. The implementation of the Rockfish Pilot Program in the Central GOA in 2007 may result shifts in effort and timing of the arrowtooth flounder fishery.

Given the general trend in the price for arrowtooth flounder, increasing the MRAs for incidentally caught species could provide enough of an economic incentive for the some trawl vessels to target arrowtooth flounder more often. Under Alternative 1, those groundfish species with an MRA set at zero that are closed to directed fishing must be discarded, regardless of the value of the species. Under Alternatives 2 and 3, high valued bycatch species that are closed to directed fishing could be retained up to the MRA, thus potentially increasing the vessel's net revenue while targeting arrowtooth flounder. In those cases were a vessel is on the margin for targeting arrowtooth flounder under Alternative 1, increasing the MRAs for the incidental catch species under Alternatives 2 and 3 could be enough of economic incentive to induce entry into the arrowtooth flounder target fishery.

In designing the alternatives for this action, it was the intent to keep several species at or near status quo levels to reduce the economic incentive for vessels to use arrowtooth flounder fishery to increase catch of pollock, Pacific cod, sablefish, aggregated rockfish, and forage fish. However, there is the potential for increased catch of some MRA species. Under Alternatives 2 and 3, increased retention of some MRA species is likely over status quo. The likelihood for a "top off" fishery[1] is higher for those species with proposed MRAs significantly higher than their average bycatch rate, while less likely for species with proposed MRAs at or near their average bycatch rate. In general, the development of a "top off" fishery is dependent upon a number of issues including but not limited to the price of the species, whether there is a potential buyer, accessibility of the species, storage availability, and the ability to process the species. In addition, the potential for a vessel to "top off" on a specific species varies across vessels. A vessel with the ability to limit incidental catch while targeting arrowtooth flounder provides more discretion for "topping off" on specific species.

Increasing the MRAs for the directed arrowtooth flounder fishery under Alternatives 2 and 3 would likely increase the demand for halibut PSC that is apportioned to the deep-water species complex. Given that halibut PSC is not apportioned between targets included within the deep-water complex for trawl gear, the pace of fishing could increase as trawl vessels

[1] "Topping off" is the intentional targeting of an MRA species that is closed to directed fishing.

race to harvest more of the species in the deep-water complex fisheries before halibut PSC is fully utilized.

An Initial Regulatory Flexibility Analysis (IFRA) was prepared to evaluate the impacts on small entities of the alternatives for revising the MRAs for groundfish in the GOA using arrowtooth flounder as a basis species. An estimated 18 CV trawl vessels that qualify as small entities under the Regulatory Flexibility Act participate in the arrowtooth flounder fishery could be affected by the alternatives. No CPs that met the criteria for small entities were identified as participating in the arrowtooth flounder fishery. Alternatives 2 and 3 would provide an opportunity to retain additional, economically valuable groundfish species in the arrowtooth flounder directed fishery. This would be beneficial to the affected small entities. No negative impacts on small entities are associated with either Alternative 2 or 3.

AGENDA D-1(a)
Supplemental
OCTOBER 2007



**September 26, 2007**

**North Pacific Fishery Management Council**
**605 West 4th Ave., Suite 306**
**Anchorage, AK 99501-2252**
**FAX (907)271-2817**

**RE: D-1 Groundfish Management**
**(a) Final action GOA Arrowtooth MRA- Regulatory Management**

I'm Pete Hannah a 29 year resident and fisherman from Kodiak.

In regards to the expansion of the Arrowtooth flounder fishery, I think some consideration should be taken on the effects on the Kodiak tanner crab stocks. It is well known that much of the Arrowtooth fisheries take place on the crab grounds.

It would be very imprudent and destructive to expand this fishery without closing sensitive areas (which have already been submitted in previous council meetings and to the ADF&G by AMCC and local crab fishermen), plus having crab caps with 100% observer coverage.

It doesn't take much intelligence to know that if you drag hard on the bottom on crab grounds you are going to destroy, kill, and mangle crab and the environment they live in.

If we are going to have these expanded fisheries we need to have hard and fast rules that can't be skirted around. Closed areas and 100% observer coverage.

Thanks

Pete Hannah

Pete Hannah
F/V Mikado
PO Box 3808
Kodiak, Alaska 99615
(907)486-6261

# Polar Star, Inc.

**Patrick J. Pikus, President**
**P.O. Box 2843 Kodiak, AK 99615**
**907-486-5258 pikus@acsalaska.net**


September 26, 2007



John Bundy, Acting Chair
North Pacific Fishery Management Council
605 W. 4th Ave. Suite 306
Anchorage, AK 99501

**RE:** Agenda item D1a, GOA Arrowtooth MRA regulatory amendment.

Dear Chair Bundy:

I own and operate the 58-foot F/V Polar Star, which fishes for salmon, halibut, sablefish, p-cod and tanner crab here in the Gulf of Alaska. I have fished here since 1972, and all of these fisheries are important to my livelihood. The tanner crab fishery has historically been a vital part of the GOA fisheries. When the fishery was reopened in 2002 it was like a breath of fresh air for myself and many other fishermen here in Kodiak. However, there may not be a tanner crab fishery next year as the stocks have declined again. I, and many other long-time fishermen here in the gulf, would like to see the tanner crab stocks rebuild so that we can have a healthy fishery. I believe that some actions of the council can have a great impact on the ability of the tanner crab stocks to rebuild.

I would first like to comment on the action the council is going to take on agenda item D1a, the Arrowtooth MRA regulatory amendment. Any action that has the effect of increasing the amount of hard-on-bottom trawling in areas where the tanner crab are concentrated can have a tremendous negative impact on the ability of the tanner crab stocks to rebuild. For this and future actions I ask that the council give serious consideration to protecting the tanner crab stocks when considering actions that would increase hard-on-bottom trawling on the tanner crab grounds. This could be accomplished through the use of caps and 100% observer coverage, if need be.

I would also like to make a general comment about hard-on-bottom trawling. I feel that for the long-term overall health of the fisheries here in the GOA, we should be thinking about ways to decrease the amount of hard-on-bottom trawling. It destroys fish habitat and has the well-recognized bycatch problems that the council is always wrestling with. The council recognized this when it enacted the essential fish habitat protections in the BSAI two years ago. We prosecute the p-cod pot fishery with minimal bycatch and bottom damage compared to hard-on-bottom trawling. I feel that it is time to move away from hard-on-bottom trawling here in the Gulf.

Thank you for your consideration.

Sincerely,

Patrick J. Pikus
Polar Star, Inc.

September 26, 2007

North Pacific Fishery Management Council
605 West 4th Ave., Suite 306
Anchorage, AK 99501-2252
FAX (907)271-2817

RE: D-1 Groundfish Management
a) Final action on GOA Arrowtooth MRA

We own and operate the 72ft F/V Point Omega out of Kodiak. We are totally dependent on fishing. This vessel was built 37 years ago to fish crab and we have seen the King crab fishery disappear and now feel the very small tanner fishery that has appeared in the last few years is in jeopardy.

In regards to the expansion of the Arrowtooth flounder fishery, We think careful consideration should be taken on the effects on the Kodiak tanner crab stocks. It is well known that much of the Arrowtooth fisheries take place on the crab grounds.

It would be negligent and foolhardy to expand this fishery without closing sensitive crab areas (which have already been submitted during previous council meetings and to the ADF&G by AMCC and local crab fishermen) We need crab caps and 100% observer coverage if there is going to be expansion in the Arrowtooth flounder fishery.

Why is it that the government bodies and agencies are not able to share the data that is collected on the different fisheries? We would like to see the sharing of information between the State of Alaska and NOAA, NMFS and any other data bases that might provide the information to help managers who are making the decisions. They need fishing patterns and areas fished to make these decisions. From what we understand this is not the case especially with VMS data and we would like to see that rectified. When the Department of Fish and Game can't get access and utilize this information how can any of us make informed decisions?

If you trawl hard on the bottom on crab grounds you are going to destroy the environment and the crab that live there.

From what we understand much of the Arrowtooth became a discard species this year because of the time constraints on delivery and the market was not there. Why expand a fishery with so many flaws and so much potential destruction?

Thanks
Ken & Chris Holland

Ken and Chris Holland
F/V Point Omega
PO Box 608
Kodiak, Alaska 99615

September 2007

John Bundy, Acting Chair
North Pacific Fishery Management Council
605 W. 4th Ave. Suite 306
Anchorage, AK 99501

Re: Agenda item D1 (a), GOA Arrowtooth MRA regulatory amendment.

Dear Members of the NPFMC,

We own and operate the 42 foot commercial fishing vessel Patricia Sue, based out of Kodiak, and participate in the salmon, halibut, pacific cod, herring and Tanner crab fisheries in the Gulf of Alaska.

As resident fishermen depended upon the matrix of these fisheries to garnish a living, we are extremely concerned about the impact that an expansion of the directed arrowtooth fishery may have on the Tanner crab stocks around Kodiak Island. Due to the aggregate nature of these species, bycatch of juveniles and adult crab in contact with a bottom trawl may prove devastating to populations which support a viable Tanner crab fishery. This fishery has been on the rebound after years of closures and at this time it is unknown whether stocks are strong enough to support a commercial fishery in 2008.

In creating additional MRA availability for multiple species in support of economic benefits for the directed arrowtooth fishery, something needs to be done to mitigate the impacts on crab of an expanding bottom trawl fleet. While the success of the trawl excluders in regards to reduction of halibut may create opportunity to support a viable arrowtooth fishery, the excluders do nothing for the crab which suffer an 80% mortality rate when exposed to a bottom trawl. We urge you to consider enhancing opportunities for crab recovery by minimizing bycatch and protecting bottom habitats they depend on. Research shows that bottom trawling in sensitive areas alters benthic habitat, diminishes habitat features needed for shelter and other functions and changes species and composition and abundance in the area affected. A study around Kodiak Island compared areas closed to bottom trawling with adjacent areas open to trawling. Inside the closed areas there were high- density sea whips containing 33% more Tanner crab than the adjacent areas.

We strongly urge the Council to defer final action on this regulatory amendment until measures may be build in to address concerns with Tanner crab bycatch. A large percentage of the crab population could be protected with year round bottom trawl closures for selected areas of biological importance to Tanner crab.

Sincerely,

Charlie and Theresa Peterson

Charlie and Theresa Peterson

PUBLIC REVIEW DRAFT

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

For a Regulatory Amendment to Revise the Maximum Retainable Amounts Of Groundfish in the Arrowtooth Flounder Fishery

Implemented Under the Authority of the
Fishery Management Plan
for the
Groundfish Fishery of the Gulf of Alaska


Lead Agency: National Marine Fisheries Service
Alaska Regional Office
Juneau, Alaska

Responsible Official: Robert D. Mecum
Acting Administrator
Alaska Regional Office

For Further Information Contact:
Tom Pearson
National Marine Fisheries Services
Sustainable Fisheries, Alaska Region
301 Research Court, Room 212
Kodiak, Alaska 99615
907-481-1780 tom.pearson@noaa.gov


Date: September 3, 2007


Abstract: This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) evaluates the environmental impacts, costs and benefits, and small entity impacts of a proposed regulatory amendment. The proposed amendment would increase the maximum retainable amounts (MRAs) of selected groundfish in the arrowtooth flounder fishery in the Gulf of Alaska (GOA). The purpose of the proposed amendment is to reduce the amount of regulatory discards of otherwise marketable groundfish in the developing arrowtooth flounder fishery. This EA/RIR/IRFA addresses the requirements of the National Environmental Policy Act, Presidential Executive Order 12866, and the Regulatory Flexibility Act.

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# Executive Summary

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In October 2006 the North Pacific Fishery Management Council (Council) received a proposal from industry to revise the MRAs of groundfish in the arrowtooth flounder fishery in the GOA. The problem statement made by the industry may be summarized as follows:

> When the MRAs for the directed GOA arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowances at zero for a wide group of species to prevent vessels from using arrowtooth flounder as a basis species for retention since there was no market for arrowtooth flounder. Arrowtooth flounder is now a viable target fishery and efforts to improve retention of many groundfish species utilized by the trawl sectors are restrained by MRAs in the directed GOA arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates as an allocation approach. However, sometimes species managed with MRAs must be discarded, even though economic incentives exist to retain that species. Thus, the MRA forces regulatory discards of some species that might otherwise be retained without undermining the intent of the MRA as a tool to reduce overall harvest rates. This regulatory amendment would evaluate raising the MRAs for some species in the directed GOA arrowtooth flounder fishery to provide increased opportunity for retention of species harvested by the trawl sectors and reduce overall discards in this sector, while not subjecting incidentally caught species to increased allocation concerns.

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The action area covers the entire GOA. Under Alternatives 2 and 3, the MRAs for selected groundfish in the arrowtooth flounder fishery would be increased from current levels. Increased MRAs would allow increased retention of groundfish closed to directed fishing during the arrowtooth flounder fishery. Increased retention of these incidentally caught groundfish would reduce regulatory discards. The opportunity for increasing retention may result in an increased catch of these incidental catch species in the arrowtooth flounder fishery. However, even if the amounts of groundfish retained in the arrowtooth flounder fishery increased, total removals of each species would be maintained within the total allowable catch (TAC) levels for each species established through the harvest specifications process. The impacts of the harvest strategies and resulting TAC amounts were analyzed in the Alaska Groundfish Harvest Specifications Environmental Impact Statement (NMFS 2007a). This proposed action would have no additional impacts on the GOA environment beyond those analyzed in the EIS.

The eastern and western distinct population segments (DPS) of Steller sea lions (SSL) and their designated critical habitat occur in the GOA. The western DPS is listed as endangered and the eastern DPS is listed as threatened under the Endangered Species Act (ESA). NMFS has jurisdiction under the ESA over SSL and is responsible for the conservation and recovery of the species. One of the potential effects of the groundfish fisheries on SSL is competition for the prey species pollock, Pacific cod, and Atka mackerel. The MRAs for pollock and Pacific cod are not proposed to be revised under any of the alternatives. However, Alternatives 2 and 3 propose increases in the MRA for Atka mackerel in the arrowtooth flounder fishery, which could lead to an increase in the total catch of Atka mackerel in SSL critical habitat. Although it is difficult to predict how an increase in MRAs will change the fishing behavior of participants in the arrowtooth flounder fishery, neither Alternative 2 or 3 is expected to significantly change the timing of the arrowtooth flounder fishery or the total catch of Atka mackerel in this fishery. The catch of Atka mackerel in the arrowtooth flounder fishery has been low in the past and the participants in this fishery have had opportunities in all of the other GOA groundfish fisheries to retain Atka mackerel under the MRAs established in those fisheries. Localized depletion of Atka mackerel was not identified as a concern with a 20 percent MRA for Atka mackerel in these other groundfish fisheries.

The current directed fishery for arrowtooth flounder is described in more detail in Section 2.4 of this document. In the GOA the arrowtooth flounder fishery is almost exclusively prosecuted by catcher vessels (CVs) and catcher/processor vessels (CPs) using bottom trawl gear. Although the arrowtooth flounder fishery is open to other vessel categories and gear types, very small amounts of arrowtooth flounder are harvested by other gear types and then only as incidental catch. In recent years CVs participating in the arrowtooth flounder fishery generally fish for Pacific cod and pollock during the roe season. Following the seasonal closure of these fisheries, vessels target arrowtooth flounder until the second seasonal halibut bycatch cap for the deep-water complex is reached (usually in May). The CPs participating in the arrowtooth flounder fishery enter the fishery following the closure of rock sole and yellowfin sole in the Bering Sea. Most of the harvest of arrowtooth flounder occurs from March through May. Depending upon the availability of the halibut PSC allowance for the trawl fisheries vessels may also target arrowtooth flounder in October and November. After the arrowtooth flounder fishery closes in the spring, these vessels generally shift to several different targets; notably flatfish species in the shallow-water complex, rockfish, pollock, and Pacific cod as the seasonal allowances of these targets become available. The implementation of the Rockfish Pilot Program in the Central GOA in 2007 may result shifts in effort and timing of the arrowtooth flounder fishery.

Given the general trend in the price for arrowtooth flounder, increasing the MRAs for incidentally caught species could provide enough of an economic incentive for the some trawl vessels to target arrowtooth flounder more often. Under Alternative 1, those groundfish species with an MRA set at zero that are closed to directed fishing must be discarded, regardless of the value of the species. Under Alternatives 2 and 3, high valued bycatch species that are closed to directed fishing could be retained up to the MRA, thus potentially increasing the vessel's net revenue while targeting arrowtooth flounder. In those cases were a vessel is on the margin for targeting arrowtooth flounder under Alternative 1, increasing the MRAs for the incidental catch species under Alternatives 2 and 3 could be enough of economic incentive to induce entry into the arrowtooth flounder target fishery.

In designing the alternatives for this action, it was the intent to keep several species at or near status quo levels to reduce the economic incentive for vessels to use arrowtooth flounder fishery to increase catch of pollock, Pacific cod, sablefish, aggregated rockfish, and forage fish. However, there is the potential for increased catch of some MRA species. Under Alternatives 2 and 3, increased retention of some MRA species is likely over status quo. The likelihood for a "top off" fishery[1] is higher for those species with proposed MRAs significantly higher than their average bycatch rate, while less likely for species with proposed MRAs at or near their average bycatch rate. In general, the development of a "top off" fishery is dependent upon a number of issues including but not limited to the price of the species, whether there is a potential buyer, accessibility of the species, storage availability, and the ability to process the species. In addition, the potential for a vessel to "top off" on a specific species varies across vessels. A vessel with the ability to limit incidental catch while targeting arrowtooth flounder provides more discretion for "topping off" on specific species.

Increasing the MRAs for the directed arrowtooth flounder fishery under Alternatives 2 and 3 would likely increase the demand for halibut PSC that is apportioned to the deep-water species complex. Given that halibut PSC is not apportioned between targets included within the deep-water complex for trawl gear, the pace of fishing could increase as trawl vessels race to harvest more of the species in the deep-water complex fisheries before halibut PSC is fully utilized.

An Initial Regulatory Flexibility Analysis (IFRA) was prepared to evaluate the impacts on small entities of the alternatives for revising the MRAs for groundfish in the GOA using arrowtooth flounder as a basis species. An estimated 18 CV trawl vessels that qualify as small entities under the Regulatory Flexibility Act participate in the arrowtooth flounder fishery could be affected by the alternatives. No CPs that met the criteria for small entities were identified as participating in the arrowtooth flounder fishery. Alternatives 2 and 3 would provide an opportunity to retain additional, economically valuable groundfish species in the arrowtooth flounder directed fishery. This would be beneficial to the affected small entities. No negative impacts on small entities are associated with either Alternative 2 or 3.

[1] "Topping off" is the intentional targeting of an MRA species that is closed to directed fishing.

# Table of Contents

# List of Tables and Figures

# 1 Environmental Assessment

## 1.1 Introduction

This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) evaluates the environmental impacts, costs and benefits, and small entity impacts of a proposed regulatory amendment. The proposed amendment would increase the maximum retainable amounts (MRAs) of selected groundfish in the arrowtooth flounder fishery in the Gulf of Alaska (GOA). The purpose of the proposed amendment is to reduce the amount of regulatory discards of otherwise marketable groundfish in the developing arrowtooth flounder fishery. This EA/RIR/IRFA addresses the requirements of the National Environmental Policy Act, Presidential Executive Order 12866, and the Regulatory Flexibility Act.

The National Environmental Policy Act (NEPA) requires an assessment of the biological, social, and economic consequences of fisheries management alternatives. It provides the members of the public an opportunity to be involved in and influence decision-making on Federal actions.

This EA analyzes the effects of potential revisions to the MRAs for groundfish in the arrowtooth flounder fishery in the GOA. The action area effectively covers the entire Gulf of Alaska. The affected human environment includes the natural and physical environment as well as relevant economic and social conditions.

### 1.1.1 Purpose and Need

The proposed action would increase the MRAs for groundfish in the arrowtooth flounder fishery in the GOA. MRAs are the primary tool NMFS uses to regulate the catch of species closed to directed fishing. The MRA of a species closed to directed fishing is the maximum weight of that species that may be retained onboard a vessel, calculated as a percentage of the weight of the retained catch onboard the vessel of each species open to directed fishing (the basis species). The purpose of the proposed action is to provide the opportunity to the arrowtooth flounder trawl fishing industry to retain more groundfish and is intended to increase the industry's opportunity to reduce discards.

In 1994 the Council set most of the groundfish MRAs at zero relative to retained amounts of arrowtooth flounder to prevent vessels from using arrowtooth flounder as a basis species for retention. At that time, there were concerns that fishing vessel operators would target arrowtooth flounder to increase the retainable amounts of valuable species closed to directed fishing and increase bycatch amounts of Pacific halibut. Increased halibut bycatch rates could result in reaching halibut bycatch limits before the total allowable catches (TACs) established for other trawl target fisheries were harvested.

Since 1997, markets for arrowtooth flounder have been developed and this species now supports a viable target fishery. As a result, representatives for the GOA trawl industry now support changing the MRAs for GOA groundfish to expand the use of arrowtooth flounder as a basis species for the retention of groundfish closed to directed fishing. Products made from arrowtooth

flounder now include whole fish, surimi, headed and gutted (both with and without the tail on), fillets, frills or engama (fleshy fins used for sashimi and soup stock), bait, and meal.

In October 2006 the Council received a proposal from industry to revise the MRAs of groundfish in the arrowtooth flounder fishery in the GOA. The problem statement made by the industry may be summarized as follows:

> When the MRAs for the directed GOA arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowances at zero for a wide group of species to prevent vessels from using arrowtooth flounder as a basis species for retention since there was no market for arrowtooth flounder. Arrowtooth flounder is now a viable target fishery and efforts to improve retention of many groundfish species utilized by the trawl sectors are restrained by MRAs in the directed GOA arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates as an allocation approach. However, sometimes species managed with MRAs must be discarded, even though economic incentives exist to retain that species. Thus, the MRA forces regulatory discards of some species that might otherwise be retained without undermining the intent of the MRA as a tool to reduce overall harvest rates. This regulatory amendment would evaluate raising the MRAs for some species in the directed GOA arrowtooth flounder fishery to provide increased opportunity for retention of species harvested by the trawl sectors and reduce overall discards in this sector, while not subjecting incidentally caught species to increased allocation concerns.

### 1.1.2 Scope of this Environmental Assessment

The Council on Environmental Quality (CEQ) regulations encourages agencies preparing NEPA documents to eliminate repetition as described in the following statement:

> Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. (40 CFR 1502.20)

This process of referencing existing NEPA documents is referred to as "tiering." In 40 CFR 1508.28, the CEQ regulations further define tiering as the coverage of general matter in broader environmental impact statements with subsequent narrower statements of environmental analyses incorporating by reference the general discussion and concentrating solely on the issues specific to the statement subsequently prepared. The CEQ regulations further note that tiering is appropriate when the sequence of statements or analysis is from a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis.

This EA relies heavily on the information and analysis contained in the Alaska Groundfish Harvest Specifications Final Environmental Impact Statement (NMFS 2007a, hereafter referred to as "Groundfish EIS"), available on the NMFS Alaska Region web site at http://www.fakr.noaa.gov. This EA often refers to the Groundfish EIS to focus the analysis on

the current issues and eliminate repetitive discussions. The Groundfish EIS describes the status of the environment and analyzes the impacts of the groundfish fisheries harvest strategies and resulting TAC levels on the human environment.

This EA also relies heavily on the information and analysis contained in the Council's annual Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the Gulf of Alaska (NPFMC 2006), available from the Council web site at http://www.fakr.noaa.gov/npfmc/SAFE. The SAFE Reports contain the status of the groundfish stocks, the results of the NMFS trawl surveys, the annual management fisheries report, stocks assessments, and an economic report.

This proposed action would change the MRA allowances of groundfish using arrowtooth flounder as a basis for retention. This EA details the specific impacts of the proposed action.

## 1.2 Description of Alternatives

The alternatives establish MRAs for incidental catch species relative to arrowtooth flounder as a basis species over a range of values. Alternative 1 (status quo) has the lowest MRA percentages; Alternative 2 has the highest, and the Alternative 3 percentages are intermediate. The MRAs for each incidental catch species relative to arrowtooth flounder as a basis species within each alternative are compared in Table 1. Note that the basis species under each alternative is arrowtooth flounder and that the MRA percentages for each incidentally caught species are found in the columns.

**Alternative 1**, the no action or status quo alternative, would leave the MRAs for groundfish in the arrowtooth flounder fishery unchanged from those in current regulations.

**Alternative 2** would set the MRAs for incidental catch species relative to arrowtooth flounder as a basis species as per the industry proposal.

**Alternative 3** would set the MRAs for incidental catch species relative to arrowtooth flounder as a basis species near recent high catch levels associated with the arrowtooth flounder fishery.

The alternatives consider increasing the MRAs in the arrowtooth flounder fishery for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, Atka mackerel, sablefish, aggregated rockfish, and skates. None of the alternatives would alter the existing MRAs in the arrowtooth flounder fishery for pollock, Pacific cod, the "other species" category (squid, octopus, sharks, and sculpins), or forage fish.

### 1.2.1 Alternative 1: Status Quo (No Action)

Under this alternative the MRAs of incidental catch of groundfish relative to arrowtooth flounder as a basis species are unchanged. These amounts are listed under Alternative 1 in Table 1 and in Table 10 to 50 CFR part 679 (Appendix 1). This is the No Action or status quo alternative. Under this alternative only pollock, Pacific cod, species in the "other species" complex (squid, shark, octopus, and sculpins), and forage fish may be retained relative to arrowtooth flounder as

a basis species. All other incidental species must be discarded relative to retained arrowtooth flounder.

Retention of incidental species relative to arrowtooth flounder is highly restricted compared to other groundfish species (see Appendix 1). The MRA for incidental species relative to arrowtooth flounder as a basis species was changed in 1994 (59 FR 18229; July 27, 1994), in 1997 (62 FR 11109; March 11, 1997), and in 2006 (71 FR 12626, march 13, 2006). At the time of these changes, concerns centered on fishing vessel operators targeting arrowtooth flounder to increase retainable amounts of valuable species closed to directed fishing (topping off) and thereby increase bycatch amounts of Pacific halibut. Increased halibut bycatch rates could result in reaching halibut bycatch limits before the TACs established for other trawl target fisheries were harvested. Recently the value of arrowtooth flounder has increased and the species has developed into a legitimate target.

Many incidental species assigned an MRA of zero are caught in conjunction with arrowtooth flounder when the incidental species are open to directed fishing. Under those conditions retention of the incidental species is not restricted. Retention of incidental species is restricted when the fishery is closed to directed fishing due to TAC considerations (e.g., skates, Atka mackerel, some rockfish targets, trawl sablefish, and forage fish are closed all year to directed fishing) or when limited by a trawl halibut mortality closure.

### 1.2.2 Alternative 2: Set MRAs as per Industry Proposal

Under this alternative MRAs for incidental catch of groundfish relative to arrowtooth flounder as a basis species would be established at the levels proposed by industry. The intent of the proposal is to reduce regulatory discards and increase utilization of marketable fish. The proposal will also reduce violations of the MRA restrictions incurred when vessels are unable to completely discard incidentally caught species that are currently restricted to zero retention. Compared to Alternative 1 the MRAs for pollock, Pacific cod, "other species," and forage fish are unchanged. The MRAs for the remaining incidentally taken species are increased from zero. The MRAs for sablefish and rockfish are raised from zero to 1 percent and 5 percent, respectively. The MRAs for flatfish species, skates, and Atka mackerel are increased from 0 to 20 percent.

Because pollock and Pacific cod are fully utilized in directed fisheries and are forage species for the endangered Steller sea lion, the industry's proposal specifically did not wish incidental catch to increase through potential topping off. The increases proposed for rockfish and sablefish approximate estimated incidental catch rates (Tables 4 through 7) and are proposed to reduce regulatory discards of marketable fish without providing an incentive to top off.

The proposed MRAs for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, skates, and Atka mackerel are greater under Alternative 2 than under Alternatives 1 and 3 (Table 1) and would increase from 0 to 20 percent. Allowing retention of these species may increase catch to some degree, but will primarily reduce discards.

Skates, Atka mackerel, some rockfish targets, and sablefish (in the trawl fisheries) are closed to directed fishing throughout the year to prevent exceeding the TACs and in the case of Atka

mackerel to provide greater prey availability for Stellar sea lions. The Atka mackerel MRA is proposed at 20 percent to be consistent with most other incidental catch species. Skates are raised from zero to 20 percent because they are currently discarded as an incidental species relative to arrowtooth flounder. The sablefish MRA is proposed at 1 percent to allow retention of incidental catch of this highly valuable species but to discourage potential topping off. An increase of the MRA for sablefish as an incidental species beyond 1 percent could encourage increased catch of sablefish in the arrowtooth flounder fishery and interfere, for example, with allocations made under the GOA Rockfish Pilot Program (see Section 1.6).

The aggregated rockfish MRA is established at relatively low level to accommodate the limited amount of incidental catch of rockfish in the arrowtooth flounder fishery and to discourage topping off. Rockfish in the Central GOA are regulated under the Rockfish Pilot Program.

### 1.2.3 Alternative 3: Set MRAs near Recent High Catch Levels Associated with the Arrowtooth Flounder Fishery

Under Alternative 3 MRAs for incidental catch relative to arrowtooth flounder as a basis species would be set near recent highest annual incidental catch rates of species landed in conjunction with arrowtooth flounder. Data from NMFS' Catch Accounting System (CAS) from 2003 through 2006 in Tables 4 through 7 show rates of catch when arrowtooth flounder is identified as the target.

Under Alternative 3, the MRAs are unchanged from Alternatives 1 and 2 for pollock, Pacific cod, other species, and forage fish to respond to concerns expressed in the industry proposal. The rates for deep-water flatfish, rex sole, flathead sole and shallow-water flatfish were derived from Tables 4 through 7. The highest rate for an individual species or species group across the years was identified and the rounded up to the nearest 5 percent. Rounding up the amount provided for potential higher catches and simplifies Table 1.

Compared to Alternative 1 the MRAs in Alternative 3 are set higher for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, sablefish, rockfish, Atka mackerel, and skates. Compared to Alternative 2, Alternative 3 MRAs are unchanged for rockfish and sablefish and would be lower for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, Atka mackerel, and skates.

The intent of this alternative is to (1) reduce regulatory discards and improve the utilization of groundfish incidentally taken in the arrowtooth flounder directed fishery, (2) prevent an increase in groundfish catch in the arrowtooth flounder fishery substantially beyond recent associated catch levels, and (3) continue to keep MRAs for important Stellar sea lion prey species (pollock, Pacific cod, forage fish, and Atka mackerel) at low levels.

### 1.2.4 Alternatives Considered but not Carried Forward

Two additional alternatives were considered but not carried forward for further analysis in this EA because they did not adequately address the problem statement. One alternative would have set the MRAs for incidental groundfish caught in the arrowtooth flounder directed fishery at levels equal to the MRAs established for incidental species caught in other groundfish targets in

the deep-water complex (deep-water flatfish, rex sole, sablefish, and rockfish) (See Appendix 1). This alternative was considered initially as an upper limit.

This alternative was not considered further as the pollock, Pacific cod, sablefish, and rockfish fisheries are fully developed fisheries. These species are predominately caught in directed fisheries. To a large extent, while trawl sablefish is not opened as a directed fishery, it is an acknowledged top off fishery and a significant portion of TAC is allocated to the trawl sablefish fishery. If this alternative were implemented the MRAs would revert back to those levels used prior to 1994. An increase in the MRAs for pollock, Pacific cod, sablefish, and rockfish could encourage topping off using arrowtooth flounder as a basis for retention of groundfish of greater value. This alternative would have allowed potential increased catch through topping off fishing for pollock and Pacific cod in areas where catch of these species are limited as part of measures developed to protect the endangered Steller sea lion (SSL). This has the potential to increase the harvest of important SSL prey species in critical habitat resulting in some localized depletion of these prey species. For these reasons the analysis of this alternative was not carried forward.

The second alternative would have set MRAs at levels equal to recent average (2003 through 2006) catch in the arrowtooth flounder fishery (Tables 4 through 7). This alternative was not developed further because by setting MRAs at average levels regulatory discards would still be required on occasion. In addition, the proposal would have raised the MRA for Pacific cod above the current and industry proposed level and prevented the retention of any Atka mackerel in the arrowtooth flounder fishery.

## 1.3 Affected Environment

This chapter describes the human environment, including the physical environment, habitat, groundfish life history, marine mammals, seabirds, crab fisheries, a management history, the harvesting sector, the processing sector, and community and social conditions. The detailed background information provided in the documents described below are incorporated by reference. In addition to the factors discussed in the Groundfish EIS, this action specifically concerns the management of the MRAs in arrowtooth flounder fishery. A description of the arrowtooth flounder fishery, along with a description of current MRA management, is included here.

### 1.3.1 Gulf of Alaska Environment

The action area includes the entire Gulf of Alaska. The documents listed below contain extensive information about the fishery management areas, fisheries, marine resources, ecosystem, social, and economic elements of the GOA groundfish fisheries. Rather than duplicate an affected environment description here, readers are referred to these documents. This list is a partial listing of NEPA documents that have been prepared for GOA fishery management measures. Internet links to these documents, as well as a comprehensive list of NEPA documents that have been prepared by NMFS, Alaska Region and the Council are at http://www.fakr.noaa.gov/index/analyses/analyses.asp. Any additional information beyond what is included in the following references is contained in the section addressing each particular resource component in Section 1.4.

*Alaska Groundfish Harvest Specifications Final Environmental Impact Statement* (NMFS 2007a). This EIS provides decision makers and the public with an evaluation of the environmental, social, and economic effects of alternative harvest strategies for the federally managed groundfish fisheries in the Gulf of Alaska and the Bering Sea and Aleutian Islands management areas. The EIS examines alternative harvest strategies that comply with Federal regulations, the GOA FMP, and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). These strategies are applied to the best available scientific information to derive the total allowable catch estimates for the groundfish fisheries. The EIS evaluates the effects of different alternatives on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the GOA fisheries.

*Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the Gulf of Alaska* (NPFMC 2006). Annual SAFE reports contain a review of the latest scientific analyses and estimates of each GOA species' biomass and other biological parameters. This includes the acceptable biological catch specifications used by NMFS in the annual harvest specifications. The SAFE report also includes summaries of the available information on the GOA ecosystem and the economic condition of the groundfish fisheries off Alaska. This document is available from http://www.afsc.noaa.gov/refm/stocks/assessments.htm.

*Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement* (Final PSEIS, NMFS 2004). A Final PSEIS was prepared to evaluate the fishery management policies embedded in the BSAI and GOA groundfish FMPs against policy-level alternatives. NMFS issued a Record of Decision for the Final PSEIS on August 26, 2004, effectively implementing a new management policy that is ecosystem-based and more precautionary when faced with scientific uncertainty. The PSEIS serves as the primary environmental document for subsequent analyses of environmental impacts on the groundfish fisheries. Chapter 3 of the Final PSEIS provides a detailed description of the affected environment, including extensive information on fishery management areas, marine resources, and marine habitat in the North Pacific Ocean. For more information, see the Final PSEIS and related documents at http://www.fakr.noaa.gov/sustainablefisheries/seis/default.htm.

### 1.3.2 MRA Regulations and Management Function in GOA Groundfish Fisheries

MRA regulations establish the calculation method and MRAs for groundfish species that are closed to directed fishing. The MRA is calculated as a percentage of the retained amount of species closed to directed fishing relative to the retained amount of basis species or species groups open for directed fishing. All MRA accounting is computed based on round weight equivalent. Appendix 1 lists retainable percentages for GOA incidental groundfish species used to calculate an MRA. Amounts that are caught in excess of the MRA percentage must be discarded. Current regulations limit vessels to MRAs at any time during a fishing trip.

50 CFR part 679.2 defines a fishing trip as follows:

(i) With respect to retention requirements of MRA, an operator of a catcher/processor or mothership processor vessel is engaged in a fishing trip from the time the harvesting, receiving, or processing of groundfish is begun or resumed in an area until

(A) The effective date of a notification prohibiting directed fishing in the same area under § 679.20 or § 679.21;

(B) The offload or transfer of all fish or fish product from that vessel;

(C) The vessel enters or leaves an area where a different directed fishing prohibition applies;

(D) The vessel begins fishing with different type of authorized fishing gear; or

(E) The end of a weekly reporting period, whichever comes first.

MRAs are the primary tool NMFS uses to regulate the catch of species closed to directed fishing. The MRA table is a matrix of proportions representing a range of rates of expected or accepted incidental catch of species closed to directed fishing relative to target species. As a management tool, MRAs rely on the ability of the vessel operator to selectively catch the target species. The target species is called a basis species in regulation. The species closed to directed fishing is the incidental species. The MRA percentages are intended to slow the rate of harvest of a species when insufficient TAC or PSC amounts are available to support a directed fishery.

NMFS prohibits directed fishing for a species to avoid reaching a TAC (typically established for conservation reasons), reaching an amount or percentage of groundfish included in the annual specifications for a gear and species or species group, or for a prohibited species limit (e.g., halibut limits). When NMFS prohibits directed fishing, retention is allowed up to an amount calculated with the MRA. The MRA table (Table 10 to 50 CFR part 679 and Appendix 1 of this document), shows retainable proportions of incidental species relative to species open to directed fishing. Vessel operators calculate the MRA through three basic steps. First, they identify and calculate the round weight of the basis (or target) species onboard. Next, they identify the appropriate fraction from the MRA table, and then multiply that rate against the round weight of the basis species. The calculated maximum amount limits retention of the incidental species. A vessel will typically discard catch of the incidental species in excess of that amount to avoid violation of current regulation. The catcher/processor vessel operator calculates the MRA at any time for the duration of the fishing trip, often referred to as an "instantaneous" calculation. The shoreside catcher vessel operator calculates the MRA upon returning to port for delivery of retained catch.

When NMFS prohibits directed fishing on a groundfish species, MRAs buffer the amount of catch of species on bycatch status occurring in the open directed fisheries. Ideally, the application of an MRA rate slows catch of a species so that harvest can be managed up to the TAC by the end of the year. Beyond management of a TAC to obtain optimum yield, MRA calculations perform two additional functions. First, MRAs limit retention to species' expected or accepted incidental catch rate. Alternately, the MRA functions as a trip limit for retention of incidental catch of a species. This function allows for limited targeting of a species up to the MRA ("topping off").

For several incidental/basis species combinations, the use of low MRA rates may reduce the incentive for topping off that would occur in the absence of this tool. In these cases, the MRAs represent the expected catch of an incidental species absent deliberate action by the vessel operator to maximize that incidental catch. The requirement to not exceed MRA proportion at

any time during a trip limits the vessel operators' ability to maximize catch. This restriction is used to limit total catch of species with low TACs (relative to the species caught in the directed fisheries), at greater risk of being caught in excess of the overfishing level, and of high value. Several rockfish species and sablefish meet these criteria in the GOA.

Current regulations establish a relatively high MRA for particular species. For example, a generous rate of 35 percent for arrowtooth flounder as an incidental species is applied to open groundfish targets as a basis species (Appendix 1). Several directed trawl fisheries incurred high arrowtooth flounder incidental catch rates. The higher MRA allows for increased indirect targeting on arrowtooth flounder. For other species where restricting catch to an incidental rate is not a consideration, regulations establish a default MRA rate of 20 percent.

### 1.3.3 Arrowtooth Flounder Fishery

Arrowtooth flounder (*Atheresthes stomias*) range from central California to the eastern Bering Sea and are currently the most abundant groundfish species in the Gulf of Alaska. Prior to 1990, flatfish catch in the GOA was reported as an aggregate of all flatfish species. The principal flatfish targets at that time were rock sole (shallow-water flatfish), rex sole and Dover sole (deep-water flatfish). Substantial amounts of arrowtooth flounder and other flatfish were discarded at sea because of undesired species, size, or sex. Total GOA catch of arrowtooth flounder, including targeted and incidental catch, has ranged between 13,000 mt (1998) and 27,645 mt (2006). The catch of arrowtooth flounder in the targeted fishery has increased from 6,767 mt (1997) to 15,344 mt (2006). The vast majority of arrowtooth flounder catch is taken by trawl gear. Catches of arrowtooth flounder in recent years have approached established TACs in some areas. In order to reduce potential discards of arrowtooth flounder, the Council raised the TAC for arrowtooth flounder from 5,000 mt to 8,000 mt in the Western GOA in 2001 and from 25,000 mt to 30,000 mt in the Central GOA in 2007.

The MRA regulations identify basis and incidental species retention on different timeframes and species compositions than the Catch Accounting System (CAS) target calculations; therefore, Tables 4 through 7 do not show catch associated only with arrowtooth flounder as a basis species. Vessels may retain several species open to directed fishing. If several species are open to directed fishing and are landed together (which is generally the case), the predominant retained species is assigned as the target. The display of annual retained and discarded species within the arrowtooth flounder target therefore does not reflect the MRA proportions, but rather, a dynamic of multiple target species caught together in the trawl groundfish fishery. These tables list all the species that are caught in conjunction with arrowtooth flounder. The information was calculated from discard rates observed from at-sea sampling and industry reported retained catch. Table 2 includes discarded and retained GOA arrowtooth flounder from 1997 to 2006. Most apparent in Table 2 is the increase in the percent of arrowtooth flounder retained, which increased from a low of 16 percent in 1998 to a high of low of 64 percent in 2005. Table 3 breaks down the retention and discard of arrowtooth flounder by gear type and processing component in 2006. Tables 4 through 7 present the catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system from 2003 through 2006.

The proportion of arrowtooth flounder that is retained has increased in recent years indicating that the species has become a legitimate target. Catch data in Table 2 indicate the retention status

of arrowtooth flounder for 1997 through 2006. For the entire groundfish fleet, recent discards (1997 through 2006) of the total arrowtooth flounder catch have ranged between 84 percent in 1998 to 64 percent in 2005. When catches have been assigned by the NMFS catch accounting system (Tables 4 through 7) from 2003 through 2006 the amount of arrowtooth flounder retained has ranged from 72 percent in 2003 to 83 percent in 2006. The absolute amount of arrowtooth flounder has increased as well.

In the GOA the arrowtooth flounder fishery is almost exclusively prosecuted by CPs and CVs using bottom trawl gear. Although arrowtooth flounder is open to other vessel categories and gear types, very small amounts of arrowtooth flounder are harvested by other gear types and only then as incidental catch. Table 3 shows that within the trawl catch about 56 percent are taken by CVs and 44 percent by CPs in 2006.

The limited amount of arrowtooth flounder taken by hook-and-line gear is incidental to the sablefish and Pacific cod fisheries. Within CVs, the hook-and-line fishery for sablefish takes the vast majority. Additional amounts are taken in the CP hook-and-line fishery for sablefish and their fishery for Pacific cod. Within the CP hook-and-line fisheries, about half of the arrowtooth flounder caught was retained. Within the CV hook-and-line fishery, all arrowtooth flounder was discarded.

Trawl-caught arrowtooth flounder is distributed among several targets and tends to group based on processing mode. Figure 1 shows that CPs take arrowtooth flounder predominately in the arrowtooth flounder target, followed by rex sole, flathead sole, and small amounts in the rockfish target. CVs likewise take the majority of their arrowtooth flounder in the arrowtooth flounder target followed by pollock, shallow-water flatfish (the catch is predominately rock sole), rockfish, and Pacific cod.

In general, the majority of the harvest of arrowtooth flounder occurs between March and May. Depending upon the availability of the halibut PSC allowance for the deep-water complex thorough October 1, vessels may also target arrowtooth flounder in October and November if there is remaining halibut PSC available to support the trawl fisheries at that time. Catch patterns for the Central GOA show that most of the directed fishing for arrowtooth flounder occurs in the spring following the closure of the Pacific cod A season. In the Western GOA, most of the directed fishing for arrowtooth flounder occurs during the spring by CP vessels coming from the Bering Sea after the rock sole and yellowfin sole closures. Following the seasonal closures of these fisheries, vessels target arrowtooth flounder until the second seasonal halibut bycatch cap for the deep-water complex is reached, which is most often in May. Generally, after the arrowtooth flounder fishery closes, these vessels shift to several different targets; notably flatfish species in the shallow-water complex, rockfish, pollock, and Pacific cod as the seasonal allowances of these targets become available. The implementation of the Rockfish Pilot Program in the Central GOA in 2007 may result shifts in effort and timing of the arrowtooth flounder fishery. Figure 2 shows that in 2006 the catch of arrowtooth flounder peaked in April while lesser amounts continued to be harvested later in the year from July through October.

Historically arrowtooth flounder has had limited value compared too many other groundfish species in the GOA. Prior to 1994, the species was used as a very low valued basis species to target species closed to directed fishing. For example arrowtooth flounder was retained on CVs and CPs as a basis for retaining sablefish. Once the sablefish and arrowtooth flounder were

delivered to a plant, the arrowtooth flounder was either sent to a meal plant or discarded. At that time, there were concerns that fishing vessel operators would target arrowtooth flounder to increase the retainable amounts of valuable species closed to directed fishing and increase bycatch amounts of Pacific halibut. Increased halibut bycatch rates could result in reaching halibut PSC limits before the TACs established for other trawl target fisheries were harvested.

Markets for arrowtooth flounder have gradually been developing since 1997. Although arrowtooth flounder market prices fluctuate widely, this species now supports a viable target fishery. The principle buyers of arrowtooth flounder are China and Japan. The primary product for arrowtooth flounder is the frill, which is the fleshy fins used for engawa, a type of sushi. Engawa, normally a premium sushi made from halibut or Greenland turbot, is more affordable using arrowtooth flounder. Unlike most other flatfish, the frill of the arrowtooth flounder is sufficiently sized to cover the rice on sushi, which is critical in sushi markets. The primary market for arrowtooth flounder engawa is Japan. A secondary product for arrowtooth flounder is fillets. A large portion of the arrowtooth flounder fillets exported to China are processed there and then reimported to the U.S. markets as inexpensive flounder. Some arrowtooth flounder processed in Japan is also sold as fillets in the Japanese market. Recently, some arrowtooth flounder fillets have shown up in European markets.

Average gross earnings per round metric ton of retained arrowtooth flounder received by both shoreside processors and CP vessels increased from 2001 to 2005 are displayed in Table 8. For shoreside processors, these estimates include the product value of catch from both Federal and State of Alaska fisheries. For CPs, they include only the product value from catch counted against Federal TACs. These price approximations are based on a combination of weekly production reports, Alaska Commercial Operators Annual Reports (COARs), and blend and other catch accounting data, and tend to support anecdotal observations from the Groundfish Data Bank that prices for this species have increased in recent years.

### 1.3.4 Groundfish MRAs for the Arrowtooth Flounder Fishery

In 1994 the Council chose to prohibit the use of arrowtooth flounder as a basis for calculating retainable amounts of groundfish species closed to directed fishing in the GOA (59 FR 18229; July 27, 1994). In 1994 it set most of the groundfish MRAs at zero relative to retained amounts of arrowtooth flounder to prevent vessels from using arrowtooth flounder as a basis species for retention.

In 1997 the Council recommended revising the MRAs for pollock and Pacific cod from 0 to 5 percent and for aggregated forage fish from 0 to 2 percent. The 1997 proposed rule (62 FR 724; January 6, 1997) and final rule (62 FR 11109; March 11, 1997) to allow the use of GOA arrowtooth flounder as a basis species for pollock and Pacific cod when they are closed to directed fishing noted that a limited fishery for GOA arrowtooth flounder exists and that this species should be allowed as a basis species for the retention of pollock and Pacific cod. At that time, there were still concerns that fishing vessel operators would target arrowtooth flounder to increase the retainable amounts of valuable species closed to directed fishing and increase bycatch amounts of Pacific halibut. Increased halibut bycatch rates could result in reaching halibut PSC limits before the TACs established for other trawl target fisheries were harvested.

Current MRAs for groundfish in the arrowtooth flounder fishery are listed in Table 1 under Alternative 1 and Appendix 1.

Since 1997, markets for arrowtooth flounder have been developed and this species now supports a viable target fishery. As a result, representatives for the GOA trawl industry now support changing the MRAs for GOA groundfish to expand the use of arrowtooth flounder as a basis species for the retention of groundfish closed to directed fishing. This change would provide the opportunity to the trawl fishing industry to retain more groundfish and reduce regulatory discards. In 2006 as part of Amendment 69 to the GOA FMP to revise the manner in which the annual TAC for the "other species" complex is established the Council recommended that the MRA for "other species" using arrowtooth flounder as a basis species be set at 20 percent (71 FR 12626, March 13, 2006).

Recently the total gulf wide retained catch of arrowtooth flounder, including targeted and incidental catch, has increased while discards have decreased (Tables 2 and 3). The vast majority of arrowtooth flounder catch is taken by trawl gear. Catches of arrowtooth flounder in recent years have approached established TACs in some areas. In order to reduce potential regulatory discards of arrowtooth flounder, the Council raised the TAC for arrowtooth flounder from 5,000 mt to 8,000 mt in the Western GOA in 2001 and from 25,000 mt to 30,000 mt in the Central GOA in 2007. With the development of the arrowtooth flounder fishery the amount of halibut mortality attributed to the arrowtooth flounder fishery has increased dramatically from 78 mt in 1997 to 616 mt in 2006. This increase makes less halibut mortality available to support the other directed groundfish fisheries in the trawl deep-water complex (deep-water flatfish, rex sole, and rockfish) from January 20 to October 1 and to all groundfish fisheries after October 1. Rockfish are also part of the deep-water complex, but beginning in 2007 under the Central GOA Rockfish Pilot Program; rockfish will be allocated a specific portion of the third seasonal deep-water complex halibut PSC allowance.

In February 2007 NMFS staff presented a discussion paper to the Council on the industry proposal to revise the MRAs for groundfish in the arrowtooth flounder fishery (NMFS 2007b).

Tables 4 through 7 show species caught within the arrowtooth flounder target by year (2003-2006). The CAS calculates single targets based on all retained catch and may include several species opened to directed fishing that are caught together. Targets are assigned to CPs on a weekly basis and to CVs on a landing basis. These data generally represent aggregate catch of multiple landing reports from CV and weekly production or observer reports from catcher/processors where arrowtooth flounder is calculated as the most prevalent species retained. Some of the discards identified in Tables 4 through 7 may be reduced and retention increased as a result of the adoption of either Alternative 2 or 3.

### 1.3.5 Social and Economic Environment

The social and economic environment is described in detail in Chapter 5 as part of the Regulatory Impact Review.

## 1.4 Environmental Effects of the Alternatives

An EA is prepared pursuant to NEPA to determine whether an action will result in significant effects on the human environment. An effect on a part of the environment may be either direct or indirect and beneficial or adverse. If the environmental effects of the action are determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact are the final environmental documents required by NEPA. If an analysis concludes that the action is a major Federal action that would significantly affect the human environment, an environmental impact statement (EIS) must be prepared.

NEPA significance is determined by considering both the context in which the action will occur and the intensity of the action. The context in which the action will occur includes the specific resources, ecosystem, and the human environment affected. The intensity of the action includes the type of impact (beneficial versus adverse), duration of impact, and other factors (see 40 CFR 1508.27(b)). NEPA regulations contain a listing of considerations to use to determine intensity, as does NOAA Administrative Order 216-6.

*Context:* The context for the proposed action is groundfish fishing in the GOA and the effects of this action are directly limited to the GOA. The proposed action would make various revisions to the MRAs for groundfish using arrowtooth flounder as a basis species in the GOA. The effects on society within the GOA are on individuals directly and indirectly participating in the groundfish fisheries.

*Intensity:* A listing of considerations to determine the intensity of the impacts can be found at 40 CFR 1508.27(b) and in NOAA Administrative Order 216-6. The proposed action would make various revisions to the MRAs for groundfish using arrowtooth flounder as a basis species in the GOA. The intensity of this action is believed to be low because it is not likely to change the harvest of groundfish, but would reduce discards currently required by regulation. The harvest of groundfish would continue to be constrained by TAC and PSC limits.

The environmental impacts generally associated with fishery management actions are effects resulting from interactions with (1) targeted groundfish species, (2) non-specified species, (3) forage species, (4) prohibited species, (5) marine mammals, (6) seabirds, (7) benthic habitat and essential fish habitat, (8) the ecosystem, and (9) the economic and social conditions. This action would have no impacts on non-specified species, forage species, prohibited species, seabirds, habitat, or the ecosystem not previously considered in the harvest specification EIS (NMFS 2007a). Therefore, this analysis will focus on the environmental components that could potentially be affected by this action; stocks of targeted groundfish, Steller sea lions (SSL), and the economic and social conditions.

The affect of the alternatives on social and economic conditions are analyzed in Sections 2 and 3.

### 1.4.1 Effects on Groundfish Stocks

This action proposes three alternatives for MRAs for groundfish in the arrowtooth flounder fishery in the GOA, two of which would increase the MRAs for groundfish using arrowtooth flounder as a basis species in Table 10 to 50 CFR part 679 (Appendix 1) that are applicable to

deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, sablefish, rockfish, Atka mackerel, and skates. None of the alternatives considered would revise the current MRAs for pollock, Pacific cod, the "other species" category (sharks, squid, octopus, and sculpins), or forage fish.

Alternative 1, the status quo or no action alternative, would not revise the MRAs for groundfish species in the arrowtooth flounder fishery. Overall the full harvest of the TACs established for the groundfish species have been found to have no adverse effects on the groundfish species (NMFS 2007a). The effect of arrowtooth flounder fishery on groundfish species is limited primarily by the TAC established for arrowtooth flounder and by the amount of the halibut PSC allowed in the trawl fisheries. For these reasons, Alternative 1 would have no impacts on groundfish stocks beyond those analyzed in the Groundfish Harvest EIS (NMFS 2007a).

Under Alternatives 2 and 3, the MRAs for groundfish in the arrowtooth flounder fishery would be increased from current levels. Increased MRAs would allow increased retention of groundfish closed to directed fishing in the arrowtooth flounder fishery. Increased retention of these incidentally caught groundfish would reduce discards. The opportunity for increasing retention may result in an increased catch of these incidental catch species in the arrowtooth flounder fishery. However, even if the amounts of groundfish retained in the arrowtooth flounder fishery increased, total removals of each species would be maintained within the TACs for each species established through the harvest specifications process. The impacts of the harvest strategies and resulting TAC amounts were analyzed in the Alaska Harvest Specifications Environmental Impact Statement (NMFS 2007a). This proposed action would have no additional impacts on the GOA environment beyond those analyzed in the EIS.

Estimates of discards in the groundfish fisheries are based on observer estimates which are not as accurate as landing and production reports. By allowing increased retention of groundfish in the arrowtooth flounder fisheries estimates of catch would be improved. Under Alternatives 2 and 3 the principal benefits would be to allow vessels participating in the arrowtooth flounder fishery the opportunity to reduce discards, as would be required under Alternative 1, of otherwise marketable groundfish and increase the utilization of these groundfish while still constrained by TAC limitations.

### 1.4.2 Steller Sea Lions

The eastern and western distinct population segments (DPS) of Steller sea lions (SSLs) and their designated critical habitat occur in the GOA. The western DPS is listed as endangered and the eastern DPS is listed as threatened under the Endangered Species Act (ESA). NMFS has jurisdiction under the ESA over SSLs and is responsible for the conservation and recovery of the species. To ensure the Alaska groundfish fisheries are not likely to result in jeopardy of extinction or adverse modification of critical habitat, SSL protection measures were implemented in 2003 and further revised in 2004 for the GOA (68 FR 204, January 2, 2003 and 69 FR 75865, December 20, 2004). These protection measures control the overall harvest of principal prey species (pollock, Pacific cod, and Atka mackerel) and provide temporal and spatial dispersion of harvests to avoid competition for prey between SSLs and the groundfish fisheries.

Three types of effects on SSLs could occur from the groundfish fisheries. First, groundfish fisheries incidentally take SSLs during fishing operations. Second, groundfish fisheries also may disturb SSLs so that they are unable to perform behaviors necessary for survival such as foraging, resting and reproduction. The third potential effect of the groundfish fisheries on SSLs is the potential competition for the prey species pollock, Pacific cod, and Atka mackerel.

The alternatives considered in this analysis would not result in changes in the fisheries that are likely to increase the potential for incidental takes or disturbance of SSLs because the alternatives do not propose measures that are likely to change the location or timing of the arrowtooth flounder fishery or the gear type that would used in this fishery in a manner that would increase interactions with SSLs. The MRAs for pollock and Pacific cod are not proposed to be revised under any of the alternatives and management of these species will remain as described in the management measures considered in the SSL Protection Measures SEIS (NMFS 2001). Because Alternative 1 makes no change to the management of the GOA fisheries, it would have no effects on SSLs or their designated critical habitat regarding prey competition beyond those already considered under previous consultations.

The SSL protection measures in place for Atka mackerel in the GOA prohibit directed fishing for Atka mackerel at any time during the year anywhere in the GOA. Atka mackerel is placed on bycatch status at the beginning of each year. Amounts of Atka mackerel up to the MRA may be retained, but catch of Atka mackerel in excess of the MRA must be discarded. Alternative 1 would leave the MRA for Atka mackerel in the arrowtooth flounder fishery unchanged at 0 percent. Alternative 2 would raise the MRA for Atka mackerel in the arrowtooth flounder fishery from 0 percent to 20 percent, while Alternative 3 would raise the MRA for Atka mackerel to 5 percent. By increasing the MRA, Alternatives 2 and 3 would allow increased retention of Atka mackerel in the arrowtooth flounder fishery. The concern for SSLs would be if allowing increased retention of Atka mackerel would encourage fishermen to catch more Atka mackerel because they now could retain some or all of it.

To understand the potential impacts of the alternatives on SSL, we need to understand the current conditions for SSL in the area, their use of Atka mackerel during the year, and how that use may overlap with potential fishing activities. Counts of non-pup sea lions in 2006 were essentially unchanged from 2004 counts in the eastern and western survey areas in the GOA and have increased between 2000 and 2004 (Fritz et al. 2006). In a study of sea lion scats between 1999 and 2005, Atka mackerel was an important part of the sea lions' diet during summer months in the Western GOA (Table 9).

Tables 4 through 7 show the catch of Atka mackerel associated with the arrowtooth flounder fishery from 2003 through 2006. The catch of Atka mackerel in this fishery has been very low (42 mt in 2003, 2 mt in 2004 and 2006, and 9 mt in 2005). The 2007 Atka mackerel TAC is 1,500 mt and the acceptable biological catch is 4,700 mt. Therefore, recent catches of Atka mackerel in the arrowtooth flounder fishery has represented a small proportion of the total catch of Atka mackerel in all GOA groundfish fisheries. The full harvest of the Atka mackerel TAC within the constraints of the SSL protection measures (closure to directed fishing) is not expected to increase competition to the point of having a population effect on SSLs because the TAC is well below the acceptable biological catch. In addition, as described in Section 1.3.3, there is very little targeting of arrowtooth flounder in the summer months. Therefore, as long as the arrowtooth flounder fishery continues to occur primarily outside of summer months, there is little

likelihood of an increased total catch of Atka mackerel in the Western GOA during the time of the year that Atka mackerel appears to be most important as SSL prey under either Alternative 2 or 3.

However, if the arrowtooth flounder fishery does occur in the summer months in the future and if increasing the MRA for Atka mackerel leads to an increase in the catch of Atka mackerel within SSL protection areas, these conditions could lead to localized depletion of Atka mackerel that were not previously considered. This behavior would have less of an effect in the Eastern and Central GOA where it appears there is very little or no dependence on Atka mackerel by SSLs. Increased catch of Atka mackerel inside the protection areas in the Western GOA in the summer would be more of a concern due to the apparent potential competition for Atka mackerel between SSLs and the fisheries that may occur.

Alternative 3 (increase Atka mackerel MRA to 5 percent) has less of a potential to lead to an increased catch of Atka mackerel in the future than does Alternative 2 (increase MRA to 20 percent). However, the MRA for Atka mackerel in all of the other GOA groundfish fisheries, except arrowtooth flounder, is 20 percent already. Therefore, Alternative 2 would increase the MRA for Atka mackerel in the arrowtooth flounder fishery to the MRA that applies for all of the other GOA groundfish fisheries. The impact of a 20 percent MRA in all of the other GOA groundfish fisheries was considered in development of the current SSL protection measures and was not identified as a management measure that would lead to localized depletion of Atka mackerel inside SSL critical habitat.

Although it is difficult to predict how an increase in MRAs will change the fishing behavior of participants in the arrowtooth flounder fishery, neither Alternative 2 or 3 is expected to significantly change the timing of the arrowtooth flounder fishery or the total catch of Atka mackerel in this fishery. The catch of Atka mackerel in the arrowtooth flounder fishery has been low in the past and the participants in this fishery have had opportunities in all of the other GOA groundfish fisheries to retain Atka mackerel under the MRAs established in those fisheries. Localized depletion of Atka mackerel was not identified as a concern with a 20 percent MRA for Atka mackerel in these other groundfish fisheries.

## 1.5 Cumulative Effects

NEPA requires that EAs analyze the potential cumulative effects of a proposed action and its alternatives. An EA must consider cumulative effects when determining whether an action significantly affects environmental quality. Cumulative effects are those combined effects on the quality of the human environment that result from the incremental impacts of the proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7, 1508.25(a), and 1508.25(c)). Cumulative impacts can result from individually minor, but collectively significant, actions over time. The concept behind cumulative effects analysis is to capture the total effect of many actions over time that would be missed by evaluating each action individually.

The potential direct and indirect effects of the GOA groundfish fisheries on target species are detailed in the Groundfish Harvest EIS (NMFS 2007a). Direct effects include fishing mortality, changes in biomass, and spatial and temporal concentration of catch that may lead to a change in

the population structure. Indirect effects include the changes in prey availability and changes in habitat suitability. Indirect effects are not anticipated to occur with any of the alternatives analyzed because the proposed action would not change overall fishing practices that indirectly affect prey availability and habitat suitability. To the extent practicable, this analysis incorporates the cumulative effects analysis in the Groundfish Harvest EIS (NMFS 2007a).

No additional past, present, or reasonably foreseeable cumulative negative impacts on the natural and physical environment have been identified that would accrue from any of the alternatives considered for the proposed action. Cumulatively significant negative impacts on these resources are not anticipated with the proposed action because no negative direct or indirect effects on GOA resources have been identified.

## 1.6 Future Considerations and Pending Actions

There are a number of actions that have been implemented or that currently are being developed that will affect the GOA groundfish fisheries, including the arrowtooth flounder fishery.

***2007-2008 GOA Groundfish Harvest Specifications***

The annual harvest specifications establish annual ABC, TAC, PSC and various other catch limits for two year, overlapping cycles. In the final groundfish harvest specifications established for 2007-2008, NMFS increased the TAC for arrowtooth flounder in the Central GOA from 25,000 mt in 2006 to 30,000 mt for the 2007 and 2008 fishing years. This action was taken primarily to avoid regulatory discards of arrowtooth flounder as the fishery develops. Should the 2007 and 2008 TACs for arrowtooth flounder be fully utilized under Alternative 1, regulatory discards of other groundfish species would be expected to increase slightly if the arrowtooth flounder TACs were fully harvested. Halibut mortality in the arrowtooth flounder fishery would also be expected to increase making less halibut mortality available to support other directed groundfish fisheries, most notably the deep-water flatfish and rex sole fisheries.

***Central GOA Rockfish Pilot Program***

The Rockfish Program in the Central GOA began in 2007. Three principal rockfish targets, Pacific ocean perch, northern rockfish, and pelagic shelf rockfish, are allocated to participating user groups. For those vessels fishing in cooperatives specific amounts of associated secondary species (Pacific cod, rougheye and shortraker rockfish, thornyhead, and sablefish) are also allocated. MRAs will not apply for those species and those not taken incidentally may be taken by directed fishing. For those vessels fishing in the limited access fishery lower MRAs then at present will apply. A specific amount of the third seasonal apportionment of halibut mortality from the deep-water complex will be allocated to those vessels participating in cooperatives. The arrowtooth flounder fishery is not expected to have any effect on the Rockfish Program fishery. However the flexibility accorded to vessels participating in the Rockfish Program may allow more vessels to enter the arrowtooth flounder fishery.

***GOA Rationalization***

The development of a Gulf Rationalization program has slowed pending additional social and economic analyses of potential impacts. Still a rationalization program could include many of

the management measures incorporated into the Rockfish Program including a more comprehensive review and revision of MRAs for groundfish as basis species.

***Fisheries Recordkeeping and Reporting Revisions***

NMFS is preparing a regulatory amendment to 50 CFR part 679 that will make several revisions to recordkeeping and reporting requirements. It will implement an interagency electronic reporting system, called E-landings, for use by shoreside seafood processors; provide an option for the use of electronic logbooks rather than paper logbooks by CVs, CPs, and motherships; provide more uniform language; and revise permit-related regulations. These changes are intended to improve the method and procedures for recordkeeping and reporting for the fishery programs administered by NMFS, Alaska Region, the Alaska Department of Fish and Game, and the International Pacific Halibut Commission. E-landings can be currently used to report landings and production data for groundfish statewide, Individual Fishing Quota (IFQ)/Community Development Quota (CDQ) crab and Community of Adak golden king crab, and halibut and sablefish IFQ. E-landings is intended to simplify and standardize reporting across fisheries and make fisheries data more readily and accurately available to fisheries managers and the fishing industry. In the future, the system will include landings and production data reports for shellfish, salmon, and other fisheries.

***Private Sector Actions***

The current development of halibut excluder devices for trawl gear could reduce halibut mortality in the arrowtooth flounder fishery. In the GOA halibut mortality is the major constraint on further development of the arrowtooth flounder and other flatfish fisheries. Several shoreside vessels plan to experiment with using pelagic trawl gear to target arrowtooth flounder in 2007 with the goal of reducing bycatch.

# 2 Regulatory Impact Review: Economic Impacts of the Alternatives

This chapter provides information on the economic and socioeconomic impacts of the alternatives, as required by Executive Order 12866 (E.O. 12866). This chapter includes a description of the purpose and need for the action and the management objects, a description of the alternatives proposed to meet those objectives, identification of the individuals or groups that may be affected by the action, the nature of those impacts (quantifying the economic impacts where possible), and discussion of the tradeoffs.

The preparation of an RIR is required under 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:

> *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 (OMB) 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.

Under the Magnuson-Stevens Act, the United States has exclusive fishery management authority over all marine fishery resources found within the EEZ. The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the Regional Fishery Management Councils. The groundfish fisheries in the Gulf of Alaska (GOA) EEZ are managed under the FMP for Groundfish of the GOA.

The authority to alter the application of MRAs to groundfish fisheries, including changing MRA percentages for groundfish in the arrowtooth flounder fishery in the GOA is granted to NMFS under the Magnuson-Stevens Act. To the extent that MRAs may slow bycatch, the statutory authority for bycatch reduction measures is specifically addressed in Sec. 301(a) of the Magnuson-Stevens Act. That section establishes National Standard 9–Bycatch, which directs the Councils to minimize bycatch to the extent practicable and to minimize mortality of bycatch when it cannot be avoided.

Regulations for the GOA MRAs and how they are calculated are found at 50 CFR 679.20 parts (e) and (f) and in Table 10 to Part 679.

## 2.1 Purpose and Need for Action

In 1994, as a result of Council concern that directed fishing for arrowtooth flounder for the purpose of topping off[2] with other, higher-valued species would result in unacceptably high halibut bycatch rates, NMFS prohibited the use of arrowtooth flounder as a basis for calculating retainable amounts of groundfish species closed to directed fishing. During this period, there were limited markets for arrowtooth flounder, so the species was discarded or rendered into meal. However, the halibut bycatch amounts associated with the arrowtooth flounder were credited against the overall halibut bycatch limits available to other fisheries. Increased halibut bycatch rates could result in reaching halibut bycatch limits before the TACs established for other trawl target fisheries were harvested.

[2] "Topping off" is the intentional targeting of an MRA species that is closed to directed fishing.

In December 1995, NMFS initiated a change to the GOA arrowtooth flounder MRAs after hearing testimony that a limited fishery for GOA arrowtooth flounder exists and that this species should be allowed as a basis species for the retention of pollock and Pacific cod. The change to the GOA arrowtooth flounder MRAs was implemented in 1997, keeping most directed fisheries at zero percent to prevent vessels from topping off, but setting the MRAs for pollock and Pacific cod at 5 percent and for aggregated forage fish was set at 2 percent.

Since 1997, markets for GOA arrowtooth flounder have been developed and this species now supports a viable target fishery. In October 2006, the Council received a proposal from some members of the GOA trawl industry to revise the MRAs for groundfish in the arrowtooth flounder fishery in the GOA. In April 2007, the Council adopted the following problem statement:

> When the MRAs for the directed GOA arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowances at zero for a wide group of species to prevent vessels from using arrowtooth flounder as a basis species for retention since there was no market for arrowtooth flounder. Arrowtooth flounder is now a viable target fishery and efforts to improve retention of many groundfish species utilized by the trawl sectors are restrained by MRAs in the directed GOA arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates as an allocation approach. However, sometimes species managed with MRAs must be discarded, even though economic incentives exist to retain that species. Thus, the MRA forces regulatory discards of some species that might otherwise be retained without undermining the intent of the MRA as a tool to reduce overall harvest rates. This regulatory amendment would evaluate raising the MRAs for some species in the directed GOA arrowtooth flounder fishery to provide increased opportunity for retention of species harvested by the trawl sectors and reduce overall discards in this sector, while not subjecting incidentally caught species to increased allocation concerns.

## 2.2 MRA Regulations

MRA regulations establish the calculation method and MRAs for groundfish species that are closed to directed fishing. The MRA is calculated as a percentage of the retained amount of species closed to directed fishing relative to the retained amount of basis species or species groups open for directed fishing. All MRA accounting is computed based upon processed product that is converted to round weight. Table 10 of 50 CFR part 679 (see Appendix 1) lists retainable percentages for GOA incidental groundfish species used to calculate an MRA. Amounts that are caught in excess of the MRA percentage must be discarded. Current regulations limit vessels to MRAs at any time during a fishing trip.

A fishing trip is defined at 50 CFR part 679.2 as:

> (i) With respect to retention requirements of MRA, an operator of a CP or mothership processor vessel is engaged in a fishing trip from the time the harvesting, receiving, or processing of groundfish is begun or resumed in an area until

(A) The effective date of a notification prohibiting directed fishing in the same area under § 679.20 or § 679.21;
(B) The offload or transfer of all fish or fish product from that vessel;
(C) The vessel enters or leaves an area where a different directed fishing prohibition applies;
(D) The vessel begins fishing with different type of authorized fishing gear; or
(E) The end of a weekly reporting period, whichever comes first.

MRAs are the primary tool NMFS uses to regulate the catch of species closed to directed fishing. The MRA table is a matrix of proportions representing a range of rates of expected or accepted incidental catch of species closed to directed fishing relative to target species. As a management tool, MRAs rely on the ability of the vessel operator to selectively catch the target species. The target species is called a basis species in regulation. The species closed to directed fishing is the incidental species. The MRA percentages are intended to slow the rate of harvest of a species when insufficient TAC or PSC amounts are available to support a directed fishery.

NMFS prohibits directed fishing for a species to avoid reaching a TAC (typically established for conservation reasons), reaching an amount or percent of groundfish included in the annual specifications for a gear and species or species group, or for a prohibited species limit (e.g., halibut limits). When NMFS prohibits directed fishing, retention is allowed up to an amount calculated with the MRA. The MRA table 10 at 50 CFR part 679, shows retainable proportions of incidental species relative to species open to directed fishing. Vessel operators calculate the MRA through three basic steps. First, they identify and calculate the round weight of the basis (or target) species on board. Next, they identify the appropriate fraction from the MRA table, and then multiply that rate against the round weight of the basis species. The calculated maximum amount limits retention of the incidental species. A vessel will typically discard catch of the incidental species in excess of that amount to avoid violation of current regulation. The catcher/processor vessel (CP) operator calculates the MRA at any time for the duration of the fishing trip, often referred to as an "instantaneous" calculation. The shoreside catcher vessel (CV) operator calculates the MRA upon returning to port for delivery of retained catch.

A groundfish fishing trip begins when fishing gear is deployed by a vessel and meets any of the regulatory conditions of a fishing trip at § 679.2. By regulation, several conditions end a trip for a CP sectors (based on whichever condition occurs first): (1) NMFS prohibits directed fishing for any species in the Federal reporting area where the vessel is fishing, (2) the vessel offloads, (3) the vessel moves into an area where a directed fishing closure exists, (4) the vessel switches gear, or (5) the weekly reporting period ends. A trip defines the period during which a vessel operator calculates the amount of incidental species retained.

At the time NMFS prohibits directed fishing on a groundfish species, MRAs buffer the amount of non-directed species catch occurring in the directed fishery. Incidental catch of a species may still occur when that species is open to directed fishing, because more than one species may be open to directed fishing at any given point in time.

For several incidental/basis species combinations, the use of low MRA rates may reduce the incentive for topping off that would occur in the absence of this tool. In these cases, the MRAs represent the expected catch of an incidental species absent deliberate action by the vessel operator to maximize that incidental catch. The requirement to not exceed MRA proportion at

any time during a trip, limits the vessel operators' ability to maximize catch. This restriction is used to limit total catch of species low in TAC amount (relative to the species caught in the directed fisheries), at greater risk of being caught in excess of the overfishing level, and high value. Some rockfish species and sablefish meet these criteria in the GOA.

Current regulations establish a relatively high MRA for particular species. For example, a generous rate of 35 percent for arrowtooth flounder as an incidental species is applied to open groundfish targets as a basis species (Appendix 1). Experience of NMFS managers demonstrated that the several directed trawl fisheries incurred high arrowtooth flounder incidental catch rates. The higher MRA allows for increased indirect targeting on arrowtooth flounder. For other species where restricting catch to an incidental rate is not a consideration, regulations establish a default MRA rate of 20 percent.

## 2.3 Description of Alternatives

The alternatives establish MRAs for incidental catch species relative to arrowtooth flounder as a basis species over a range of values. Alternative 1 maintains the existing MRA percentages, which are zero with the exception of pollock (5 percent), Pacific cod (5 percent), other species (20 percent), and forage fish (2 percent). Alternative 2 would increase the MRA percentages for most species to 20 percent, while Alternative 3 would increase the MRA percentages for most species at a more modest level compared to Alternative 2. Table 1 lists the MRA percentages under each of the alternatives for comparison. Note that the basis species under each alternative is arrowtooth flounder and that the MRA percentages for each incidentally catch species are found in the columns.

NMFS' Catch Accounting System (CAS) calculates single targets based on all retained catch and may include several species opened to directed fishing that are caught together. Targets are assigned to CPs on the basis of a week and to CVs on the basis of a landing. These data generally represent aggregate catch of multiple landing reports from CVs and weekly production or observer reports from CPs where arrowtooth flounder is calculated as the most prevalent species retained.

### 2.3.1 Alternative 1: Status Quo (No Action)

Under this alternative the MRAs of incidental catch of groundfish relative to arrowtooth flounder as a basis species are unchanged. These amounts are listed under Alternative 1 in Table 1 and in Table 10 to 50 CFR part 679 (Appendix 1). Under this alternative only pollock, Pacific cod, and species which comprise the "other species" complex (squid, shark, octopus, and sculpins) and forage fish may be retained relative to arrowtooth flounder as a basis species. All other incidental species must be discarded relative to retained arrowtooth flounder.

Many incidental species assigned an MRA of zero are caught in conjunction with arrowtooth flounder when the incidental species are open to directed fishing. Under those conditions retention of the incidental species is not restricted. Retention of incidental species is restricted only when the fishery is closed to directed fishing due to TAC considerations (e.g., skates are closed all year to directed fishing) or when limited by a trawl halibut mortality closure.

### 2.3.2 Alternative 2: Set MRAs as per Industry Proposal

Under this alternative, MRAs for incidental catch of groundfish relative to arrowtooth flounder as a basis species would be established at the proposed levels (see Table 1). The intent of the proposal is to reduce regulatory discards and increase utilization of marketable fish. The proposal could also reduce violations of the MRA restrictions incurred when vessels are unable to completely discard incidentally caught species that are currently restricted to zero retention. Compared to Alternative 1, the MRAs for pollock, Pacific cod, "other species", and forage fish are unchanged. The remaining basis species are increased. Sablefish and rockfish are raised to 1 percent and 5 percent respectively. Flatfish species, skates, and Atka mackerel are increased from 0 to 20 percent.

Because pollock and Pacific cod are fully utilized in directed fisheries and are forage species for the endangered Steller sea lion, it is the intent of the alternative to limit incidental catch so as not to increase the potential for topping off. The increases in the MRA for rockfish and sablefish are based on estimates of the incidental catch rates (Tables 4 through 7) and are proposed to reduce regulatory discards of marketable fish without providing an incentive to top off.

### 2.3.3 Alternative 3: Set MRAs near Recent High Catch Levels Associated with the Arrowtooth Flounder Fishery

Under Alternative 3, MRAs for incidental catch relative to arrowtooth flounder as a basis species would be set near recent high annual catch rates of species landed in conjunction with arrowtooth flounder (see Table 1).

Like Alternatives 1 and 2, under Alternative 3, the MRAs are unchanged from status quo for pollock, Pacific cod, other species, and forage fish to respond to concerns expressed in the industry proposal. Alternative 3 MRAs are unchanged for rockfish and sablefish compared to Alternative 2 and lower for deep-water flatfish, rex sole, flathead sole, shallow-water flatfish, Atka mackerel, and skates. The rates for deep-water flatfish, rex sole, flathead sole and shallow-water flatfish were derived from Tables 4 through 7. The highest rate for an individual specie or species group across the years was identified and rounded up to the nearest 5 percent.

The intent of this alternative is to (1) reduce regulatory discards and improve the utilization of groundfish incidentally taken in the arrowtooth flounder directed fishery, (2) prevent an increase in groundfish catch in the arrowtooth flounder fishery substantially beyond recent incidental catch levels, and (3) continue to keep MRAs for important Steller sea lion prey species (pollock, Pacific cod, and Atka mackerel) at low levels.

## 2.4 Description of the GOA Arrowtooth Flounder Fishery

Arrowtooth flounder (*Atheresthes stomias*) range from central California to the eastern Bering Sea and are currently the most abundant groundfish species in the Gulf of Alaska. Prior to 1990, flatfish catch in the GOA was reported as an aggregate of all flatfish species. The principal flatfish targets at that time were rock sole (shallow-water flatfish), rex sole, and Dover sole (deep-water flatfish). Substantial amounts of arrowtooth flounder and other flatfish were discarded at sea as undesired species, size, or sex. Total GOA catch of arrowtooth, including

targeted and incidental catch, has ranged between 13,000 mt (1998) and 27,645 mt (2006) mt in 2006. The catch of arrowtooth flounder in the targeted fishery has increased from 6,767 mt in 1997 to 15,344 mt in 2006. The vast majority of arrowtooth flounder catch is taken by trawl gear. Catches of arrowtooth flounder in recent years have approached established TACs in some areas. In order to reduce potential discards of arrowtooth, the Council raised the TAC for arrowtooth flounder from 5,000 mt to 8,000 mt in the Western GOA in 2001 and from 25,000 mt to 30,000 mt in the Central GOA in 2007.

The MRA regulations identify basis and incidental species retention on different timeframes and species compositions than the CAS target calculations; therefore, Tables 4 through 7 do not show catch associated only with arrowtooth flounder as a basis species. Vessels may retain several species open to directed fishing. If several species are open to directed fishing and are landed together (which is generally the case), the predominate retained species is assigned as the target. The display of annual retained and discarded species within the arrowtooth flounder target therefore does not reflect the MRA proportions, but rather, a dynamic of multiple 'target' species caught together in the trawl groundfish fishery. These tables provide all the species that are caught in conjunction with arrowtooth flounder. The information was calculated from discard rates observed from at-sea sampling and industry reported retained catch. Table 2 includes discarded and retained GOA arrowtooth flounder from 1997 to 2006. Most apparent in Table 2 is the increase in the percent of arrowtooth flounder retained, which increased from a low of 16 percent in 1998 to a high of low of 64 percent in 2005. Table 3 breaks down the retention and discard of arrowtooth flounder by gear type and processing component in 2006. Tables 4 through 7 present the catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system from 2003 through 2006.

The proportion of arrowtooth flounder that is retained has increased in recent years indicating that the species has become a legitimate target. Catch data in Table 2 indicate the retention status of arrowtooth flounder for 1997 through 2006. For the entire groundfish fleet, recent discards (1997 through 2006) of the total arrowtooth flounder catch have ranged between 84 percent in 1998 to 64 percent in 2005. When catches have been assigned by the NMFS catch accounting system (Tables 4 through 7) from 2003 through 2006 the amount of arrowtooth flounder retained has ranged from 72 percent in 2003 to 83 percent in 2006. The absolute amount of arrowtooth flounder has increased as well.

In the GOA the arrowtooth flounder fishery are almost exclusively prosecuted by CPs and CVs using bottom trawl gear. Although arrowtooth flounder is open to other vessel categories and gear types, very small amounts of arrowtooth flounder are harvested by other gear types and then as incidental catch. Table 3 shows that within the trawl catch about 56 percent are taken by CVs and 44 percent by CPs.

The limited amount of arrowtooth flounder taken by hook-and-line gear is incidental to the sablefish and Pacific cod fisheries. Within CVs, the hook-and-line fishery for sablefish takes the vast majority. Additional amounts are taken in the CP hook-and-line fishery for sablefish and their fishery for Pacific cod. Within the CP hook-and-line fisheries, about half of the arrowtooth flounder caught was retained. Within the CV hook-and-line fishery, all arrowtooth flounder was discarded.

Trawl-caught arrowtooth flounder is distributed among several targets and tends to group based on processing mode. Figure 1 shows that CPs take arrowtooth flounder predominately in the arrowtooth flounder target, followed by rex sole, flathead sole, and small amounts in the rockfish target. CVs likewise take the majority of their arrowtooth flounder in the arrowtooth flounder target followed by pollock, shallow-water flatfish (the catch is predominately rock sole), rockfish, and Pacific cod.

In general, the majority of the harvest of arrowtooth flounder occurs during the March to May time frame (see Figure 2). Depending upon the availability of the halibut PSC allowance for the deep-water complex thorough October 1, vessels may also target arrowtooth flounder in October and November if there is remaining halibut PSC available to support the trawl fisheries at that time. Catch patterns for the Central GOA show that most of the directed fishing for arrowtooth flounder occurs in the spring following the closure of the Pacific cod A season. In the Western GOA, most of the directed fishing for arrowtooth flounder occurs during the spring by CP vessels coming from the Bering Sea after the rock sole and yellowfin sole closures. Following the seasonal closures of these fisheries, vessels target arrowtooth flounder until the second seasonal halibut bycatch cap for the deep-water complex is reached, which is most often in May. Generally, after the arrowtooth flounder fishery closes, these vessels shift to several different targets; notably flatfish species in the shallow-water complex, rockfish, and pollock and Pacific cod as the seasonal allowances of these targets become available. The implementation of the Rockfish Pilot Program in the Central GOA in 2007 and potentially Amendment 80 may result shifts in effort and timing of the arrowtooth flounder fishery.

Historically arrowtooth flounder has had limited value compared too many other groundfish species in the GOA. Prior to 1994, the species was used as a very low valued basis species to target species closed to directed fishing. For example arrowtooth flounder was retained on CVs as a basis for retaining sablefish. Once the sablefish and arrowtooth flounder were delivered to a plant, the arrowtooth flounder was either sent to a meal plant or discarded. In 1994, all MRAs relative to arrowtooth flounder were set at 0 percent. In 1997, the MRAs for Pacific cod and pollock were set at 5 percent and for forage fish at 2 percent. The 1994 and 1997 actions shared the intent of improving the use of halibut bycatch mortality relative to the other trawl groundfish targets and slowing the catch rate of sablefish. The 1997 rule also intended to increase utilization of pollock and Pacific cod in the directed arrowtooth flounder fishery. At that time, there were concerns that fishing vessel operators would target arrowtooth flounder to increase the retainable amounts of valuable species closed to directed fishing and increase bycatch amounts of Pacific halibut. Increased halibut bycatch rates could result reaching halibut bycatch limits before the TACs established for other trawl target fisheries were harvested.

Since 1997, markets for arrowtooth flounder have gradually been developing. Although arrowtooth flounder market prices fluctuate widely, this species now supports a viable target fishery. The principle buyers of arrowtooth flounder are China and Japan. The primary product for arrowtooth flounder is the frill, which is the fleshy fins used for engawa, a type of sushi. Engawa, normally a premium sushi made from halibut or Greenland turbot, is more affordable using arrowtooth flounder. Unlike most other flatfish, the frill of the arrowtooth flounder is sufficiently sized to cover the rice on sushi, which is critical in sushi markets. The primary market for arrowtooth flounder engawa is Japan. A secondary product for arrowtooth flounder is fillets. A large portion of the arrowtooth flounder fillets shipped to China are processed and exported to the U.S. markets as inexpensive flounder. Some portion arrowtooth flounder

processed in Japan is also sold as fillets in the Japanese market. Recently, some arrowtooth flounder fillets have shown up in European markets.

Average gross earnings per round metric ton of retained arrowtooth flounder received by both shoreside processors and CP vessels increased from 2001 to 2005 are displayed in Table 8. For shoreside processors, these estimates include the product value of catch from both Federal and State of Alaska fisheries. For CPs, they include only the product value from catch counted against Federal TACs. These price approximations are based on a combination of weekly production reports, Alaska Commercial Operators Annual Reports (COARs), and blend and other catch accounting data, and tend to support anecdotal observations from the Alaska Groundfish Data Bank that prices for this species have increased in recent years. Table 14 provides annual wholesale price per metric ton of GOA Atka mackerel, flatfish, flathead sole, POP, rockfish, and sablefish from 2001 to 2005 for the trawl CP sector.

## 2.5 Expected Effects of the Alternatives

This section provides an analysis of three alternatives: (1) Status Quo/No Action, (2) industry proposed MRAs, and (3) MRAs near recent high incidental catch levels. Assessing the effects of the alternatives involves some degree of speculation. In general, the effects arise from the actions of individual participants in the fisheries under the incentives created by the different alternatives. Predicting these individual actions and their effects is constrained by incomplete information concerning the fisheries, including the absence of complete economic information and well-tested models that predict behavior under different institutional structures. In addition, exogenous factors, such as stock fluctuations, market dynamics, and macro condition in the global economy, will influence the responses of the participants under each of the alternatives.

### 2.5.1 Alternative 1: Status Quo/No Action

Under Alternative 1, the MRAs would not be revised for groundfish species in the GOA directed arrowtooth flounder fishery. Maintaining the existing MRAs would continue to require trawl CVs and CPs to discard any groundfish species that have an MRA of zero percent if those fisheries were closed to directed fishing. For a more detailed description of status quo, see the background section of the Regulatory Impact Review (Section 2.3). Overall, the status quo alternative is likely to result in the continuation of existing practices and patterns. However, in the future, if the price of arrowtooth flounder continues to increase, the economic incentive for trawl vessels to target arrowtooth flounder will likely increase thus potentially resulting in higher regulatory discards of valuable bycatch species.

Frequently, vessels targeting arrowtooth flounder also harvest lesser amounts of shallow and deep-water flatfish or other species, which are open to directed fishing. These flatfish amounts allow for the lawful retention of small amounts of groundfish species harvested with arrowtooth flounder that might otherwise require thorough sorting of catch and at-sea discards. To date, NOAA Fisheries Enforcement has not observed any significant amounts of groundfish that were required to be discarded being retained and landed concurrent with directed arrowtooth flounder landings. In addition, monitoring compliance with MRAs in the arrowtooth flounder fishery has not required high levels of enforcement resources.

## 2.5.2 Alternatives 2 and 3

### 2.5.2.1 Impacts to the Arrowtooth Flounder Fishery

Under Alternatives 2 and 3, trawl sectors targeting GOA arrowtooth flounder could retain a higher percentage of the incidental caught groundfish that are closed to directed fishing. Table 15 provides closure dates for GOA shallow-water and deep-water complex for 2005 and 2006. As noted in Table 15, many of the species are open to directed fishing concurrently with arrowtooth flounder. For purposes of apportioning halibut PSC in the GOA, groundfish species are divided into the deep-water and shallow-water complex. Arrowtooth flounder is grouped with deep-water flatfish, rex sole, sablefish, and rockfish in the deep-water species complex. When the deep-water complex is open to directed fishing, arrowtooth flounder, rex sole, and deep-water flatfish can be retained at rates unrestricted by the MRA tables. Likewise, when the shallow-water complex is open concurrently with the deep-water complex, flathead sole and shallow-water flatfish can be retained without proportional restrictions. However, as shown in Table 15, it is possible the shallow-water complex can close to directed fishing when seasonal halibut PSC allocation for that complex is fully utilized while the deep-water complex is still open for directed fishing. In addition, many of the rockfish species (thornyhead, shortraker, and rougheye) are closed to directed fishing on January 1 due to the insufficient TAC. As a result, these species are placed on bycatch status, and could be retained up to the MRA percentage under Alternatives 2 and 3 in the arrowtooth flounder target fishery.

Given the general trend in the price for arrowtooth flounder, increasing the MRAs for incidentally caught species could provide enough of an economic incentive for the some trawl vessels to target arrowtooth flounder more often. The economic characteristics of the trawl CP and CV sectors vary widely. It is possible that some participants will take into consideration the economic value of the bycatch species in the directed arrowtooth flounder fishery to estimate the benefit of targeting arrowtooth flounder. Under Alternative 1, those groundfish species with an MRA set at zero that are closed to directed fishing must be discarded, regardless of the value of the species. Under Alternatives 2 and 3, high valued bycatch species that are closed to directed fishing could be retained up to the MRA, thus potentially increasing the vessel's net revenue while targeting arrowtooth flounder. In those cases were a vessel is on the margin for targeting arrowtooth flounder under Alternative 1, increasing the MRAs for arrowtooth flounder under Alternatives 2 and 3 could be enough of economic incentive to induce entry into the arrowtooth flounder target fishery.

### 2.5.2.2 Impacts on Species Other than Arrowtooth Flounder

In designing the alternatives for this action, it was the intent to keep the MRA for several species at or near status quo levels to reduce the economic incentive for vessels to use arrowtooth flounder fishery to increase catch of pollock, Pacific cod, sablefish, aggregated rockfish, and forage fish. Despite the increased success of the arrowtooth flounder fishery in recent years, many of the MRA species still command a higher price in the market (see Table 14). As a result, under Alternatives 2 and 3, increased retention of some MRA species is likely over status quo.

At the June 2007 Council meeting, the SSC raised some concerns that increasing MRA for some sensitive species has the potential to create a "top off" fishery. For example, shortraker and rougheye rockfish are both sensitive and valuable species. Any increase in the aggregated

rockfish MRA for GOA arrowtooth fishery has the potential to create an incentive to "top off" on shortraker and rougheye. Table 18 provides a tool to assess the potential for "top off" fisheries to develop. Included in the table are observed trawl tows that targeted GOA arrowtooth flounder between 2003 and 2006. The table shows hauls by percentile for each of the incidental catch species. For example, the arrowtooth flounder haul at the 75$^{th}$ percentile in terms of shortraker/rougheye rockfish, included approximately 3.5 pounds of these species for each one hundred pounds of arrowtooth. The table also shows the total observed tons of the incidental caught species and the number of the hauls in which the incidental catch species was observed. For example, of the 2,536 directed arrowtooth hauls, 792 had shortraker/rougheye rockfish, which totaled 84 tons. The table also includes the average bycatch rate for each incidental catch species determined by dividing the observed metric tons of each of the incidental catch species by observed metric tons of arrowtooth flounder.

For certain specific species (e.g., Pacific cod, pollock, aggregate rockfish and sablefish), the proposed MRAs are designed to accommodate current catch rates and not encourage "top off" fishing. Based on the average bycatch rates for the different incidental species presented in Table 18, it appears that for some species there is a potential for a "top off" fishery to develop. The likelihood for "top off" fishery is higher for those species with proposed MRAs significantly greater then their average bycatch rate, while less likely for species with proposed MRAs at or near their average bycatch rate. For example, using observer data provided in Table 18, the average bycatch rate for shortraker/rougheye is 0.77%. Relative to the proposed MRA for aggregate rockfish (5% for both Alternatives 2 and 3), the data in Table 18 indicates there is sufficient room to accommodate this average bycatch rate. The development of a "top off" fishery for this species and other sensitive species is dependent upon a number of other issues including but not limited to the price of the species, whether there is potential buyer, accessibility of the species, storage availability, and the ability to process the species. In addition, the potential for a vessel to "top off" on a specific species varies across vessels. A vessel with the ability to limit incidental catch while targeting arrowtooth flounder provides more discretion for "topping off" on specific species.

Management will address any increase in the incidental catch or bycatch in GOA arrowtooth flounder fishery by increasing the amount reserved from the directed fishing allowance for these species or by placing these species on prohibited status sooner to remove any incentive for targeting. As noted in the background section of this proposed action, most of the incidental species are assigned MRAs greater than zero relative to the basis species. Few of the relatively high MRAs are fished to their maximum amount or have large impacts on the directed fishery, if one exists, for the incidental species.

#### 2.5.2.3 Halibut PSC Effects

Trawl groundfish fishing is highly influenced by halibut bycatch mortality management in the GOA. Groundfish fisheries are divided into two general categories; the deep-water complex and the shallow-water complex[3]. Each complex is allocated a portion of a 2,000 mt halibut mortality

[3] At §679.21 (d)(3)(iii) these fisheries are defined as follows: (A) Shallow-water species fishery. Fishing with trawl gear during any weekly reporting period that results in a retained aggregate catch of pollock, Pacific cod, shallow-water flatfish, flathead sole, Atka mackerel, and "other species" that is greater than the retained aggregate amount of other GOA groundfish species or species group. (B) Deep-water species fishery. Fishing with trawl gear during any weekly reporting period that results in a retained catch of groundfish and is not a shallow-water species fishery as defined under paragraph (d)(3)(iii)(A) of this section.

limit which is allocated across five seasons. The final season in October is not apportioned between the two complexes (Table 16).

With the development of the arrowtooth flounder fishery, the amount of halibut mortality attributed to the arrowtooth flounder fishery has increased dramatically. Table 10 shows the halibut mortality in the arrowtooth flounder fishery has increased from 78 mt in 1997 to 616 mt in 2006. This increase reduces the halibut mortality available to support the other directed groundfish fisheries in the trawl deep-water complex (deep-water flatfish, rex sole, and rockfish) from January 20 to October 1 and to all groundfish fisheries after October 1.

Harvest of the deep-water flatfish TAC has historically been limited, in part, because of halibut PSC constraints. The TAC set for deep-water flatfish includes Dover sole, Greenland turbot, and deep sea sole. Historically, the TAC for deep-water flatfish has been relatively small. The 2006 Western Gulf TAC was set at 420 mt and the Central Gulf TAC was set at 4,139 mt. During the 2006 fishing year, only 8 mt (2 percent) of the Western Gulf deep-water flatfish TAC, and 372 mt (9 percent) of the Central Gulf deep-water flatfish TAC, were harvested. Deep-water flatfish harvests in previous years were reported to be at similar levels.

Rex sole and arrowtooth flounder are other deep-water flatfish species that are prized by the trawl sectors and harvested under the deep-water species complex allotment. These flatfish species are also constrained by halibut mortality limits. During the 2006 fishing year, 30 percent, 53 percent, and 0 percent of the rex sole TACs were harvested in the Western, Central, and West Yakutat areas of the GOA respectively. During the 2006 fishing year, 26 percent, 102 percent, and 1 percent of the arrowtooth flounder TACs were harvested in the Western, Central, and West Yakutat areas of the GOA respectively. Although the arrowtooth flounder market is currently showing some signs of market saturation through weakening prices, the markets in the future are likely to accept additional deliveries of these species if they can be harvested. The primary constraint on their harvest is the availability of halibut PSC.

A specific amount of halibut PSC mortality is apportioned to the deep-water species complex (Table 17). The deep-water species complex allotment is set for the entire GOA. The allotment is not divided by sub-area in the GOA. Therefore when the halibut mortality allotment for the deep-water complex is taken, all the deep-water fisheries in the GOA are closed to directed fishing.

Information on deep-water closures that occurred as a result of halibut mortality in the GOA is provided in Table 1. The information provided in that table shows that halibut bycatch has traditionally caused fisheries in this group to close. Recall that these closures are Gulf-wide, so the closures apply to the Western, Central, West Yakutat, and Eastern Areas of the GOA.

Increasing the MRAs for the directed arrowtooth flounder fishery under Alternatives 2 and 3 would likely increase the demand for halibut PSC that is apportioned to the deep-water species complex. Given that halibut PSC is not apportioned between trawl sectors, the pace of fishing could increase as trawl vessels race to harvest more of the species in the deep-water complex fisheries before halibut PSC is fully utilized.

Trawl vessels that participate in GOA fisheries are expected to continue to harvest deep-water complex species that allow them to generate the greatest profits within the PSC halibut bycatch limits. Other flatfish targets (shallow-water flatfish, rex sole, flathead sole, deep-water flatfish) are far less abundant in the GOA than arrowtooth. Vessels targeting these flatfish species receive higher prices per mt but lower catches per fishing day compared to arrowtooth. What arrowtooth flounder lacks in value it makes up for in volume. An average shoreside trawl vessel can fill its fish holds in a single day. Now that markets exist for arrowtooth flounder it becomes an economic decision for the trawl fleet to decide whether to use the halibut PSC allowance to support a low volume, high value fishery like rex sole or a high volume, low value fishery like arrowtooth.

#### 2.5.2.4 Regulatory Discards

With the exception of pollock, Pacific cod, other species, and forage fish, under Alternative 1, all incidental caught groundfish species closed to directed fishing that are caught while targeting arrowtooth flounder have to be immediately discarded. Under Alternative 2 and 3, incidental caught groundfish species that are closed to directed fishing while targeting arrowtooth flounder could be retained up to the MRA, thus potentially reducing regulatory discards. Given recent actions by the Council in the BSAI to reduce discards, reduction of regulatory discards would likely improve the retention rate for trawlers in the GOA.

Table 12 shows total catch and discard rates in the 2006 GOA trawl arrowtooth flounder target by processing component. It displays the annual general mix of species and the associated discard rates associated with the trawl arrowtooth flounder target.

The multiple species 'arrowtooth flounder target' consists of higher-valued species (all often open to directed fishing) that are retained at a high rate. Table 12 indicates a distinction between processing modes in the types of species retained within the broad arrowtooth flounder target. Figure 1 likewise indicates distinctions between CPs and CVs in targets where arrowtooth flounder is caught.

Table 13 shows the amount of retained catch by processing component by species in descending order. It indicates the preference of retained catch in the more generalized arrowtooth flounder/flatfish target.

The top three species retained by CPs after arrowtooth flounder are rex sole, Pacific cod, and flathead sole. Trawl CPs are predominately part of the offshore component which is very restricted in its ability to directed fish for Pacific cod. Pacific cod in this case could be retained relative to arrowtooth flounder, rex sole, and flathead sole. Some trawl CPs are part of the inshore component. The inshore component has more opportunity to target Pacific cod. When the Pacific cod fishery is open, those vessels could retain it in conjunction with arrowtooth flounder without the MRA restriction.

The top three species retained by CVs after arrowtooth flounder are flathead sole, pollock, and shallow-water flatfish (likely rock sole). Often during the year all three of these species are open concurrently to directed fishing.

Reviewing total and retained catch in the trawl arrowtooth flounder targets reveals that arrowtooth flounder is often a directed fishery and it can be taken in combination with other targets or species open to directed fishing. Depending on the actual incidental catch rates and status of the fisheries, some of the incidental catch of species closed to directed fishing associated with an arrowtooth flounder target may be retained against other species open to directed fishing and taken within the arrowtooth flounder target. Conversely, some species may be discarded because of the limited (or zero) MRAs that are calculated against arrowtooth flounder. To the extent that this occurs, more species may be retained as a result of the proposed changes to the MRAs, thus reducing regulatory discards.

Under the 2006 final groundfish harvest specifications, all skates were closed to directed fishing because most of the available quotas were necessary as incidental catch. Not enough skate TAC was available to conduct a directed fishery. Table 13 shows discard rates for skates ranging from 72 percent for 'other' skates, 49 percent for longnose skates, and 21 percent for big skates. Although a direct relationship between skate discards and the arrowtooth flounder fishery cannot be succinctly demonstrated in the CAS, it may be that some of the discards are associated with arrowtooth flounder MRA restrictions. An increase of the MRA as proposed from 0 percent to 10 or 20 percent will allow increased retention of a species currently discarded relative to arrowtooth flounder.

#### 2.5.2.5 Enforcement Effects

For the CP fleet, compliance with MRAs is enforced during at-sea and dockside boardings, as well as by analysis of Weekly Production Reports and other documents. For the CV fleet, MRAs are enforced at landings. Processors are prohibited from possessing or processing groundfish taken or retained in violation of Magnuson-Stevens Act regulations, including MRA overages. Timely notification of NOAA Fisheries Enforcement relieves this unlawful possession burden. During 2006, the Office of Enforcement processed approximately 70 groundfish "overage" violations. In recent years, the overall numbers of groundfish MRA violations has been declining. About a third of these annual MRA violations occur during the arrowtooth flounder/flatfish directed fisheries, during March-June. Within this arrowtooth flounder/flatfish target, overage species were generally evenly divided between Pacific cod, sablefish and skates.

Under Alternatives 2 or 3, NOAA Fisheries Enforcement does not anticipate any significant increase in the amount of MRA overages. For Pacific cod, no change is anticipated from status quo. For product quality reasons, processors place timely landing requirements upon vessels targeting arrowtooth flounder. It is believed these time limitations, combined with the low MRA amount, would limit the profitability and desirability of topping off activities for sablefish. Under Alternatives 2 and 3, the MRA for skates would increase from zero to either 20% or 10%. Based upon current observations of the fleet, it is not anticipated that overages of skates would increase under either alternative. Qualitatively, there is an expectation the incidence of skate MRA overages would decrease under Alternative 2 or 3.

NOAA Fisheries Enforcement does not foresee any significant negative impact upon their resources by this action, and this action may reduce the numbers of administrative violations requiring enforcement response. NOAA Fisheries Enforcement supports the reduction of regulatory discards anticipated by this action.

## 2.6 Effects on Net Benefits to the Nation

Net benefits to the Nation would likely increase under Alternatives 2 and 3 relative to Alternative 1. The difference in net benefits to the Nation between Alternatives 2 and 3 are small, with Alternative 2 having slightly more benefits to the Nation compared to Alternative 3 due to higher MRAs in Alternative 2. Under Alternative 1, the current management of GOA arrowtooth flounder would continue, thus the net benefits to the Nation would likely remain close to their current level under this alternative. Contributing to the increase in net benefits to the Nation under Alternatives 2 and 3 is the increase in retention of incidental caught GOA groundfish species up to the MRA, which under Alternative 1 require discarding. The increased retention of incidental catch in the arrowtooth flounder directed fishery would likely increase the net value to the trawl sectors thus increasing producer surplus.

# 3 Initial Regulatory Flexibility Analysis (IRFA)

## 3.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) evaluates the impacts on small entities of alternatives designed to revise the maximum retainable amounts (MRAs) of groundfish that may be retained in the arrowtooth flounder fishery in the Gulf of Alaska management area of the EEZ off Alaska.

This IRFA addresses the statutory requirements of the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996 (5 U.S.C. 601-612).

## 3.2 The Purpose of an IFRA

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

## 3.3 What is Required in an IFRA?

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

- 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 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.

## 3.4 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 business. 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 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 $4.0 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 $4.0 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 an 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 and subcontractor are treated as 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 fewer than 50,000.

## 3.5 Need for and Objectives of the Proposed Rule

In 1994, as a result of Council concern that directed fishing for arrowtooth flounder for the purpose of topping off with other, higher-valued species would result in unacceptably high halibut bycatch rates, NMFS prohibited the use of arrowtooth flounder as a basis for calculating retainable amounts of groundfish species closed to directed fishing. During this period, there were limited markets for arrowtooth flounder, so the species was discarded or rendered into meal. However, the halibut bycatch amounts associated with the arrowtooth flounder were credited against the overall halibut bycatch limits available to other fisheries. Increased halibut bycatch rates could result in reaching halibut bycatch limits before the TACs established for other trawl target fisheries were harvested.

In December 1995, NMFS initiated a change to the GOA arrowtooth flounder MRB [MRAs were referred to as MRBs at the time of this rule] after hearing testimony that a limited fishery for GOA arrowtooth flounder exists and that this species should be allowed as a basis species for the retention of pollock and Pacific cod. The change to the GOA arrowtooth flounder MRAs was implemented in 1997, keeping most directed fisheries at zero percent to prevent vessels from topping off, but setting the MRAs for pollock and Pacific cod at 5 percent and for aggregated forage fish was set at 2 percent.

Since 1997, markets for GOA arrowtooth flounder have been developed and this species now supports a viable target fishery. In October 2006, the Council received a proposal from some members of the GOA trawl industry to revise the MRAs for groundfish in the arrowtooth flounder fishery in the GOA. In April 2007, the Council adopted the following problem statement:

> When the MRAs for the directed GOA arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowances at zero for a wide group of species to prevent vessels from using arrowtooth flounder as a basis species for retention since there was no market for arrowtooth flounder. Arrowtooth flounder is now a viable target fishery and efforts to improve retention of many groundfish species utilized by the trawl sectors are restrained by MRAs in the directed GOA arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates as an allocation approach. However, sometimes species managed with MRAs must be discarded, even though economic incentives exist to retain that species. Thus, the MRA forces regulatory discards of some species that might otherwise be retained without undermining the intent of the MRA as a tool to reduce overall harvest rates. This regulatory amendment would evaluate raising the MRAs for some species in the directed GOA arrowtooth flounder fishery to provide increased opportunity for retention of species harvested by the trawl sectors and reduce overall discards in this sector, while not subjecting incidentally caught species to increased allocation concerns.

## 3.6 Objectives of and Legal Basis for the Proposed Action

The objective for this proposal is to provide additional opportunities for members of the trawl CP and CV sector to retain an increased amount of selected groundfish species while not subjecting incidentally caught species to increased conservation concerns. This objective is encompassed by authorities contained in the Magnuson-Stevens Act. Under the Magnuson-Stevens Act, the United States has exclusive management authority over all living marine resources found within its EEZ. The management of marine fishery resources is vested in the Secretary of Commerce (Secretary), with advice from the Regional Fishery Management Councils. The groundfish fisheries in the EEZ off Alaska are managed under the Fishery Management Plan (FMP) for Groundfish of the Bering Sea and Aleutian Islands (BSAI) and GOA.

Statutory authority for measures designed to reduce bycatch is specifically addressed in Sec. 600.350 of the Magnuson-Stevens Act. That section establishes National Standard 9--Bycatch, which directs the Councils to minimize bycatch to the extent practicable or minimize mortality when bycatch cannot be avoided.

Regulations for the GOA MRAs and how they are calculated are found at 50 CFR 679.20 parts (e) and (f) and in Table 10 to Part 679.

The Magnuson-Stevens Act is the legal umbrella under which the groundfish fisheries of the BSAI and GOA are managed. In the Alaska region, the North Pacific Fishery Management Council is responsible for preparing management plans for marine fishery resources requiring conservation and management. NOAA Fisheries, under the U.S. Department of Commerce, is charged with carrying out the Federal mandates with regard to marine fish, once they are approved by the Secretary. NOAA Fisheries Alaska Regional Office and Alaska Fisheries Science Center reviews the management actions recommended by the Council.

## 3.7 Number and Description of Small Entities Regulated by the Proposed Action

The entities directly regulated by this action are those CPs and CVs that target arrowtooth flounder in the EEZ of the GOA using trawl gear. These are the vessels that comprise the universe of small entities that would be regulated by the proposed action. Some trawl vessels along with fixed gear vessels incidentally catch arrowtooth flounder in other directed fisheries but most of this arrowtooth flounder is subsequently discarded.

Estimates on the number of CV trawl vessels that caught less than $4.0 million ex-vessel value of directed GOA arrowtooth flounder is 18. Estimates showed that there were no CP trawl vessels that caught less than $4.0 million wholesale value that directed on GOA arrowtooth flounder.

Alternatives 2 and 3 would provide an opportunity to retain additional, economically valuable groundfish species in the arrowtooth flounder directed fishery. This would be beneficial to the affected small entities. No negative impacts on small entities are associated with either Alternative 2 or 3.

## 3.8 Recordkeeping and Reporting Requirements

MRA accounting under the status quo (Alternative 1) is tracked by operators and audited by enforcement through comparison of the weight of processed product on Daily Cumulative Production Logbook (DCPL) reports for both basis and incidental species, and expanding those weight estimates by the published product recovery rates at 50 CFR 679. This review process would not change for Alternatives 2 or 3, and there will be no change to recordkeeping and reporting requirements under either of the proposed action alternatives.

## 3.9 Description of Significant Alternatives

Two additional alternatives were considered, but not carried forward. These alternatives are described in Section 1.2.4. One alternative would have set the MRAs for incidental groundfish caught in the arrowtooth flounder directed fishery at levels equal to the MRAs established for incidental species caught in other groundfish targets in the deep-water complex. The second alternative would have set MRAs at levels equal to recent average (2003 through 2006) catch in the arrowtooth flounder fishery. However, neither of these alternatives would have accomplished the stated objectives of the proposed action. The first alternative would have encouraged topping off of pollock, Pacific cod, sablefish, and rockfish in the arrowtooth flounder fishery, which is not consistent with the objectives of the proposed action. The second alternative has less potential to reduce regulatory discards than Alternatives 2 and 3..

# 4 Consistency with Applicable Law and Policy

## 4.1 Magnuson-Stevens Act

### 4.1.1 National Standards

The Council's overarching mandate to guide it in managing bycatch is National Standard 9 which 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."

This amendment proposed to increase the MRAs for the directed GOA arrowtooth flounder directed fishery for selected species that are caught mostly by the trawl CV and CP sectors. As a result, the proposed action is consistent with National Standard 9.

***Section 303(a)(9) – Fisheries Impact Statement***

Section 303(a)(9) of the Magnuson-Stevens Act requires that any plan or amendment include a fishery impact statement which shall assess and describe the likely effects, if any, of the conservation and management measures on a) participants in the fisheries and fishing communities affected by the plan or amendment; b) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants taking into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries.

The alternative actions considered in this analysis are described in Chapter 2 of this document. The impacts of these actions on participants in the fisheries and fishing communities are evaluated in the RIR, Chapter 5.

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Anchorage Fish and Wildlife Field Office. Available from NMFS website: http://www.fakr.noaa.gov/protectedresources/seabirds.html

# 6 Agencies and Individuals Consulted

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# Tables

**Table 1. Comparison of Maximum Retainable Amounts (Percentages) of Groundfish in the Arrowtooth Flounder Fishery in the Gulf of Alaska under Alternatives 1 through 3.**

| Incidental Catch Species | Alternative 1 % | Alternative 2 % | Alternative 3 % |
|---|---|---|---|
| Pollock | 5 | 5 | 5 |
| Pacific cod | 5 | 5 | 5 |
| Deep-water flatfish | 0 | 20 | 5 |
| Rex sole | 0 | 20 | 10 |
| Flathead sole | 0 | 20 | 15 |
| Shallow-water flatfish | 0 | 20 | 5 |
| Sablefish | 0 | 1 | 1 |
| Aggregated rockfish | 0 | 5 | 5 |
| Atka mackerel | 0 | 20 | 5 |
| Skates[1] | 0 | 20 | 10 |
| Other Species[1] | 20 | 20 | 20 |
| Forage fish | 2 | 2 | 2 |

[1] For the years 2004 through 2006.

**Table 2. Total TAC, catch, and disposition of GOA arrowtooth flounder from 1997 through 2006**

| Year | Annual TAC (mt)) | Total (mt) | Discarded (mt) | Retained (mt) | Percent retained |
|---|---|---|---|---|---|
| 1997 | 35,000 | 16,427 | 13,442 | 2,985 | 18 |
| 1998 | 35,000 | 13,000 | 10,943 | 2,057 | 16 |
| 1999 | 35,000 | 16,208 | 11,943 | 4,265 | 26 |
| 2000 | 35,000 | 22,982 | 13,044 | 9,938 | 43 |
| 2001 | 35,000 | 19,964 | 13,345 | 6,619 | 23 |
| 2002 | 38,000 | 20,413 | 10,381 | 10,032 | 49 |
| 2003 | 38,000 | 30,215 | 12,890 | 17,325 | 57 |
| 2004 | 38,000 | 15,325 | 6,665 | 8,660 | 56 |
| 2005 | 38,000 | 18,300 | 6,502 | 11,798 | 64 |
| 2006 | 38,000 | 27,645 | 11,617 | 16,208 | 58 |
| 2007 | 43,000 | | | | |

**Table 3. 2006 Gulf of Alaska arrowtooth flounder catch by gear type and processing component**

| Gear Type | CPs (mt) | % of Total | CVs (mt) | % of Total | Total Catch (mt) |
|---|---|---|---|---|---|
| Non-pelagic trawl | 11,873 | 48 | 13,098 | 52 | 24,971 |
| Pelagic trawl | 0 | 0 | 2,176 | 100 | 2,176 |
| Trawl total | 11,873 | 44 | 15,274 | 56 | 27,147 |
| | | | | | |
| Hook-and-line | 204 | 43 | 272 | 57 | 477 |
| Grand Total | 12,077 | 44 | 15,546 | 56 | 27,624 |

Note: Jig and pot gear had combined reported catches of less than 20 mt.

**Table 4. 2003 Catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system**

| Groundfish | Discarded (mt) | Retained (mt) | Total (mt) | Percent Retained | Associated Catch Rate[3] (%) |
|---|---|---|---|---|---|
| Arrowtooth flounder | 4,338 | 11,146 | 15,484 | 72 | |
| Atka mackerel | 3 | 39 | 42 | 93 | 0.3 |
| Deep-water flatfish | 136 | 71 | 207 | 34 | 1 |
| Flathead sole | 97 | 311 | 408 | 76 | 3 |
| Other species[2] | 197 | 106 | 303 | 35 | 2 |
| Northern rockfish | 54 | 42 | 96 | 44 | 0.6 |
| Pelagic Shelf Rockfish | 18 | 17 | 35 | 48 | 0.2 |
| Pacific ocean Perch | 646 | 101 | 747 | 14 | 4.8 |
| Other rockfish | 71 | 5 | 76 | 6 | 0.5 |
| Shortraker and Rougheye Rockfish | 12 | 26 | 38 | | 0.2 |
| Thornyheads | 7 | 70 | 77 | 91 | 0.6 |
| All Rockfish[1] | 808 | 260 | 1,069 | 24 | 7 |
| Pacific cod | 351 | 493 | 844 | 58 | 5 |
| Pollock | 69 | 279 | 348 | 80 | 2 |
| Rex sole | 62 | 929 | 990 | 94 | 6 |
| Shallow-water flatfish | 19 | 76 | 95 | 80 | 1 |
| Sablefish | 269 | 76 | 345 | 22 | 2 |

[1] Aggregate catch of all species of rockfish
[2] In 2003 the "other species" category included skates
[3] Ratio of total groundfish catch to total arrowtooth flounder catch

**Table 5. 2004 Catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system**

| Groundfish | Discarded (mt) | Retained (mt) | Total (mt) | Percent Retained | Associated Catch Rate[2] (%) |
|---|---|---|---|---|---|
| Arrowtooth flounder | 1,367 | 4,614 | 5,981 | 77 | |
| Atka mackerel | 2 | 0 | 2 | 0 | 0.02 |
| Big skates | 11 | 183 | 194 | 77 | 3.2 |
| Longnose skates | 0 | 0 | 0 | 0 | 0 |
| Other skates | 25 | 152 | 177 | 86 | 3.0 |
| All Skates | 36 | 334 | 370 | 90 | 6.2 |
| Deep-water flatfish | 12 | 47 | 59 | 20 | 0 |
| Flathead sole | 85 | 702 | 788 | 89 | 13 |
| Other species | 17 | 5 | 22 | 21 | 0.4 |
| Northern rockfish | 10 | 12 | 23 | 55 | 0.4 |
| Pelagic Shelf Rockfish | 3 | 2 | 5 | 48 | 0.1 |
| Pacific ocean perch | 2 | 1 | 3 | 12 | 0.05 |
| Other rockfish | 0 | 0 | 0 | 0 | 0 |
| Thornyheads | 1 | 25 | 26 | 97 | 0.4 |
| Shortraker and Rougheye rockfish | 6 | 24 | 29 | 81 | 0.5 |
| All Rockfish [1] | 22 | 64 | 86 | 25 | 1.4 |
| Pacific cod | 128 | 353 | 481 | 73 | 8 |
| Pollock | 11 | 158 | 170 | 93 | 3 |
| Rex sole | 21 | 206 | 227 | 91 | 4 |
| Shallow-water flatfish | 17 | 253 | 270 | 94 | 5 |
| Sablefish | 29 | 22 | 52 | 43 | 1 |

[1] Aggregate catch of all species of rockfish
[2] Ratio of total groundfish catch to total arrowtooth flounder catch

**Table 6. 2005 Catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system**

| Groundfish | Discarded (mt) | Retained (mt) | Total (mt) | Percent Retained | Associated Catch Rate[2] (%) |
|---|---|---|---|---|---|
| Arrowtooth flounder | 2,062 | 8,653 | 10,716 | 81 | |
| Atka mackerel | 1 | 8 | 9 | 88 | 0.08 |
| Big skate | 12 | 193 | 205 | 94 | 1.9 |
| Longnose skate | 57 | 312 | 369 | 85 | 3.4 |
| Other skate | 130 | 46 | 176 | 26 | 1.6 |
| All skates | 197 | 551 | 748 | 36 | 7 |
| Deep-water flatfish | 89 | 41 | 130 | 32 | 1.3 |
| Flathead sole | 153 | 1,077 | 1,230 | 88 | 11.5 |
| Other species | 121 | 14 | 135 | 10 | 1.3 |
| Northern rockfish | 26 | 8 | 33 | 23 | 0.3 |
| Pelagic Shelf Rockfish | 10 | 22 | 32 | 69 | 0.6 |
| Pacific ocean perch | 68 | 61 | 130 | 47 | 1.2 |
| Other rockfish | 6 | 1 | 7 | 17 | 0.1 |
| Shortraker rockfish | 1 | 5 | 6 | 82 | 0.1 |
| Rougheye rockfish | 0 | 7 | 8 | 97 | 0.1 |
| Thornyheads | 3 | 7 | 9 | 72 | 0.1 |
| All Rockfish[1] | 114 | 112 | 226 | 50 | 2.1 |
| Pacific cod | 163 | 453 | 616 | 74 | 6 |
| Pollock | 15 | 277 | 292 | 95 | 3 |
| Rex sole | 73 | 660 | 733 | 90 | 7 |
| Shallow-water flatfish | 10 | 96 | 106 | 90 | 1 |
| Sablefish | 37 | 64 | 102 | 63 | 1 |

[1] Aggregate catch of all species of rockfish
[2] Ratio of total groundfish catch to total arrowtooth flounder catch

**Table 7. 2006 Catch of groundfish attributed to the arrowtooth flounder fishery by the NMFS catch accounting system**

| Groundfish | Discarded (mt) | Retained (mt) | Total (mt) | Percent Retained | Associated Catch Rate[2] |
|---|---|---|---|---|---|
| Arrowtooth flounder | 2,668 | 12,676 | 15,353 | 83 | |
| Atka mackerel | 1 | 1 | 2 | 60 | 0.01 |
| Deep-water flatfish | 79 | 59 | 138 | 42 | 0.9 |
| Big skate | 37 | 123 | 161 | 77 | 1 |
| Longnose skate | 91 | 40 | 131 | 31 | 0.9 |
| Other skate | 55 | 3 | 59 | 5 | 0.4 |
| All skates | 183 | 166 | 349 | 48 | 2.3 |
| Flathead sole | 61 | 1,200 | 1,260 | 95 | 8 |
| Other species | 138 | 41 | 179 | 23 | 1.2 |
| Northern rockfish | 108 | 33 | 141 | 23 | 0.9 |
| Pelagic Shelf Rockfish | 26 | 104 | 130 | 80 | 0.8 |
| Pacific ocean perch | 181 | 37 | 218 | 17 | 1.4 |
| Other rockfish | 4 | 1 | 4 | 15 | 0.03 |
| Shortraker rockfish | 1 | 11 | 11 | 93 | 0.07 |
| Rougheye rockfish | 9 | 10 | 19 | 54 | 0.1 |
| Thornyheads | 3 | 18 | 21 | 87 | 0.1 |
| All Rockfish [1] | 332 | 225 | 557 | 40 | 3.6 |
| Pacific cod | 156 | 778 | 934 | 83 | 6 |
| Pollock | 84 | 671 | 756 | 89 | 5 |
| Rex sole | 43 | 1,060 | 1,103 | 96 | 7 |
| Shallow-water flatfish | 35 | 504 | 539 | 93 | 4 |
| Sablefish | 102 | 74 | 176 | 42 | 1 |

[1] Aggregate catch of all species of rockfish
[2] Ratio of total groundfish catch to total arrowtooth flounder catch

**Table 8. Wholesale price per metric ton of arrowtooth flounder for the CPs and shoreside processors from 2001 to 2005**

| Year | CP ($ per round metric ton) | Shoreside processor ($ per round metric ton) |
|---|---|---|
| 2001 | 259 | 98 |
| 2002 | 342 | - |
| 2003 | 344 | - |
| 2004 | 751 | 342 |
| 2005 | 717 | 556 |

Notes: A dash indicates that data were not available or were withheld to preserve confidentiality.
Data Source: weekly processor reports, commercial operator's annual report, Blend data 2000 to 2002, catch accounting system 2003 to 2005 for estimates of retained catch. National Marine Fisheries Service

**Table 9. Frequency of occurrence of Atka mackerel in Steller sea lion scat 1999-2005 in the GOA**

| Region/Season | Number of scats analyzed | Percentage of samples containing Atka mackerel |
|---|---|---|
| Eastern GOA | | |
| Summer | 38 | 0 |
| Central GOA | | |
| Summer | 85 | 1.18 |
| Winter | 204 | 1.96 |
| Western GOA | | |
| Summer | 184 | 21.20 |
| Winter | 42 | 0 |

(NMML unpublished data, April 2007)

**Table 10. Comparison of Gulf of Alaska trawl halibut bycatch mortality by target species in 1997 and 2006**

| Target Species | 1997 halibut mortality (mt) | 2006 halibut mortality (mt) |
|---|---|---|
| Deep-water flatfish | 228 | - |
| Rockfish | 261 | 186 |
| Arrowtooth flounder | 78 | 616 |
| Rex sole | 299 | 116 |
| Pacific cod | 604 | 347 |
| Shallow flafish | 451 | 632 |
| Flathead sole | 164 | 24 |
| Other species | 23 | - |
| Pollock | 5 | 82 |
| Total | 2,112 | 2,003 |

**Table 11. Deep-water complex trawl closures triggered by halibut bycatch over the past 5 years**

| Year | Closure 1 | Closure 2 | Closure 3 | Closure 4 | Closure 5 | Closure 6 | Closure 7 |
|---|---|---|---|---|---|---|---|
| 2001 | 25-May | 23-Jul | 21-Oct | | | | |
| 2002 | 24-May | 2-Aug | 13-Oct | 10-Nov | | | |
| 2003 | 16-May | 15-Oct | | | | | |
| 2004 | 19-Mar | 26-Apr | 25-Jul | 1-Oct | | | |
| 2005 | 23-Mar | 8-Apr | 3-May | 24-Jul | 4-Sep | 10-Sep | 1-Oct |

Source: NMFS

**Table 12. GOA trawl arrowtooth flounder target retention and discards by species and processing component for 2006**

| Species | CVs | | CPs | | Both Processing Components | |
|---|---|---|---|---|---|---|
| | Total catch (mt) | Discard rate (%) | Total catch (mt) | Discard rate (%) | Total catch (mt) | Discard rate (%) |
| Arrowtooth flounder | 9,235 | 11 | 6,108 | 28 | 21,452 | 12 |
| Flathead sole | 937 | 3 | 324 | 10 | 1,584 | 4 |
| Rex sole | 385 | 2 | 718 | 5 | 1,821 | 2 |
| Pacific cod | 343 | 7 | 591 | 22 | 1,525 | 10 |
| Pollock | 664 | 9 | 91 | 27 | 847 | 10 |
| Shallow-water flatfish | 484 | 3 | 55 | 37 | 594 | 6 |
| Pacific ocean perch | 44 | 69 | 174 | 86 | 392 | 46 |
| 'Other' species | 119 | 66 | 59 | 100 | 238 | 58 |
| Sablefish | 30 | 44 | 146 | 61 | 323 | 32 |
| Big skate | 157 | 21 | | | 157 | 21 |
| Northern rockfish | 12 | 56 | 129 | 79 | 270 | 40 |
| Deep-water flatfish | 43 | 6 | 95 | 81 | 233 | 34 |
| Longnose skate | 74 | 46 | 56 | 100 | 187 | 49 |
| Pelagic shelf rockfish | 26 | 72 | 103 | 6 | 233 | 11 |
| 'Other' skate | 40 | 98 | 18 | 87 | 77 | 72 |
| Thornyhead rockfish | 5 | 21 | 16 | 10 | 36 | 7 |
| Rougheye rockfish | 17 | 49 | - | - | 17 | 49 |
| Shortraker rockfish | 8 | 8 | 3 | 4 | 14 | 5 |
| 'Other' rockfish | 3 | 78 | 1 | 100 | 6 | 64 |
| Atka mackerel | <1 | 79 | 2 | 39 | 4 | 21 |

**Table 13. GOA trawl gear retained catch by processing component and species in the arrowtooth flounder target for 2006**

| CPs | | CVs | |
|---|---|---|---|
| **Species** | **Retained Catch (mt)** | **Species** | **Retained Catch (mt)** |
| Arrowtooth flounder | 4,417 | Arrowtooth flounder | 8,258 |
| Rex sole | 685 | Flathead sole | 909 |
| Pacific cod | 459 | Pollock | 604 |
| Flathead sole | 291 | Shallow-water flatfish (rock sole) | 469 |
| Pelagic shelf rockfish | 97 | Rex sole | 375 |
| Pollock | 67 | Pacific cod | 319 |
| Sablefish | 57 | Big Skate | 123 |
| Shallow-water flatfish (primarily rock sole) | 35 | Deep-water flatfish | 41 |
| Northern rockfish | 27 | Other skate | 41 |
| Pacific ocean perch | 24 | Longnose skate | 40 |
| Deep-water flatfish | 18 | Sablefish | 17 |
| Thornyhead rockfish | 14 | Pacific ocean perch | 13 |
| Shortraker | 3 | Rougheye | 8 |
| Unidentified Skate | 2 | Shortraker | 8 |
| Atka mackerel | 1 | Pelagic shelf rockfish | 7 |
| | | Northern rockfish | 5 |
| | | Thornyhead rockfish | 4 |
| | | Unidentified Skate | 1 |
| | | Other rockfish | 1 |

**Table 14. Wholesale price per metric ton of GOA groundfish for the CPs from 2001 to 2005 ($ per round metric ton)**

| Year | Atka mackerel | Flatfish | Flathead sole | POP | Rockfish | Sablefish |
|---|---|---|---|---|---|---|
| 2001 | 1,170 | 2,055 | 887 | 378 | 685 | 4,509 |
| 2002 | 1,243 | 1,838 | 868 | 601 | 856 | 4,213 |
| 2003 | 850 | 1,957 | 872 | 665 | 975 | 4,948 |
| 2004 | 370 | 1,866 | 1,296 | 821 | 931 | 4,944 |
| 2005 | 558 | 2,230 | 1,397 | 1,372 | 1,117 | 5,117 |

Data Source: Weekly processor reports, National Marine Fisheries Service

## Table 15. GOA trawl halibut closures by species complex for 2005 and 2006

| 2005 CLOSURES | | | 2006 CLOSURES | | | |
|---|---|---|---|---|---|---|
| | Open | Closed | | Open | Closed | Note |
| **Shallow-water complex** | 20-Jan | 19-Aug | **Shallow-water complex** | 20-Jan | 23-Feb | |
| | 1-Sep | 4-Sep | | 27-Feb | 10-Jun | |
| | 1-Oct | 1-Oct | | 1-Jul | 1-Sep | midnight |
| | | | | 6-Sep | 6-Sep | 12 hr |
| **Deep-water complex** | 20-Jan | 23-Mar | | 20-Sep | 20-Sep | 12 hr |
| | 1-Apr | 8-Apr | | 25-Sep | 25-Sep | 12 hr |
| | 24-Apr | 3-May | | 1-Oct | 8-Oct | |
| | 5-Jul | 24-Jul | | | | |
| | | | **Deep-water complex** | 20-Jan | 27-Apr | |
| | 1-Sep | 4-Sep | | | | |
| | 8-Sep | 10-Sep | | 1-Jul | 5-Sep | |
| | 1-Oct | 1-Oct | **Combined** | 1-Oct | 8-Oct | |

## Table 16. Recent apportionments of Pacific halibut PSC trawl limits between the trawl deep-water species fishery and shallow-water species fishery

| Season | Shallow-water (mt) | Deep-water (mt) | Total (mt) |
|---|---|---|---|
| January 20–April 1 | 450 | 100 | 550 |
| April 1–July 1 | 100 | 300 | 400 |
| July 1–September 1 | 200 | 400 | 600 |
| September 1–October 1 | 150 | Any remainder | 150 |
| **Subtotal January 20–October 1** | 900 | 800 | 1,700 |
| October 1–December 31 | | | 300 |
| **Total** | | | 2,000 |

## Table 17. GOA halibut bycatch allotments in 2005 for the deep-water species complex and dates closure notices were issued

| Season Start | Season End | Amount of Halibut Allocation | Amount of Halibut Mortality |
|---|---|---|---|
| January 20 | April 1 | 100mt | 152mt |
| April 1 | July 5 | 300mt | 255mt |
| July 5 | September 1 | 400mt | 349mt |
| September 1 | October 1 | Any remainder | 38mt |
| October 1 | December 31 | 300mt* | |

Sources: NOAA Fisheries website listings of 2005 Information Bulletins and Final 2005 GOA apportionments.

*No apportionment is made between the shallow-water and deep-water complex during the 5th season (October 1 – December 31).

**Table 18. Proportion of incidental catch of secondary species in observed trawl hauls targeting arrowtooth flounder in the Gulf of Alaska, 2003-2006**

| Species | Hauls with species | Tons | Average Bycatch Rate | 25th Percentile | 50th Percentile | 75th Percentile | 90th Percentile | 95th Percentile | 100th Percentile |
|---|---|---|---|---|---|---|---|---|---|
| Arrowtooth Flounder | 2536 | 11,004 | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| Flathead Sole | 2229 | 876 | 7.96% | 0.0163 | 0.0462 | 0.1440 | 0.3957 | 0.6318 | 0.9918 |
| Pacific Cod | 1937 | 843 | 7.66% | 0.0267 | 0.0705 | 0.1819 | 0.4072 | 0.6024 | 0.9927 |
| Rex Sole | 2257 | 790 | 7.18% | 0.0139 | 0.0560 | 0.1854 | 0.3998 | 0.5970 | 0.9960 |
| Northern Rockfish | 493 | 40 | 0.37% | 0.0045 | 0.0081 | 0.0233 | 0.0755 | 0.1419 | 0.9298 |
| Pacific Ocean Perch | 911 | 217 | 1.97% | 0.0053 | 0.0155 | 0.0619 | 0.2102 | 0.3744 | 0.9953 |
| Shortraker/Rougheye Rockfish | 792 | 84 | 0.77% | 0.0063 | 0.0125 | 0.0348 | 0.1356 | 0.3605 | 0.9944 |
| Thornyhead Rockfish | 252 | 36 | 0.33% | 0.0036 | 0.0203 | 0.1159 | 0.3847 | 0.6581 | 0.9712 |
| Pollock | 1013 | 220 | 2.00% | 0.0083 | 0.0240 | 0.0752 | 0.2142 | 0.3713 | 0.9989 |
| Sablefish | 938 | 189 | 1.72% | 0.0075 | 0.0188 | 0.0573 | 0.1945 | 0.3616 | 0.9841 |
| Skates | 499 | 155 | 1.41% | 0.0214 | 0.0541 | 0.1253 | 0.2580 | 0.3807 | 0.9560 |
| Shallow-water Flatfish | 765 | 148 | 1.35% | 0.0051 | 0.0138 | 0.1011 | 0.3823 | 0.6750 | 0.9979 |
| Deep-water Flatfish | 1152 | 107 | 0.98% | 0.0062 | 0.0133 | 0.0333 | 0.0824 | 0.1434 | 0.9459 |
| Other Species | 398 | 69 | 0.62% | 0.0117 | 0.0314 | 0.0993 | 0.2458 | 0.4756 | 0.9977 |
| Forage Fish | 78 | 26 | 0.23% | 0.0314 | 0.0712 | 0.1281 | 0.2321 | 0.3591 | 0.5135 |
| Atka Mackerel | 188 | 14 | 0.13% | 0.0054 | 0.0093 | 0.0213 | 0.0650 | 0.2118 | 0.7749 |

Source: NORPAC observer data

Note: The 100$^{th}$ percentile denotes the tow with the highest ratio of incidental species catch to arrowtooth flounder catch. For example, for pollock, the 100$^{th}$ percentile was 0.9989. That tow had 0.9989 pounds of pollock for every 1 pound of arrowtooth flounder, a nearly 1:1 ratio.

# Figures

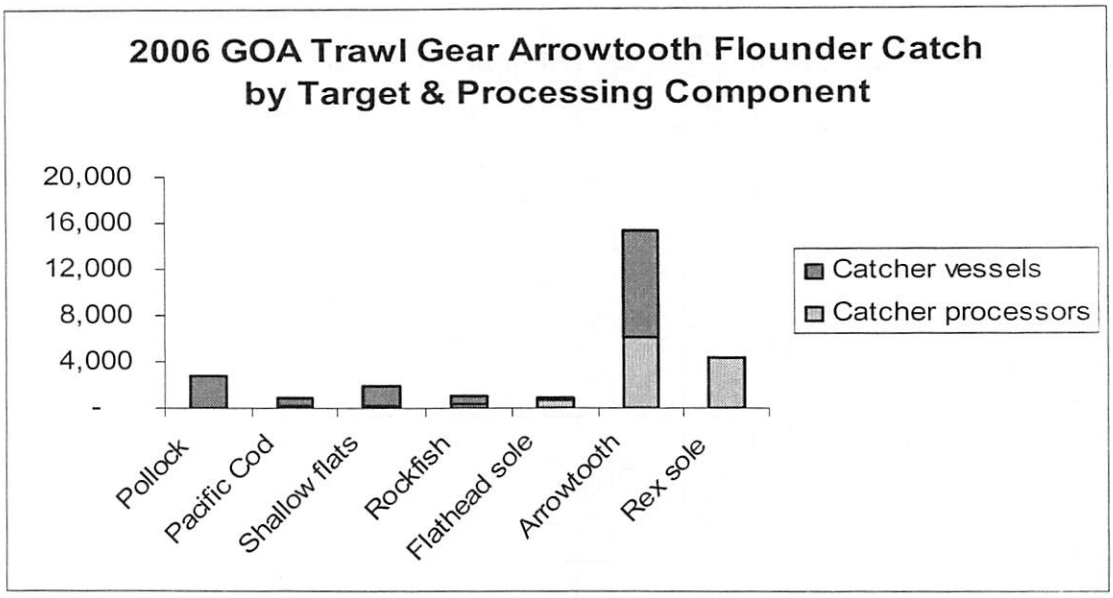


**Figure 1. GOA trawl gear arrowtooth flounder catch by target and processing component for 2006**

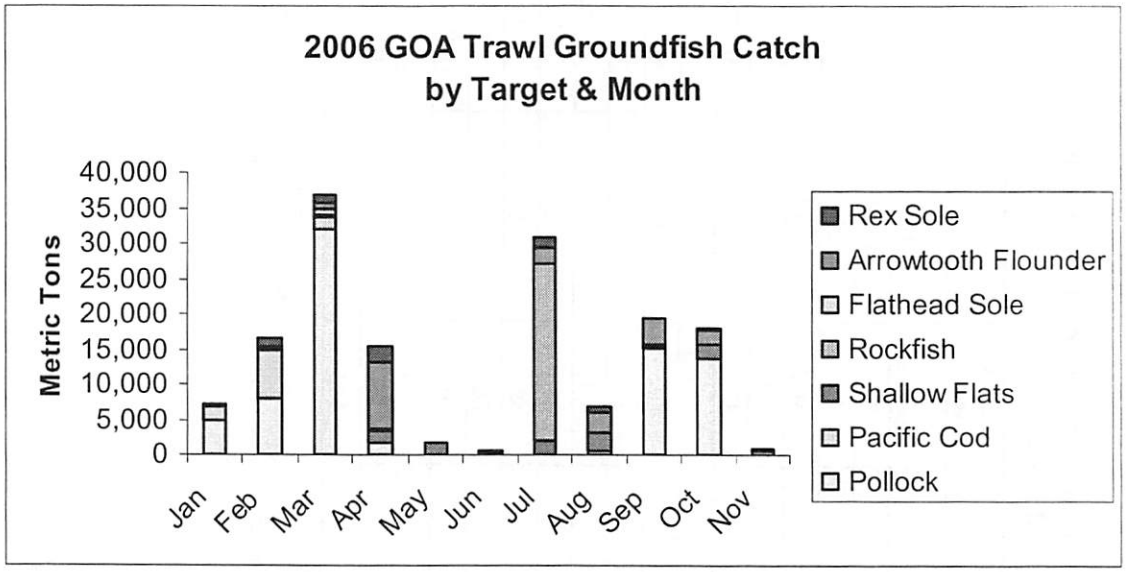


**Figure 2. GOA trawl groundfish catch by target and month for 2006**

# APPENDIX 1. Table 10 to 50 CFR Part 679

Table 10 to Part 679—Gulf of Alaska Retainable Percentages

| BASIS SPECIES | | INCIDENTAL CATCH SPECIES (for DSR caught on catcher vessels in the SEO, see § 679.20 (j)[6]) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | Species | Pollock | Pacific cod | DW flat[2] | Rex sole | Flathead sole | SW Flat [3] | Arrowtooth | Sablefish | Aggregated rockfish[8] | SR/RE ERA [1] | DSR SEO (C/Ps only) [6] | Atka mackerel | Aggregated forage fish[10] | Skates [11] | Other species [7] |
| 110 | Pacific cod | 20 | na[9] | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | 20 | 2 | 20 | 20 |
| 121 | Arrowtooth | 5 | 5 | 0 | 0 | 0 | 0 | na[9] | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 20 |
| 122 | Flathead sole | 20 | 20 | 20 | 20 | na[9] | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| 125 | Rex sole | 20 | 20 | 20 | na[9] | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| 136 | Northern rockfish | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| 141 | Pacific ocean perch | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| 143 | Thornyhead | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| 152/ 151 | Shortraker/ rougheye [1] | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | na[9] | 1 | 20 | 2 | 20 | 20 |
| 193 | Atka mackerel | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | na[9] | 2 | 20 | 20 |
| 270 | Pollock | na[9] | 20 | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | 20 | 2 | 20 | 20 |
| 710 | Sablefish | 20 | 20 | 20 | 20 | 20 | 20 | 35 | na[9] | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| Flatfish, deep water [2] | | 20 | 20 | na[9] | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| Flatfish, shallow water [3] | | 20 | 20 | 20 | 20 | 20 | na[9] | 35 | 1 | 5 | [1] | 10 | 20 | 2 | 20 | 20 |
| Rockfish, other [4] | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| Rockfish, pelagic [5] | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | 1 | 20 | 2 | 20 | 20 |
| Rockfish, DSR-SEO [6] | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 7 | 15 | 7 | na[9] | 20 | 2 | 20 | 20 |
| Skates[11] | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | 20 | 2 | na[9] | 20 |
| Other species [7] | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | 20 | 2 | 20 | na[9] |
| Aggregated amount of non-groundfish species | | 20 | 20 | 20 | 20 | 20 | 20 | 35 | 1 | 5 | [1] | 10 | 20 | 2 | 20 | 20 |

| Notes to Table 10 to Part 679 | | | | | |
|---|---|---|---|---|---|
| 1 | Shortraker/rougheye rockfish | | | | |
| | | SR/RE | shortraker/rougheye rockfish (171) | | |
| | | | shortraker rockfish (152) | | |
| | | | rougheye rockfish (151) | | |
| | | SR/RE ERA | shortraker/rougheye rockfish in the Eastern Regulatory Area. | | |
| | Where numerical percentage is not indicated, the retainable percentage of SR/RE is included under Aggregated Rockfish | | | | |
| 2 | Deep-water flatfish | Dover sole, Greenland turbot, and deep-sea sole | | | |
| 3 | Shallow water flatfish | Flatfish not including deep water flatfish, flathead sole, rex sole, or arrowtooth flounder | | | |
| 4 | Other rockfish | Western Regulatory Area | means slope rockfish and demersal shelf rockfish | | |
| | | Central Regulatory Area | | | |
| | | West Yakutat District | | | |
| | | Southeast Outside District | means slope rockfish | | |
| | | Slope rockfish | | | |
| | | *S. aurora* (aurora) | *S. variegatus* (harlequin) | *S. brevispinis* (silvergrey) | |
| | | *S. melanostomus* (blackgill) | *S. wilsoni* (pygmy) | *S. diploproa* (splitnose) | |
| | | *S. paucispinis* (bocaccio) | *S. babcocki* (redbanded) | *S. saxicola* (stripetail) | |
| | | *S. goodei* (chilipepper) | *S. proriger* (redstripe) | *S. miniatus* (vermilion) | |
| | | *S. crameri* (darkblotch) | *S. zacentrus* (sharpchin) | *S. reedi* (yellowmouth) | |
| | | *S. elongatus* (greenstriped) | *S. jordani* (shortbelly) | | |
| | | In the Eastern GOA only, Slope rockfish also includes *S. polyspinous*. (Northern) | | | |
| 5 | Pelagic shelf rockfish | *S. ciliatus* (dusky) | *S. entomelas* (widow) | *S. flavidus* (yellowtail) | |
| 6 | Demersal shelf rockfish (DSR) | *S. pinniger* (canary) | *S. maliger* (quillback) | *S. ruberrimus* (yelloweye) | |
| | | *S. nebulosus* (china) | *S. helvomaculatus* (rosethorn | | |
| | | *S. caurinus* (copper) | *S. nigrocinctus* (tiger) | | |
| | | DSR-SEO = Demersal shelf rockfish in the Southeast Outside District<br>The operator of a catcher vessel that is required to have a Federal fisheries permit, or that harvests IFQ halibut with hook and line or jig gear, must retain and land all DSR that is caught while fishing for groundfish or IFQ halibut in the SEO. Limits on sale and requirements for disposal of DSR are set out at § 679.20 (j). | | | |
| 7 | Other species | sculpins | octopus | sharks | Squid |
| 8 | Aggregated rockfish | Means rockfish of the genera *Sebastes* and *Sebastolobus* defined at § 679.2 except in: | | | |
| | | Southeast Outside District (SEO) | where DSR is a separate category for those species marked with a numerical percentage | | |
| | | Eastern Regulatory Area (ERA) | where SR/RE is a separate category for those species marked with a numerical percentage | | |

| Notes to Table 10 to Part 679 | | | |
|---|---|---|---|
| 9 | N/A | not applicable | |
| 10 | Aggregated forage fish (all species of the following families) | | |
| | | Bristlemouths, lightfishes, and anglemouths (family *Gonostomatidae*) | 209 |
| | | Capelin smelt (family *Osmeridae*) | 516 |
| | | Deep-sea smelts (family *Bathylagidae*) | 773 |
| | | Eulachon smelt (family *Osmeridae*) | 511 |
| | | Gunnels (family *Pholidae*) | 207 |
| | | Krill (order *Euphausiacea*) | 800 |
| | | Lanternfishes (family *Myctophidae*) | 772 |
| | | Pacific herring (family *Clupeidae*) | 235 |
| | | Pacific Sand fish (family *Trichodontidae*) | 206 |
| | | Pacific Sand lance (family *Ammodytidae*) | 774 |
| | | Pricklebacks, war-bonnets, eelblennys, cockscombs and Shannys (family *Stichaeidae*) | 208 |
| | | Surf smelt (family *Osmeridae*) | 515 |
| 11 | Skates Species and Groups | | |
| | | Big Skates | 702 |
| | | Longnose Skates | 701 |
| | | Other Skates | 700 |

Julie Bonney AGDB
D-1(a)

ange in Arrowtooth MRAs

Main points:

(1) Arrowtooth Flounder has become a viable target fishery due to a developing market. See table 8 (page 44) that shows wholesale price per MT.

(2) Table 4 – 6 (page 41 to 43) show that Arrowtooth flounder is being retained in the fishery and is therefore a viable fishery. The Arrowtooth flounder fishery retention rates were 72% in 2003, 77% in 2004, 81% in 2005 and 83% in 2006.

(3) There are two controlling factors that limit Arrowtooth flounder directed catch – the limited seafood market and the halibut MT cap. (See table 2 (page 40) that shows Arrowtooth flounder catch for a ten year period (1997 to 2007)). It is highly unlikely that total Arrowtooth catch will vary outside this range due to the two limiting factors.

(4) The action is to change the MRAs to allow some retention in the Arrowtooth target fishery, removing the regulatory requirement that require vessel operators to discard 100% of those incidentally catch species that have a MRA of zero.

(5) Because of the halibut cap structure (shallow and deep complex) for most of the year trawl fishermen can keep most of their incidentally caught fish. The only period that the new MRA structure will increased retention is when shallow water complex halibut is closed and deep water complex halibut remains open and set a reasonable retention allowance for skates.

(6) We support Alternative 2 as the preferred alternative. The alternative does not change retention allowances for Pollock and Pacific cod, sets minimal MRA levels for fish species that are fully utilized (i.e. sablefish and aggregated rockfish) and sets standard MRA rates (i.e. 20%) for species, mostly other flatfish species, that the TAC is not reached.

(7) The proposed action is consistent with National Standard 9 which 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" (page 38).

(8) Net Benefits to the Nation: Net benefits to the Nation would likely increase under Alt 2 and 3, with alternative 2 having slightly more benefits to the Nation compared to alternative 3.

(9) The GOA plan team (see minutes - copy), SSC (see minutes - copy) and NMFS enforcement (see page 31 – "NOAA Fisheries Enforcement supports the reduction of regulatory discards anticipated by this action") support the reduction of regulatory discards that would result because of this action.

(10) Accomplishes one of the Council goals for the groundfish work plan. General priority – Manage incidental catch and reduce bycatch and waste Specific priority action – Assess impact of management measures on regulatory discards and consider measures to reduce where practicable (see copy).

Plan team discussed the issue of the apparent discrepancies between the end date of catch used in the projection versus the summary of catch used in the intro sections. The team noted that the catch summaries in the intro will use a different date than the catch information utilized in the projections but the summary sections will note this difference.

*Arrowtooth MRA proposed amendment*

Diana Stram provided an overview of a proposed regulatory amendment to modify the MRAs for arrowtooth flounder. Arrowtooth is the only fishery with MRAs set to 0, which was originally established with the intent to protect against the use of the species as a ballast for retaining other species. The modification of the MRAs would make arrowtooth MRAs consistent with those of other fisheries and allow for retaining bycatch of those species in a developing arrowtooth-specific fishery. The team noted that skate catch in the arrowtooth fishery is not very high, unless the fishery suddenly begins to retain more. The TAC for arrowtooth in 2007 will likely increase to meet demand. This results in slightly higher catch in the Central GOA but still remains constrained by halibut PSC limits. Julie Bonney noted that the trade-off in targeting arrowtooth would be in less rex sole and flathead sole given that halibut PSC is apportioned by complex. She noted that the fleet did more pelagic fishing with the rockfish pilot project on line thus more deepwater flats were available. The appropriate amount for the aggregated rockfish MRA is still being evaluated. Team members commented that it would be useful to examine what the average rockfish catch would be, and that 2% might represent a more intrinsic rate. The team is in favor of increased targeting arrowtooth flounder and felt that the MRA adjustment amendment is appropriate in so far as it decreases the necessity of regulatory discards.

### Flathead Sole

Buck Stockhausen presented an overview of the executive summary of the flathead sole assessment. Catch distribution for the last 3 years were presented. Catch was noted to be much less than TAC. Area apportionment percentages presented were consistent with 2006. The team approved of the OFLs, ABCs and apportionments as presented for 2007 and 2008.

### Rex sole

Buck Stockhausen presented an overview of the executive summary of the rex sole assessment. Catch history and catch distribution were presented. Team members questioned to what extent the distribution of catch is a function of effort or an indication of a true distributional change. Julie Bonney noted that shallow flats tend to be more shoreside thus catches are closer to shore, but catch of rex sole would be tend to indicate more of the true abundance rather than a reflection of effort. There was a higher catch for rex sole this year than in previous years, concentrated primarily around Kodiak. Area apportionments were based on the 2005 survey biomass. The team approved of the OFLs, ABCs and apportionments as presented for 2007 and 2008.

### Dover sole

Buck Stockhausen presented an overview of the executive summary of the Dover sole assessment. Catch history and distribution information were presented. He noted the decreasing catch in recent years. There was a slight increase but limited change in ABCs for 2007 and 2008. The team approved of the OFLs, ABCs and apportionments as presented for 2007 and 2008.

### Other flatfish

Buck Stockhausen presented an overview of the executive summary of the other flatfish assessments. Catch history and distribution information were presented. The other flatfish summary includes deepwater and shallow water complex summaries. Deepwater flatfish includes Dover sole as well as deep sea sole

**DRAFT REPORT**
**of the**
**SCIENTIFIC AND STATISTICAL COMMITTEE**
**to the**
**NORTH PACIFIC FISHERY MANAGEMENT COUNCIL**
**February 5-7, 2007**

**D-1(c) GOA Arrowtooth MRA**

Andy Smoker (NMFS, Alaska Region) provided an oral report and slides in response to a proposed change to the maximum retainable allowance (MRA) for the arrowtooth target fishery in the GOA. Mr. Smoker described recent trends in arrowtooth flounder catch and value, noting that the value is increasing and that discard rates in the target fishery are declining. Julie Bonney (Groundfish Databank) provided public testimony. The SSC appreciates receiving the informational report from Mr. Smoker and recognizes that the trends reported may have important implications given the significance of arrowtooth flounder in the GOA ecosystem.

# Groundfish Workplan

**Priority actions revised in February 2007, status updated to current**

| General Priority (in no particular order) | | Specific priority actions | Related to management objective: | Status *(updated 9-21-07)* | 2007 | | 2008 | | | | | 2009 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Oct | Dec | Feb | Apr | Jun | Oct | Dec | Feb | Apr | Jun | Oct | Dec |
| **Prevent Overfishing** | a. | continue to develop management strategies that ensure sustainable yields of target species and minimize impacts on populations of incidentally-caught species | 5 | 'other species' breakout analysis for BSAI and GOA initiated; action to set ABC/OFL for GOA ospp for Dec 07 | | | | | | | | | | | | |
| | b. | evaluate effectiveness of setting ABC levels using Tier 5 and 6 approaches, for rockfish and other species | 4 | AFSC responding to CIE review of rockfish harvest strategy as part of harvest specifications process | | | | | | | | | | | | |
| | c. | continue to develop a systematic approach to lumping and splitting that takes into account both biological and management considerations | 5 | on hold pending National Standard 1 guideline revisions | | | | | | | | | | | | |
| **Preserve Food Web** | a. | encourage and participate in development of key ecosystem indicators | 10 | ecosystem SAFE presented annually; AI FEP identified indicators for the Aleutians | | | | | | | | | | | | |
| | b. | Reconcile procedures to account for uncertainty and ecosystem considerations in establishing harvest limits, for rockfish and other species | 11 | on hold pending National Standard 1 guideline revisions | | | | | | | | | | | | |
| | c. | develop pilot Fishery Ecosystem Plan for the AI | 13 | FEP summary in development | | | | | | | | | | | | |
| **Manage Incidental Catch and Reduce Bycatch and Waste** | a. | explore incentive-based bycatch reduction programs in GOA and BSAI fisheries | 15 | partially addressed by BSAI salmon bycatch analysis, initial review Feb 08 | | | | | | | | | | | | |
| | b. | explore mortality rate-based approaches to setting PSC limits in GOA and BSAI fisheries | 20 | | | | | | | | | | | | | |
| | c. | consider new management strategies to reduce incidental rockfish bycatch and discards | 17 | | | | | | | | | | | | | |
| | d. | develop statistically rigorous approaches to estimating bycatch in line with national initiatives | 14, 19 | National Bycatch Report update in Dec 07 | | | | | | | | | | | | |
| | e. | encourage research programs to evaluate population estimates for non-target species | 16 | Part of research priorities, adopted in June 2007 | | | | | | | | | | | | |
| | f. | develop incentive-based and appropriate biomass-based trigger limits and area closures for BSAI salmon bycatch reduction, as information becomes available | 14, 15, 20 | analysis for regulatory closure areas initiated, initial review in Feb 08 | | | | | | | | | | | | |
| | g. | assess impact of management measures on regulatory discards and consider measures to reduce where practicable | 17 | partially addressed by GOA arrowtooth MRA analysis, final action Oct 07 | | | | | | | | | | | | |

AGENDA D-5(a)(5)
OCTOBER 2007

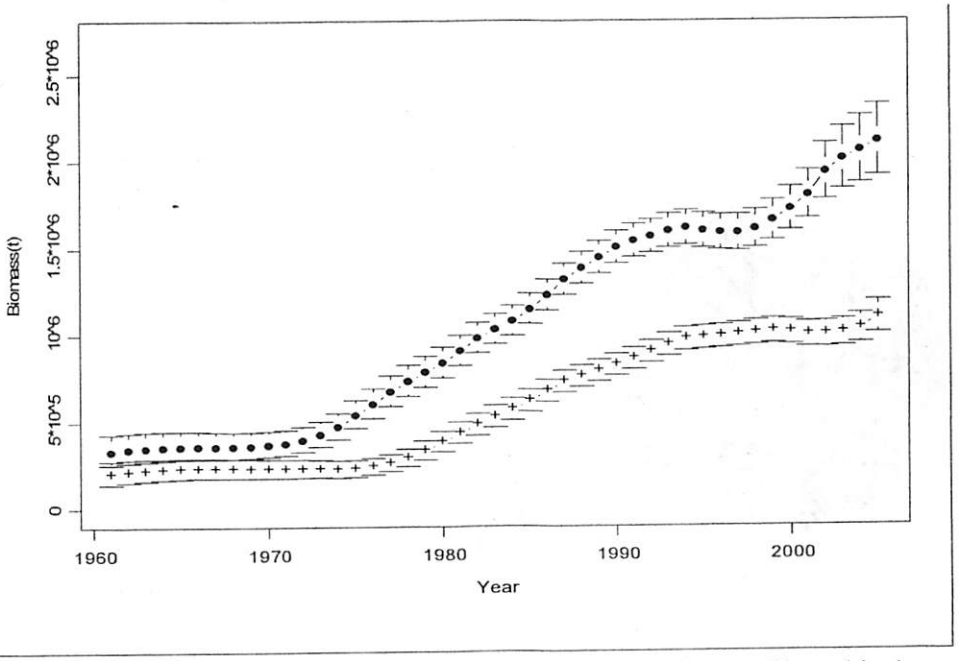


Figure 5.11. Age 3+ biomass (solid line) and female spawning biomass (line with +) from 1961 to 2005. The approximate lognormal 95% confidence intervals shown underestimate the uncertainty because variance in natural mortality and survey Q as well as other fixed parameters are not accounted for.

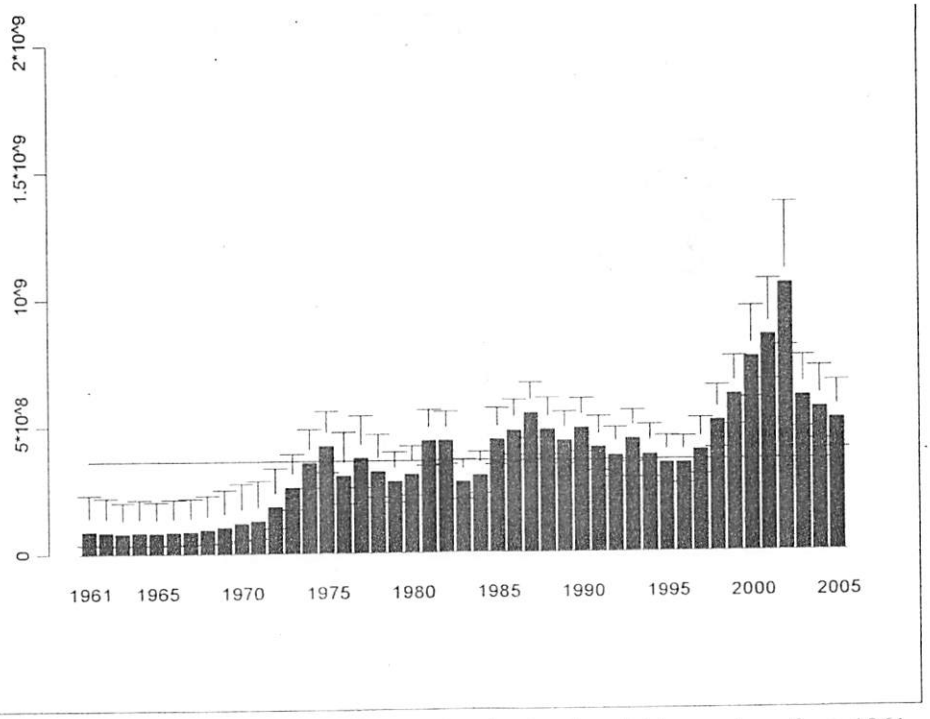


Figure 5.12. Age 3 estimated recruitments (male plus female) in numbers from 1961 to 2005, with approximate 95% confidence intervals. Horizontal line is average recruitment.

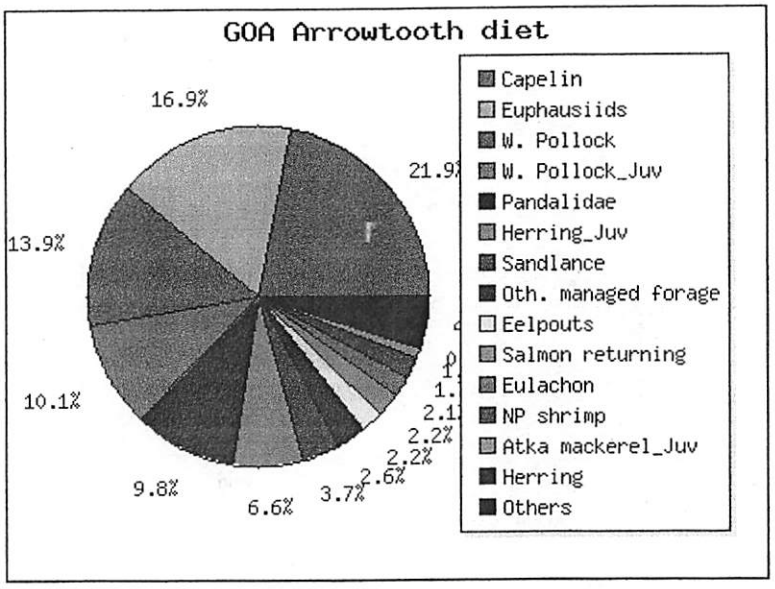


Figure 5.25. GOA arrowtooth flounder diet composition by species.

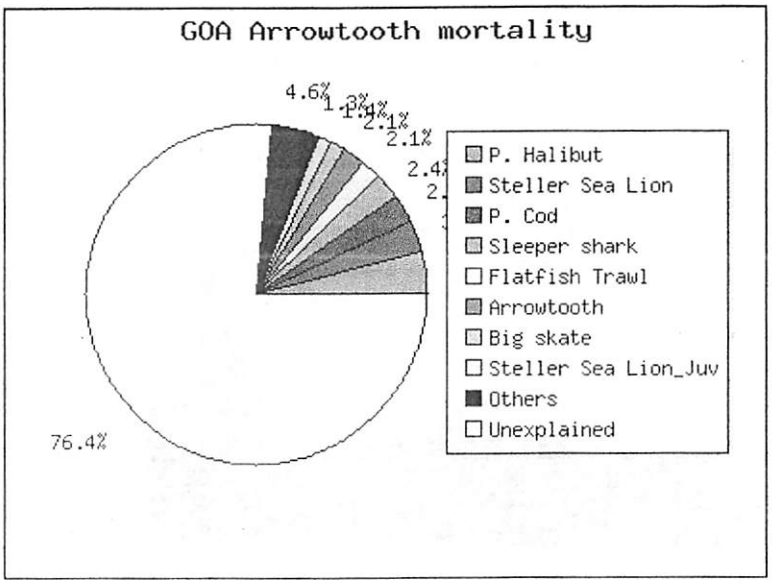


Figure 5.26. GOA arrowtooth flounder predation by species.

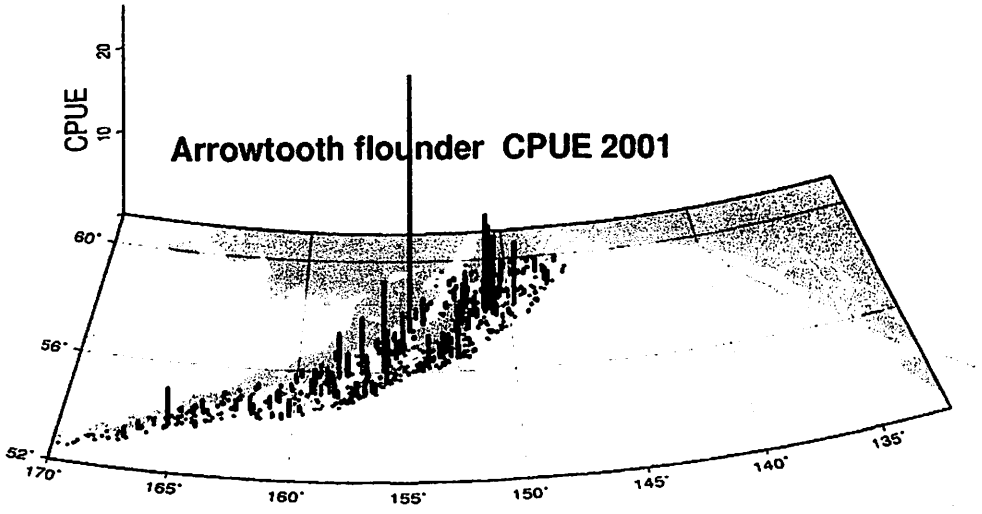


Figure 5.21. Arrowtooth flounder 2001 survey cpue by tow.

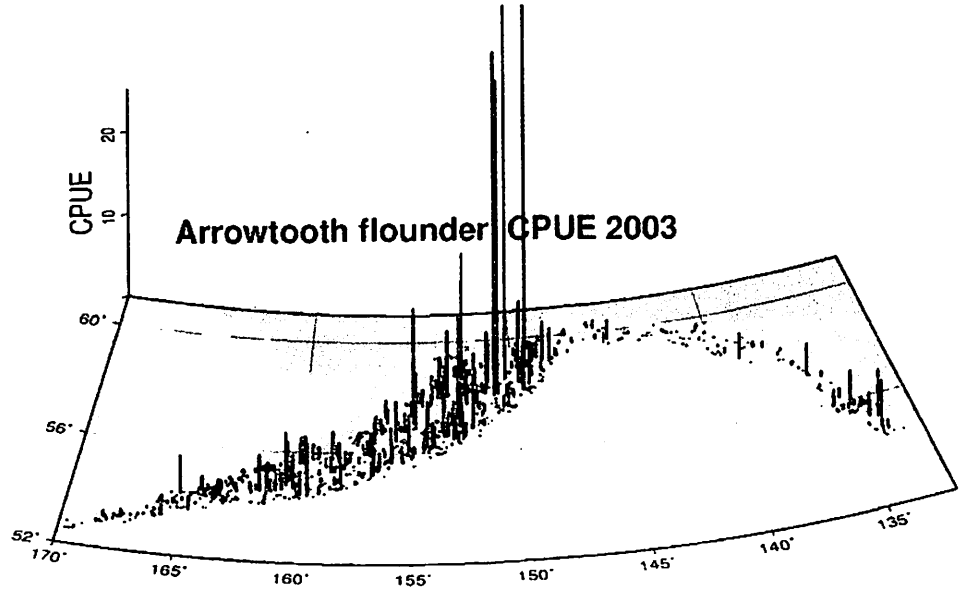


Figure 5.22. Arrowtooth flounder 2003 survey cpue by tow.

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September 26. 2007

Agenda Item D-1

We are commercial fisherman participating in multiple Federal and State fisheries. Our income is 100% dependant on our ability to access our fisheries resources that all rely on a shared ecosystem. As a Tanner crab participant in the the Central Gulf of Alaska Fishery, we are deeply concerned with the expansion of the arrowtooth flounder fishery in and adjacent to critical habitat for Tanner Crab.

The council should consider it necesary and crucial to acquire and understand the potential negative impact that increased bottom trawling would have on a recovering but not yet stable, fishery. Tanner Crab stability will require a precautionary approach by this council. It is important to utilize the understanding that marine ecosystems function on a multispecies level. Creating a protected area as a buffer such as for King Crab would give our Tanner Crab stocks some protection.

It concerns us as P-cod fishermen that a fully utilized fishery is being taxed for the betterment/development of a new one (arrowtooth). Although the options do not increase the "percentage" of P-cod bycatch in the arrowtooth fishery, the overall P-cod take will increase as the arrowtooth TAC increases. We would ask that a cap limiting the amount of P-cod bycatch be implimented. This would mitigate creating an econmic hardship to other sectors.

Also. we are repeatedly brought back to the need for an improved observer program. We believe the council is desirious of the best data possible. In many aspects the observer coverage to date is incomplete and flawed. A program which increases coverage and delivers complete information for a entire season is the only reliable why to interpret data. We would also point out that the State of Alaska must be given data, such as VMS data, so they can better manage their resources. Action by this council to implement an improved observor program and support the State of Alaska's need to access VMS information would indicate the type of appropriate precautionary approach needed.

Proir to final action, we ask the Council to include several things

a) hard caps on Tanner Crab bycatch
b) marine protected areas for Tanner Crab estuaries
c) improved observer coverage

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* Alaska Residents, fishing in Kodiak, SE Alaska, Chignik, Sand Point. and Akutan.

# Groundfish Data Bank

Alaska

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September 26, 2007

North Pacific Fisheries Management Council Chair
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**Re: Regulatory Amendment to Revise the Maximum Retainable Amounts of Groundfish in the Arrowtooth Flounder Fishery**

Dear Chair:

The Alaska Groundfish Data Bank is a member organization representing GOA shoreside trawlers and shoreside processors. We would like to take this opportunity to express our gratitude to the North Pacific Fisheries Management Council members and their staff for the time and effort they have expended toward the proposed amendment to increase MRAs (Maximum Retainable Amounts) in the GOA arrowtooth flounder groundfish fishery. It has been a full year since the Council began considering this regulatory amendment. We look forward to the Council completing their work and taking final action at this meeting (see table 1 below that outline the public process for this amendment package). It is hoped that the trawl fleet will see relief from regulatory discards when the Council takes final action at this meeting so that new regulations can be in place for a portion of the 2008 fishery.

The members of the Alaska Groundfish Data Bank believe that passage of this amendment will reduce regulatory discards and increase utilization of marketable fish. The proposal will also reduce violations of the MRA restrictions incurred when vessels are unable to completely discard incidentally caught species that are currently restricted to zero retention. We support alternative 2 as the preferred alternative.

Three alternatives are offered in the proposed amendment to increase MRAs in the arrowtooth flounder fishery: alternative 1 is status quo, no change; alternative 2 is the industry proposal that we endorse; and alternative 3 is the NMFS/agency proposal. Table 2 compares the MRA percentages of groundfish in the GOA arrowtooth flounder fishery under alternatives 1 through 3. Table 3 highlights the differences between alternatives 2 and 3 by comparing the species groups for which the proposed percentages of retainable amounts differ between the industry and agency alternatives. No changes are proposed for species categories Pollock, Pacific cod, and other species. Alternatives 2 and 3 propose the same MRAs for species groups Aggregated rockfish and Sablefish. Alternative 2 and 3 differ in that alternative 3 would set the MRAs near recent high levels of the incidentally caught species for flatfish, Atka mackerel and skates while alternative 2 set these species MRAs at 20%.

It is important to note that for flatfish trawling the deep and shallow complex halibut management structures closes flatfish target fisheries not quotas. For rex sole and deep water flatfish the only time that an MRA would impact retention in an arrowtooth target fishery is if there was a TAC species closure since these species are in the same halibut complex cap regime as arrowtooth flounder. For flathead sole and shallow flatfish species full

retention of these species are allowed within an arrowtooth flounder target fishery, if shallow complex halibut cap regime is open. The only time MRAs would restrict retention for the flathead sole and shallow water flatfish is when the shallow water complex halibut cap has been taken and closes these fisheries but deep water complex halibut cap fisheries remain open.

We endorse alternative 2 for the following reasons:

1. Historically, the annual GOA catches of these flatfish and skate species groups have not approached the yearly TACs (Table 4), leaving more than sufficient room for the expected increases in the incidental catch and retention rates.

2. Increasing the MRAs to 20% across the board would greatly improve retention rates; decrease the high overall skate discard rate which is mostly associated with the arrowtooth fishery; improve estimates of catch by utilizing landing and production reports rather than observer data; and would create more of a standard MRA across all directed fisheries in the GOA, making it less confusing among vessel operators to understand and recall the legally allowed MRA percentages for each directed fishery.

3. Since Arrowtooth flounder degrade relatively quickly, the catcher vessels' priority to land the catch in a timely manner would most likely preclude the vessel from making many top-off tows.

4. Using pelagic trawl gear to target arrowtooth flounder or incorporating the use of a halibut excluder in bottom trawl gear may help reduce halibut bycatch.

We urge the Council to adopt this amendment under alternative 2 which would allow for higher rates of retention. Adoption of the regulatory change would result in Net Benefit to the Nation by increasing retention of incidental catch in the arrowtooth flounder directed fishery resulting in increased net value to the trawl sectors along with reducing regulatory discards. Additionally management structures that promote fishing mortality on the arrowtooth flounder biomass, the largest predator species in the GOA ecosystem, may reduce predation of other economically important fish species in the GOA in future years.

Thank you for the opportunity to comment.

Sincerely,

Julie A. Bonney

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Table 1. History of the MRA adjustment public process

Alaska Groundfish Data Bank submitted a proposal to change the MRA structure for Arrowtooth Flounder based on concerns from trawl fishermen. Vessel operators were concerned because the current management regime required vessels to discard fish when the shallow complex fisheries are closed and discard skates since the MRA was changed from 20% to 0% when skates were removed from the other species TAC category. The progress of this proposal within the Council process is listed below.

*October 2006:* Industry presented the proposal to change the MRAs for the Arrowtooth Flounder target to the Advisory Panel and the Council in October of 2006. The Council chose to task staff to evaluate the proposal at that time.

*November 2006:* The industry proposal was presented to the GOA Groundfish Plan Team in November of 2006. According to the GOA Plan Team minutes, "The team is in favor of increased targeting arrowtooth flounder and felt that the MRA adjustment amendment is appropriate in so far as it decreases the necessity of regulatory discards."

*February 2007:* Andy Smoker, NMFS Alaska Region, presented a white Paper, "Discussion of an Industry Proposal to Revise Maximum Retainable Amount Percentages of groundfish Relative to Retained Arrowtooth Flounder" to the SSC, AP and Council. The SSC minutes acknowledge the report in their minutes, and suggest that the target fishery trends reported may have important implications given the significance of arrowtooth flounder in the GOA ecosystem. The Council chose to move forward with an analysis of the Arrowtooth Flounder MRA adjustment for initial review.

*June 2007:* At its June 2007 meeting, the Council reviewed an EA/RIR/IRFA that proposes the revise the MRA amounts of groundfish in the arrowtooth flounder fishery in the GOA. At this meeting, the Council approved releasing the document for public review.

*October 2007:* The Council is scheduled to take Final action on the GOA arrowtooth MRA – Regulatory amendment.

**Table 2. Comparison of MRAs (percentages) of Groundfish in the Arrowtooth Flounder Fishery in the GOA under Alternatives 1 through 3.**

| Incidental catch species | Alternative 1 % | Alternative 2 % | Alternative 3 % |
|---|---|---|---|
| Pollock | 5 | 5 | 5 |
| Pacific cod | 5 | 5 | 5 |
| Deep-water flatfish | 0 | 20 | 5 |
| Rex sole | 0 | 20 | 10 |
| Flathead sole | 0 | 20 | 15 |
| Shallow-water flatfish | 0 | 20 | 5 |
| Sablefish | 0 | 1 | 1 |
| Aggregated rockfish | 0 | 5 | 5 |
| Atka mackerel | 0 | 20 | 5 |
| Skates | 0 | 20 | 10 |
| Other species | 20 | 20 | 20 |
| Forage fish | 2 | 2 | 2 |

Source: Public Review Draft, EA/RIR/IRFA For a Regulatory Amendment to Revise the MRAs of Groundfish in the Arrowtooth Flounder Fishery, September 3, 2007.

**Table 3. Comparison of proposed MRAs for incidental catch species under alternatives 2 and 3 where differences exist between the two alternatives.**

| Incidental catch species | Alternative 2 | Alternative 3 |
|---|---|---|
| DWF | 20% | 5% |
| SWF | 20% | 5% |
| FLATHEAD | 20% | 15% |
| REX | 20% | 10% |
| SKATES | 20% | 10% |
| ATKA | 20% | 5% |

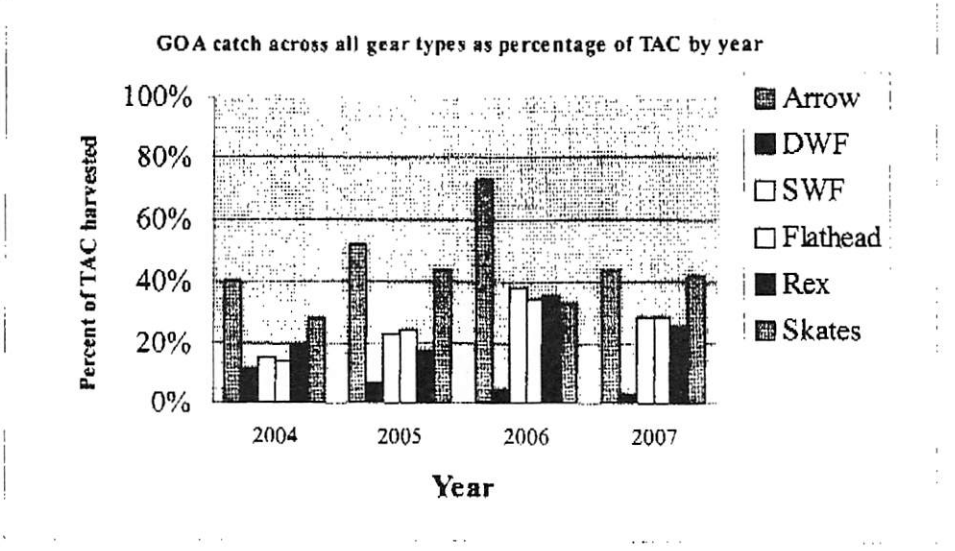
DWF: Deep-water flatfish SWF: Shallow-water flatfish

**Table 3. Gulf-wide ABC, TAC and Annual Catch of Incidental Species Groups across all gear types by year.**

| | | ARROW | DWF | SWF | FLAT | REX | SKATES | ATKA |
|---|---|---|---|---|---|---|---|---|
| | ABC | 184,008 | 8,707 | 51,450 | 39,110 | 9,100 | 8,056 | 4,700 |
| 2007[1] | TAC | 43,000 | 8,707 | 19,975 | 9,148 | 9,100 | 8,056 | 1,500 |
| | Annual Catch | 18,709 | 221 | 5,740 | 2,630 | 2,359 | 2,282 | 1,214 |
| | % TAC harvested | 43.51% | 2.54% | 28.74% | 28.75% | 25.92% | 28.33% | 80.93% |
| | ABC | 177,844 | 8,665 | 51,450 | 37,820 | 9,200 | 8,056 | 4,700 |
| 2006 | TAC | 38,000 | 8,665 | 19,972 | 9,077 | 9,200 | 8,056 | 1,500 |
| | Annual Catch | 27,653 | 405 | 7,641 | 3,134 | 3,294 | 3,501 | 876 |
| | % TAC harvested | 72.77% | 4.67% | 38.26% | 34.53% | 35.80% | 43.46% | 58.40% |
| | ABC | 216,900 | 6,820 | 52,070 | 45,100 | 12,650 | 8,144 | 600 |
| 2005 | TAC | 38,000 | 6,820 | 20,740 | 10,390 | 12,650 | 8,144 | 600 |
| | Annual Catch | 19,770 | 414 | 4,769 | 2,543 | 2,177 | 2,711 | 799 |
| | % TAC harvested | 52.03% | 6.07% | 22.99% | 24.48% | 17.21% | 33.29% | 133.17% |
| | ABC | 194,930 | 6,070 | 52,070 | 51,270 | 12,650 | 8,144 | 600 |
| 2004 | TAC | 38,000 | 6,070 | 20,740 | 10,880 | 12,650 | 6,993 | 600 |
| | Annual Catch | 15,314 | 682 | 3,095 | 1,464 | 2,394 | 2,913 | 819 |
| | % TAC harvested | 40.30% | 11.24% | 14.92% | 13.46% | 18.92% | 41.66% | 136.50% |

[1]2007 Annual Catch as of 9/14/07. DWF = deep water flatfish, SWF = shallow water flatfish, FLAT = Flathead Sole

**Figure 1.**



Alaska Marine Conservation Council

October 8, 2007

Eric Olsen, Chair
North Pacific Fishery Management Council
605 W. 4th Ave.
Anchorage, AK 99501

RE: Agenda Item D1-A, Gulf Arrowtooth MRA

Dear Mr. Chair,

AMCC is concerned that increasing the MRA for groundfish in the arrowtooth flounder fishery will result in increased bottom trawling with increased impact on the fragile population of Tanner crab around Kodiak Island and consequences for an important local fishery. While we appreciate steps to reduce discards in any fishery, we recommend that the Council delay final action on this decision to allow time to develop ways to reduce impacts on Tanner crab that we believe will be exacerbated by a growing arrowtooth flounder fishery.

1. **The arrowtooth flounder fishery is expanding.**

   The EA states that the industry has developed markets for arrowtooth sufficient to support a viable target fishery. Catches for arrowtooth in recent years have approached the TAC in some areas and the Council raised the TAC from 25,000 mt to 30,000 mt in the Gulf of Alaska.

   While marketability appears to be improving for arrowtooth, the fishery is clearly more desirable if the industry can retain the incidental catch of more flatfish species and skates. The fishery is expanding and to drive its viability the fleet is seeking economic incentives in the form of groundfish MRAs at a level higher than the natural background levels in the fishery.[1] "Given the general trend in the price of arrowtooth flounder, increasing the MRAs for incidentally caught species could provide enough of an economic incentive for some trawl vessels to target arrowtooth flounder more often...It is possible that some participants will take into consideration the *economic value of the bycatch species* in the directed arrowtooth flounder fishery to estimate the benefit of targeting arrowtooth flounder." (emphasis added) (EA/RIR/IRFA, for a Regulatory Amendment to Review the MRA Public Review Draft, p. 27)

2. **Halibut excluders are increasing opportunity for the bottom trawl fleet which is likely to result in greater impact on Tanner crab around Kodiak Island.**

   Despite the growth in targeting arrowtooth, the EA states, "The intensity of this action is believed to be low because it is not likely to change the harvest of groundfish, but would reduce discards currently required by regulation. The harvest of groundfish would continue to be constrained by the TAC and PSC limits." (EA, p. 13)

[1] Alternative 2 in the EA contains MRAs higher than the background levels for other groundfish catch indicated in Table. 18, p. 49.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The EA goes on to say that while the halibut PSC continues to be a constraint on the arrowtooth fishery, "...the amount of halibut PSC attributed to the arrowtooth flounder fishery has increased dramatically." (EA, p. 29)

Our concern stems from indicators of expanded bottom trawling for arrowtooth and that the fishery is changing with potentially significant impact on Tanner crab. Growth will increase for arrowtooth and other flatfish with wider use of halibut excluders.

The fleet is developing halibut excluders in trawl gear to lower PSC rates in flatfish fisheries. We appreciate the industry's initiative to develop the excluder however there is no overall reduction in the PSA cap and therefore no actual reduction in halibut bycatch. The halibut saved with the excluder in one fishery can be reapportioned to another bottom trawl fishery, such as arrowtooth. An industry spokesman stated, "If we can lower the halibut bycatch rate by 50 percent across the fleet, that would create new opportunities for catching more flatfish. These guys could be busy more months catching flatfish, arrowtooth, rock sole, etc., if we reduce the halibut bycatch." (Kodiak Daily Mirror, 10-7-07)

The EA does not consider how bottom trawling is likely to increase with a growing use of halibut excluders even though the overall PSA cap remains the same. While the halibut excluders will be good for halibut, they will extend the arrowtooth or other flatfish fisheries which will have additional impact on Tanner crab. The Council applies an 80% mortality rate to Tanner crab caught in bottom trawl gear.

3. **Arrowtooth effort is likely to concentrate in Tanner crab habitat.**

There is a very small window of time – 16-20 hours – in which to deliver arrowtooth before enzymatic breakdown makes them unviable for processing. Some say a large portion of the fish have degraded even in this window of time and cannot be processed. These fish are sent to Bio Dry to make meal or to be discarded. Due to this limited time frame for delivery, it is likely the arrowtooth fishery will focus in waters near to Kodiak. These nearshore grounds overlap the northeast and eastside crab districts. Kodiak and Old Harbor will get hit the hardest because these grounds are critical to crab stocks and small boat fishermen.

Bottom trawls can encounter aggregations of juvenile and adult Tanner crab which may prove devastating to the populations needed to support a viable Tanner crab fishery. This fishery has been on the rebound after years of closures but it remains fragile and at this time it is unknown whether stocks are strong enough to support a commercial fishery in 2008. The impact from bottom trawling is an unfortunate and unnecessary additional factor challenging their recovery.

4. **Existing protections are not adequate for Tanner crab.**

Existing red king crab closures provide some protection for Tanner crab but were not designed for Tanners and so are not adequate. Also some of the red king crab areas (Type 2 areas) on the east side of Kodiak either do not apply year round or do not go into effect until there is a red king crab recruitment event which has not occurred in over 20 years. Those areas offer no protection for Tanners.

5. **The concerns about the impacts of bottom trawling on Tanner crab stocks around Kodiak Island are not new and the Council has already developed baseline work needed to advance mitigation measures.**

The issue has been brought before the Council on prior occasions. In February 2005 Council staff presented a discussion paper entitled Salmon and Crab Bycatch Measures for GOA Groundfish Fisheries. It reviews the amount, species composition, timing and location of salmon and crab caught incidentally in Gulf groundfish fisheries. In October, staff presented a range of options to protect Tanner crab. The Council was considering options including PSC caps, triggers and trawl closures to protect the most important biological areas for Tanner crab.

Although the documents were developed to help structure conservation options for a Gulf rationalization program, the work can be applied now to resolve the same conservation concerns raised by increasing bottom trawl effort.

**Conclusion**

AMCC is concerned that the EA is deficient by omitting discussion about the impact on Tanner crab. The use of halibut excluders is not addressed in the EA as a mechanism that can substantially increase bottom trawling for arrowtooth flounder. Therefore the primary assumption in the EA that no changes are anticipated in the groundfish fishery due to continued constraint of halibut PSC caps is not accurate.

AMCC urges the Council to delay final action until December or until crab conservation concerns from the resident Kodiak Island Tanner fleet can be addressed and the full impact of this regulatory amendment can be evaluated. In creating economic benefits for the directed arrowtooth fishery, the Council should mitigate the impacts on crab and the existing crab fishery.

If this final action goes forward without including protection for crab, an established viable fishery in the Gulf, efforts to rebuild these sensitive stocks may fall victim to expanded bottom trawl effort.

Sincerely,

Theresa Peterson

Theresa Peterson
Kodiak Coordinator