ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/
FINAL REGULATORY FLEXIBILITY ANALYSIS

For a proposed Regulatory Amendment to Implement the
Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands

To Revise the Maximum Retainable Amounts of Groundfish in the Arrowtooth Flounder Fishery

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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 to increase the maximum retainable amounts of selected groundfish in the arrowtooth flounder and Kamchatka flounder fishery in the Bering Sea and Aleutian Islands management area (BSAI). The purpose of the proposed amendment is to reduce the amount of regulatory discards of otherwise marketable groundfish in the developing arrowtooth and Kamchatka flounder fishery and to allow the Amendment 80 fleet to retain those regulatory discards thereby reducing waste. The proposed action also would revise regulations at 50 CFR part 679 to accommodate the North Pacific Fishery Management Council's removal of Kamchatka flounder from the arrowtooth flounder complex in the BSAI. 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

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 groundfish in the arrowtooth flounder fishery in the Bering Sea and Aleutian Islands (BSAI). The purpose of the proposed action is to reduce the amount of regulatory discards of otherwise marketable groundfish in the 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 1994, the North Pacific Fishery Management Council (Council) set most of the groundfish MRAs at zero, relative to retained amounts of arrowtooth flounder, to prevent vessels from using arrowtooth flounder (a species for which no market existed) as a basis species for retention of more readily marketable species. 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, resulting in increased bycatch amounts of Pacific halibut, salmon, and crab. Increased halibut bycatch rates could have resulted in reaching halibut bycatch limits before the total allowable catches (TACs) established for other trawl target fisheries were harvested. However, since 1997, markets for arrowtooth flounder have developed and this species now supports a viable target fishery.

In June 2008, the Council approved increasing the MRAs for groundfish caught in the Gulf of Alaska (GOA) arrowtooth flounder fishery. With the exception of a few specific species to prevent "topping off," the MRAs were set at 20 percent. In a similar fashion the Council in December 2009 initiated an analysis to consider changes to the MRAs of groundfish in the arrowtooth flounder fishery in the BSAI. Incidental catch of groundfish species in the BSAI arrowtooth flounder fishery range from 20 percent to 30 percent. At its June 2010 meeting, the Council developed a problem statement, which is provided below:

When the MRAs for the directed BSAI arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowance 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 constrained by MRAs in the directed BSAI arrowtooth flounder fishery. MRAs are a widely used groundfish management tool to reduce targeting on a species and slow harvest rates, as an allocation is approached. MRAs force 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. In addition, the regulatory discard of these species could also potentially hamper Amendment 80 vessels trying to meet the increasingly challenging groundfish retention standard. Currently, the GRS is 80 percent, but in 2011, the GRS will increase to 85 percent.

This regulatory amendment would evaluate raising the MRAs for most species in the directed BSAI arrowtooth flounder fishery, to provide increased opportunity for retention of species harvested by the trawl sectors, reduce overall discards in this sector, and help improve the ability of the Amendment 80 fleet in meeting the mandatory 85 percent GRS that will be implemented in 2011, while not subjecting incidentally caught species to increased allocation concerns.

In June 2010, the Council approved a request for National Marine Fisheries Service (NMFS) to implement an emergency rule to relieve the GRS requirement for the non-American Fisheries Act (non-AFA) trawl catcher/processors. The Council determined that an emergency exists because recent assessments of the GRS program indicate that regulatory provisions for the GRS present unintended compliance and enforcement costs beyond those necessary to meet Council objectives under Amendments

79 and 80. NMFS published the emergency rule in the Federal Register on December 15, 2010 (75 FR 78172). That emergency rule expired on December 31, 2011, and the GRS is currently in effect. In addition, the Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and will consider an analysis supporting a fishery management plan (FMP) amendment to revise the GRS program. To remove the effectiveness of the GRS for 2011, a final rule would need to be approved by November 30, 2011.

This analysis considers four alternatives. Alternative 1 (no action) 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, at the same level as when using Pacific cod as a basis species. Alternative 3, would set the MRAs for incidental catch species, relative to arrowtooth flounder as a basis species, at the same level as when using flathead sole as a basis species. Subsequently a fourth alternative was included (see below).

In October 2010, the Council selected a preferred alternative that would revise the MRAs of groundfish in the BSAI arrowtooth flounder fishery. The Council selected Alternative 2, which, with the exception of Greenland turbot and the other species group (which consists of skates, sharks, octopus, and sculpins), would revise the MRAs in the arrowtooth flounder fishery to equal those in the Pacific cod fishery. This document refers to the Council's Preferred Alternative with Suboptions 2.2 and 2.3 is renamed for this document as NMFS Alternative 4. Suboptions 2.2 and 2.3 would adjust the MRAs for Greenland turbot and the other species group to 7 percent and 3 percent, respectively, to allow for some retention of these incidentally caught species, while at the same time reduce regulatory discards for these species. These percentages approximate the average incidental catch rates in the arrowtooth flounder fishery between 2003 and 2009. In anticipation of the possibility of splitting Kamchatka flounder from the arrowtooth flounder species group in the 2011 and 2012 groundfish harvest specifications for the BSAI, the Council also recommended that, for purposes of MRA calculations, seasons, and prohibited species catch (PSC) fishery categories, Kamchatka flounder would be managed with arrowtooth flounder. The NOAA Office for Law Enforcement expressed concerns that the fishing industry would not be able to comply with MRA regulations using arrowtooth flounder (in the event it were open to directed fishing) as a basis species for the purposes of retaining Kamchatka flounder (in the event it were closed to directed fishing concurrently) due to the difficultly in distinguishing between the two very similar species after processing. The reverse would be true as well in the event Kamchatka flounder were open to directed fishing and arrowtooth flounder were closed to directed fishing concurrently.

At its December 2010 meeting the Council recommended splitting Kamchatka flounder from the arrowtooth flounder species category. A separate overfishing limits (OFL), acceptable biological catch (ABC) and total allowable catch (TAC) was established for Kamchatka flounder. As a result, the preferred alternative (renamed as NMFS Alternative 4), for this MRA action includes the regulatory amendments recommended by the Council for MRA calculations, seasons, and PSC fishery categories included in the proposed rule. In addition, NMFS also recommends including in the preferred alternative (NMFS Alternative 4) two additional regulatory amendments to facilitate the management of Kamchatka flounder as a separate TAC category. These are (1) revisions to regulations governing the process for allocating new species or species groups such as Kamchatka flounder to the Western Alaska Community Development Quota (CDQ) Program, and (2) revisions to Table 3 to 50 CFR part 679[1], to clarify that the product recovery rates currently established for arrowtooth flounder and other specifically named flatfish would apply to all flatfish as a group, including Kamchatka flounder.

Regulatory Effects of the Alternatives

[1] http://www.alaskafisheries.noaa.gov/rr/tables/tabl3.pdf

Under Alternative 1, the MRAs would not be revised for groundfish species in the BSAI directed arrowtooth flounder fishery. Maintaining the existing MRAs would continue to require vessels to discard incidental catches of any groundfish species that have a zero MRA, if those fisheries were closed to directed fishing. 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 and/or Kamchatka flounder continue to increase, the economic incentive for vessels to target arrowtooth flounder or Kamchatka flounder will likely increase. Under Alternative 1, this potentially could result in higher regulatory discards of valuable incidental catch species. In addition, when retention of groundfish species are prohibited in the arrowtooth flounder fishery, the discarded groundfish would contribute to a lower retention rate, making it more difficult to meet the GRS.

Under Alternatives 2, 3, and the Council's Preferred Alternative (renamed as NMFS Alternative 4) vessels targeting BSAI arrowtooth flounder could retain a higher percentage of incidentally caught groundfish, when the target fisheries for those groundfish species are closed to directed fishing. Increasing the MRAs could be a factor in a decision to participate in the arrowtooth flounder or Kamchatka flounder fisheries. The economic characteristics of the trawl catcher/processor and catcher vessel sectors vary widely. It is possible that some participants will take into consideration the economic value of the non-target species in the directed arrowtooth flounder fishery to estimate the benefit of targeting arrowtooth flounder or Kamchatka flounder. Under Alternative 1, groundfish species with an MRA set at zero and closed to directed fishing, must be discarded, regardless of the value of the species. This is, of course, precisely the purpose and intent of "closing" directed fishing and strictly controlling incidental catch.

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 (Table 3-13). As a result, under Alternatives 2, 3, and the Council's preferred alternative (renamed as NMFS Alternative 4) increased retention, perhaps reflecting covert targeting, of some MRA species is likely, compared to the status quo alternative. 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 MRA species, whether there is a potential buyer, accessibility of the species, storage availability, the ability to process the species, and the risk of exceeding the GRS. 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 or the ability to discard low valued fish and not exceed the GRS, all while targeting arrowtooth flounder, likely has more discretion when it comes to "topping off" on specific species. Due to difficulties in distinguishing between arrowtooth and Kamchatka flounder NMFS when these species are processed, NMFS included regulations in the proposed rule for this action, should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. NMFS believed that this measure may have been necessary for the management of groundfish MRAs using the arrowtooth species group as basis species and would have provided the fishing industry additional incentive to avoid reaching the TAC for either arrowtooth or Kamchatka flounder. Subsequent to the publishing of the proposed rule, a new procedure developed by NOAA Office for Law Enforcement and the Amendment 80 sector has allowed for compliance with MRA accounting requirements for these two species despite the species identification issues for arrowtooth flounder and Kamchatka flounder in the processed product form. This procedure allows for groundfish to be retained up to the MRA when Kamchatka flounder is open to directed fishing based on the composition of arrowtooth flounder and Kamchatka flounder in observer samples. The final rule amends Table 11 to Part 679, by removing footnote 9, and includes separate MRAs for groundfish caught incidentally to arrowtooth flounder and Kamchatka flounder.

Given their high market price, two species in particular that could be a target for a "top off" fishery are sablefish and Greenland turbot. Under Alternative 3, the MRA for sablefish would be 7 percent and for

Greenland turbot the MRA would be 35 percent, whereas under Alternative 2 the MRAs for these species are 1 percent. While developing the MRAs for the GOA arrowtooth flounder fishery, the Council was concerned about "topping off" on high valued species; therefore, they set the MRAs for sablefish at 1 percent and aggregated rockfish at 5 percent. Some of those same concerns the Council had in the GOA arrowtooth flounder fishery MRAs may be applicable in the BSAI arrowtooth flounder fishery MRAs under Alternative 3, given there is likely a strong economic incentive to "top off" with Greenland turbot and sablefish.

The relationship between arrowtooth flounder and Greenland turbot fisheries in the Aleutian Islands could create a potential management concern under Alternative 3. Following the closure of the Greenland turbot fishery in the Aleutian Islands vessels move off the turbot-rich grounds, to areas of lower Greenland turbot incidental catch. One of the prime motivations for this behavior was the "zero" MRAs in the arrowtooth flounder fishery and the increasing difficulty in meeting the GRS. However, with an MRA of 35 percent for Greenland turbot under Alternative 3, vessels would be less likely to move to cleaner fishing grounds, given the relative value of Greenland turbot. This could contribute to higher incidental catches of Greenland turbot in the Aleutian Islands.

In June 2010, the Council, concerned the MRA for Greenland turbot under Alternative 3 could result in a top off fishery, included a suboption that would set the MRA at 15 percent. At the same time, the Council also recognized that an MRA of 1 percent for Greenland turbot under Alternative 2 could result in unnecessarily high regulatory discards, so the Council included a suboption under Alternative 2 that would set the MRA at 15 percent. The average incidental catch rate for Greenland turbot during the 2003 to 2009 period was approximately 8 percent. Based on this data, a 15 percent MRA for Greenland turbot would dampen the potential for a top off fishery under Alternative 3, while at the same time reduce unnecessary regulatory discards that is likely under Alternative 2 without the Greenland turbot suboption.

In October 2010, recognizing the potential development of a top off fishery for Greenland turbot, the Council recommended, as its preferred alternative (Alternative 4), an MRA of 7 percent for Greenland turbot. In addition, the Council also recommended an MRA of 3 percent in the aggregate for the other species group, comprised of skates, sharks, octopus and sculpins. The Council recommended that the MRAs for Greenland turbot and the other species group be based on the approximate average incidental catch observed in the arrowtooth flounder fishery from 2003 through 2009. These recommendations were based on the Council's desire to minimize impacts on the Greenland turbot directed fishery and conserve the stocks that compose the other species group while allowing for some incidental catch of these species to be retained when closed to directed fishing. The recommended MRAs for Greenland turbot and the other species group are likely sufficient to prevent topping off while at the same time limit excessive regulatory discards.

In addition, the Council in October 2010 recommended that, except for the management of separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder, the two species be managed as arrowtooth flounder is currently managed. This includes PSC management and identical fishing seasons for arrowtooth flounder and Kamchatka flounder. Due to difficulties in distinguishing between arrowtooth and Kamchatka flounder, NMFS proposed that should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. NMFS removed this measure in in the final rule because it was determined to be unnecessary for the management of groundfish MRAs associated with arrowtooth and Kamchatka flounder as basis species, and reduced opportunities for the Amendment 80 sector to reduce discards of groundfish (see 1.1 for additional information).

As a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several regulatory housekeeping revisions need to be made to facilitate recordkeeping, reporting, and

catch accounting. Footnotes 2 and 9 to Table 11 would be revised to include Kamchatka flounder and clarify the use of arrowtooth and Kamchatka flounder as basis species for the purpose of retaining incidental catch of groundfish. For the purpose of allocating trawl PSC limits among fisheries, § 679.21(e)(3)(iv)(C) would be revised to include Kamchatka flounder. In the season start dates §679.23(e)(1) would be revised to include Kamchatka flounder with a start date of May 1. Table 3 Product Recovery Rates (PRR) for groundfish species and conversion rates for Pacific halibut would be revised to eliminate PRRs for individual species of flounders, sole, and turbot and establish a single PRR for all flatfish (except halibut) in order to facilitate more efficient compliance and enforcement of MRAs, PRRs for flatfish, including Kamchatka flounder will be identical. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) would be made. Finally, in a previous action, Table 2a Groundfish Species Codes were revised to include Kamchatka flounder with a species code number of 117. Management and enforcement concerns associated with the establishment of separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder are discussed in Section 3.3.2 of this EA/RIR/IRFA.

Halibut PSC is apportioned between the Amendment 80 cooperatives[2], Amendment 80 limited access[3], and other trawl BSAI limited access, and non-trawl target fishery categories. In general more valuable fisheries receive allocations, limits or seasonal releases of more halibut PSC, while the less valuable fishery categories are allowed little or no halibut PSC. Prior to the implementation of Amendment 80, non-pelagic trawl fisheries received lower amounts of halibut, and some species, such as arrowtooth flounder, did not have a directed trawl fishery. As for halibut PSC allowance to the Amendment 80 cooperatives, each cooperative determines how it will apportion its halibut PSC between the different target fisheries. Once the cooperative reaches its halibut PSC limit, it is restricted from fishing in the BSAI for the remainder of that year.

With Amendment 80 cooperatives managing their own halibut PSC, catch of groundfish in the Amendment 80 limited access Greenland turbot/arrowtooth flounder/Kamchatka flounder/sablefish fishery is debited from the Amendment 80 sector's annual pool of halibut PSC limits, as soon as catch data is electronically entered into the catch accounting system. If an Amendment 80 vessel opts out of an Amendment 80 cooperative, halibut PSC would be limited to what is available in the halibut PSC limited access trawl fishery category. There would likely be little or no impact to the BSAI halibut resource from increasing the arrowtooth and Kamchatka flounder fishery MRAs, as proposed under Alternatives 2, 3, and 4.

Environmental Effects of the Alternatives

The environmental effects of establishing of separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder were previously described in the Environmental Assessment for the 2011/2012 BSAI Groundfish Harvest Specifications. The amendments supporting recordkeeping and reporting revisions for Kamchatka flounder PRRs and species codes were made to final rule at 50 CFR 40628, July 11, 2011.

This action would have no impacts on non-specified species, forage species, seabirds, habitat, or the ecosystem beyond those previously considered in the groundfish harvest specifications environmental

[2] Amendment 80 was implemented with a final rule published in 2007 and was fully effective starting with the 2008 fishing year (72 FR 52668, September 14, 2007).
[3] Amendment 80 sector vessels may join an Amendment 80 cooperative or operate in the limited access fishery. In 2012 all Amendment 80 vessels participate in a cooperative. Prior to 2012 some vessels operated in the Amendment 80 limited access fishery.

impact statement (EIS) (NMFS 2007). Also, because there are no additional direct direct or indirect impacts on target species, PSC species, habitat or Steller sea lions identified from this action, there would be no cumulative effects. Therefore, this analysis will focus on the environmental components that could potentially be affected by this action: stocks of targeted groundfish and prohibited species. The effect of the alternatives on social and economic conditions is analyzed in Chapter 3.

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 groundfish species or prohibited species (NMFS 2007). For these reasons, Alternative 1 would likely have no impacts on groundfish stocks or prohibited species beyond those analyzed in the groundfish harvest specifications EIS (NMFS 2007). The effect of the arrowtooth flounder fishery on groundfish species is limited primarily by the TAC established for arrowtooth flounder, the length of open seasons, and the amount of the PSC allowed in the trawl arrowtooth flounder fishery.

Under Alternatives 2, 3, and 4, the MRAs for groundfish in the arrowtooth flounder fishery would be increased from current levels. Increased MRAs would allow increased retention in the arrowtooth flounder fishery of groundfish species closed to directed fishing. Increased retention of these incidentally caught groundfish would reduce discards. If MRAs are set at the generally higher levels associated with alternative 3, the opportunity for increasing retention may result in an increased catch of these incidental catch species in the arrowtooth flounder fishery. For fisheries like Greenland turbot, where the TAC is frequently fully utilized, MRAs associated with Alternative 3 would likely increase estimates of potential incidental catch and, therefore, reduce the amount of TAC available to the directed fishery. Overall, 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. Under the preferred alternative (Alternative 4) groundfish MRAs in the arrowtooth flounder and Kamchatka flounder directed fisheries are set levels for most species that are unlikely to change fishing practices or the distribution of fishing effort. The possibility exists that the MRA for Greenland turbot under the preferred alternative (Alternative 4) may encourage more effort from Amendment 80 sector vessels, causing a seasonal closure to occur at an earlier date than under Alternative 1. The potential for an earlier seasonal closure for Greenland turbot would not alter the environmental effects of this proposed action beyond the effects previously considered in the 2007 groundfish harvest specifications EIS. No changes are made to the Steller sea lion protection measures with this action so no additional impacts on Steller sea lions or on their critical habitat are expected.

Under Alternatives 2, 3 and the Council's preferred alternative (Alternative 4) it is necessary in Table 11 to clarify that retained catch of arrowtooth and Kamchatka flounder will be aggregated together when estimating round weight as basis species for the purpose of calculating allowable retention of incidental catch of groundfish. This aggregation of round-weight amounts of basis species will provide for improved enforcement of retained catch of groundfish in the arrowtooth and Kamchatka targets, but do not effect NMFS ability to track catches of these species and remain within the established annual TAC or ABC, because catch by haul is continuously tracked by observers estimates. The observer estimates of groundfish catch are available for NMFS to compare with annual TACs, and independent of the accounting of retained catch. Thus, the aggregations of arrowtooth and Kamchatka flounder basis species would have no impact on the environment.

The regulatory housekeeping revisions to facilitate recordkeeping, reporting and catch accounting discussed in the section on the RIR above would clarify and simplify tables, and reduce the burden associated with paperwork and recordkeeping. Because these housekeeping revisions address recordkeeping requirements, they have no impact on the environment and are not elaborated on in the EA.

1.0 INTRODUCTION

This document analyzes a proposed increase to the maximum retainable amounts (MRAs) of selected groundfish in the Bering Sea and Aleutian Islands (BSAI) arrowtooth flounder fishery. 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 document is an Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis (EA/RIR/FRFA). An EA/RIR/FRFA provides assessments of the environmental impacts of an action and its reasonable alternatives (the EA), the economic benefits and costs of the action alternatives, as well as their distribution (the RIR), and the number of small entities impacted by the action, as well as the impacts on the regulated small entities associated with significant to the preferred alternative (the FRFA). This EA/RIR/FRFA addresses the statutory requirements of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the National Environmental Policy Act (NEPA), Presidential Executive Order (EO) 12866, and the Regulatory Flexibility Act (RFA). An EA/RIR/FRFA is a standard document produced by the North Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) Alaska Region to provide the analytical background for decision-making.

1.1 Purpose and Need

The purpose of the proposed action is to provide the opportunity to the arrowtooth flounder trawl fishing industry to retain more incidentally caught groundfish, thereby reducing discards. In its original problem statement the Council also wished for the ability to retain more groundfish in the arrowtooth flounder fishery in order to benefit the Amendment 80 fleet in meeting the groundfish retention standard (GRS). The purpose of the GRS is to create a standard for retention of groundfish for the BSAI groundfish fishery, by decreasing economic discards and increasing catch utilization. The GRS specifically addresses National Standard 9 of the Magnuson-Stevens Act, to reduce discards to the extent practicable.

In 1994, the Council set most of the groundfish MRAs to zero, relative to retained amounts of directed arrowtooth flounder, to prevent vessels from using arrowtooth flounder (a species for which no market existed) as a basis species for retention of more readily marketable species. At the 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, in the process, increase prohibited species catch (PSC) mortality of Pacific halibut. Increased halibut PSC rates could result in reaching halibut PSC limits before the total allowable catches (TACs) of groundfish, 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. Products made from arrowtooth flounder now include whole fish, surimi, head and gut, fillet, fill or engawa (fleshy fins used for sashimi and soup stock), bait, and meal.

In addition, starting in 2008, the Amendment 80 fleet was required to meet a minimum GRS of 65 percent of total groundfish, a rate that would increase incrementally over several years, to a maximum of 85 percent in 2011. The intent of the GRS is to create a retention standard for groundfish in the BSAI that would minimize discards, while maintaining a viable multi-species trawl fishery. By increasing the MRA for groundfish in the arrowtooth fishery, vessels can retain valuable groundfish species while at the same time improve their retention rate in order to meet the GRS.

In June 2008, the Council approved increasing the MRAs for the Gulf of Alaska (GOA) arrowtooth flounder fishery. With the exception of a few specific species to prevent “topping off,” the MRAs in the

GOA were set at 20 percent. In a similar fashion the Council in December 2009 initiated an analysis to consider changes to the MRAs of groundfish in the arrowtooth flounder fishery in the BSAI. The MRAs for incidentally caught species in the BSAI arrowtooth flounder fishery are currently set at zero percent with the exception of aggregated forage fish category at 2 percent. At its June 2010 meeting, the Council developed a problem statement, which is provided below:

When the MRAs for the directed BSAI arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowance 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 constrained by MRAs in the directed BSAI 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. MRAs 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. In addition, the regulatory discard of these species could also potentially hamper Amendment 80 vessels trying to meet the increasingly challenging groundfish retention standard. Currently, the GRS is 80 percent, but in 2011, the GRS will increase to 85 percent.

This regulatory amendment would evaluate raising the MRAs for most species in the directed BSAI arrowtooth flounder fishery, to provide increased opportunity for retention of species harvested by the trawl sectors, reduce overall discards in this sector, and help improve the ability of the Amendment 80 fleet in meeting the mandatory 85 percent GRS that will be implemented in 2011, while not subjecting incidentally caught species to increased allocation concerns.

In June 2010, the Council approved a request for NMFS to implement an emergency rule to relieve the GRS requirement for the non-American Fisheries Act (non-AFA) trawl catcher/processors. The Council determined that an emergency exists because recent assessments of the GRS program indicate that regulatory provisions for the GRS present unintended compliance and enforcement costs beyond those necessary to meet Council objectives under Amendments 79 and 80. The Council determined that an emergency exists because recent assessments of the GRS program indicate that regulatory provisions for the GRS present unintended compliance and enforcement costs beyond those necessary to meet Council objectives under Amendments 79 and 80. NMFS published the emergency rule in the Federal Register on December 15, 2010 (75 FR 78172). The Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and recommended a regulatory amendment to remove the GRS program at its February 2011 meeting.

Under each of the alternatives discussed below, as a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder, several regulatory housekeeping revisions need to be made to facilitate recordkeeping, reporting, and catch accounting. In the proposed rule for this action, NMFS proposed that should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. NOAA Office for Law Enforcement considered this to be a necessary restriction because the NOAA Office for Law Enforcement is unable to distinguish between arrowtooth and Kamchatka flounder, when they are processed. NMFS believed that this measure was necessary for the management of groundfish MRAs where the arrowtooth and Kamchatka flounder were used as basis species and may have provided the fishing industry additional incentive to avoid reaching the TAC for either arrowtooth or Kamchatka flounder. After the Council recommended that NMFS implement the preferred alternative, and prior to the publishing of the proposed rule, a new procedure developed by NOAA Office for Law Enforcement and the Amendment 80 sector to apply NMFS certified observer estimates of arrowtooth flounder and Kamchatka flounder catch proportions to verify that the retention requirements for either of

these species when close to directed fishing are not exceeded. This procedure has allowed for compliance with MRA accounting requirements for these two species despite the species identification issues for arrowtooth flounder and Kamchatka flounder in the processed product form. This procedure allows for groundfish to be retained up to the MRA when either Kamchatka flounder or arrowtooth flounder are open to directed fishing based on the composition of arrowtooth flounder and Kamchatka flounder in observer samples. The final rule amends Table 11 to Part 679, by removing footnote 9, and adds separate MRAs for groundfish caught incidentally to arrowtooth flounder and Kamchatka flounder. For the purposes of allocating trawl PSC limits among fisheries, § 679.21(e)(3)(iv)(C) would be revised to include Kamchatka flounder with arrowtooth and Greenland turbot directed fishery season dates. In the season start dates §679.23(e)(1) would be revised to include Kamchatka flounder with a start date of May 1.

Table 3 Product Recovery Rates (PRR) for groundfish species and conversion rates for Pacific halibut would be revised to eliminate PRRs for individual species of flounders, sole, and turbot and establish a single PRR for all flatfish (except halibut) in order to allow for flatfish species other than yellowfin sole to be processed in the form of surimi, and to simplify the table and reduce confusion by having identical MRAs for all groundfish retained when arrowtooth and Kamchatka flounder are open to directed fishing. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) were made. Finally, in a separate action, currently being prepared by NMFS, Table 2a Groundfish Species Codes will be revised to include Kamchatka flounder with a species code number of 117.

2.0 DESCRIPTION OF ALTERNATIVES

The alternatives establish MRAs for incidental catch species relative to the arrowtooth flounder fishery as a basis species over a range of values. Alternative 1 (status quo) has the lowest MRA percentages. Alternative 2 would set the MRAs for the arrowtooth flounder fishery equal to the MRAs for the Pacific cod fishery, Alternative 3 would set the MRAs for the arrowtooth flounder fishery equal to the MRAs for the flathead sole fishery, and Alternative 4 would set the MRAs for the arrowtooth flounder fishery equal to the MRAs for the Pacific cod fishery except for Greenland turbot and the other species group. The MRAs for each incidental catch species relative to arrowtooth flounder species group as a basis species within each alternative are compared in Table 2-1.

Alternative 1: Status Quo

Alternative 2: Set the MRAs for the arrowtooth flounder fishery at the current Pacific cod fishery levels

Suboption 2.1: Set the MRA for Greenland turbot at 15 percent
Suboption 2.2: Set the MRA for Greenland turbot at 7 percent
Suboption 2.3: Set the MRA for the other species group; consisting of skates, sharks, octopus and sculpins in the aggregate, at 3 percent

Alternative 3: Set the MRAs for arrowtooth flounder at the current flathead sole fishery levels

Suboption 3.1: Set the MRA for Greenland turbot at 15 percent

For MRA and PSC management purposes, catches of arrowtooth flounder and Kamchatka flounder would continue to be managed as an arrowtooth flounder group (see preferred alternative at 2.1.4).

Alternative 4: Set the MRAs for the arrowtooth flounder fishery at the current Pacific cod fishery levels (with suboptions 2.2 and 2 3 as the preferred alternative)

Suboption 2.2: Set the MRA for Greenland turbot at 7 percent (preferred alternative)
Suboption 2.3: Set the MRA for the other species group; consisting of skates, sharks, octopus and sculpins in the aggregate, at 3 percent (preferred alternative)

Table 2-1 Comparison of MRAs for groundfish in the arrowtooth flounder fishery in the BSAI under Alternatives 1, 3, and the preferred Alternative 2 with suboptions 2.2 and 2.3 (Alternative 4).

Incidental catch Species	Alternaitve 1 MRA percent	Alternative 2 MRA percent	Alternative 3 MRA percent	Perferred Alternative 4
Pollock	0	20	20	20
Pacific cod	0	20	20	20
Atka mackerel	0	20	20	20
Alaska place	0	20	35	20
Arrowtooth	n/a	n/a	n/a	n/a
Yellowfin sole	0	20	35	20
other flatfish [1]	0	20	35	20
Rock sole	0	20	35	20
Flathead sole	0	20	35	20
Greenland turbot[4]	0	1	35	7
Sablefish	0	1	15	1
Shortraker/rougheye	0	5	7	2
Other rockfish [2]	0	2	15	5
Squid	0	20	20	20
Aggregated forage fish	2	2	2	2
Other species [3]	0	3	20	3

[1] Other flatfish includes all flatfish species, except for Pacific halibut (a prohibited species), flathead sole, Greenland turbot, Rock sole, yellowfin sole, Alaska plaice, arrowtooth flounder, and Kamchatka flounder

[2] Other rockfish includes all *Sebastes* and *Sebastolobu* s species except for Pacific ocean pearch; and northern, shortraker, and rougheye rockfish

[3] Other species includes sculpins, sharks, and octopus.

[4] Alternative 2, Suboption 2.1 is 7% and 2.2 is 15%

2.1.1 Alternative 1: Status Quo (No Action)

This is the No Action or status quo alternative. 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 2-1 and in Table 11 to 50 CFR part 679 (Appendix 1). Under this alternative only forage fish may be retained relative to arrowtooth flounder as a basis species. All other incidental species, when on MRA status, must be discarded relative to retained arrowtooth flounder.

2.1.2 Alternative 2: Set MRAs Equal to Pacific cod MRAs

Under this alternative, the Council proposed MRAs for incidental catch of groundfish, relative to arrowtooth flounder as a basis species, to be set equal to MRAs in the Pacific cod directed fishery, providing for a more conservative approach for retention compared to Alternative 3. As depicted in Table 2-1, the MRAs for most incidentally taken species would be increased to 20 percent. For Greenland turbot and sablefish the MRAs would increase only to 1 percent, to allow some retention of incidental catch of

these valuable species, while at the same time discourage potential topping off of these species. At its June 2010 meeting, the Council, concerned the 1 percent MRA for Greenland turbot could result in high regulatory discards, added a suboption that would set the MRA for Greenland turbot at 15 percent rather than 1 percent. For aggregated shortraker/rougheye rockfish and aggregated forage fish the MRA would increase to 2 percent to allow for some retention but the MRA offers a more conservative approach for retention when compared to Alternative 3. Finally, other rockfish, which includes all *Sebastes* and *Sebastolobus* species except Pacific ocean perch and northern, shortraker, and rougheye rockfish, would be increased to 5 percent to allow some retention of these rockfish species, but again to provide a more conservative approach for retention than Alternative 3.

2.1.3 Alternative 3: Set MRAs Equal to Flathead Sole MRAs

Under Alternative 3, the Council proposed MRAs for incidental catch, relative to arrowtooth flounder as a basis species, to be set equal to MRAs in the flathead sole fishery to allow for greater retention. Similar to Alternative 2, the MRAs under Alternative 3 would increase for all groundfish species. Comparing the proposed increases in MRAs under this alternative to Alternative 2, pollock, Pacific cod, and Atka mackerel would remain at 20 percent, while the MRAs for Alaska plaice, yellowfin sole, other flatfish, rock sole, flathead sole, and Greenland turbot would increase to 35 percent, to allow more retention of these species. Sablefish and other rockfish MRAs would increase to 15 percent, while shortraker/rougheye MRAs would increase to 7 percent, to allow higher retention, but discourage topping off of these species. The MRA for aggregated forage fish would remain at 2 percent. In June 2010, the Council, concerned the 35 percent MRA for Greenland turbot could result in a top off fishery, added a suboption that would lower the MRA for Greenland turbot from 35 percent to 15 percent.

2.1.4 Alternative 4: Preferred Alternative

In October 2010, the Council selected its preferred alternative that would revise the MRAs of groundfish in the BSAI arrowtooth flounder fishery. The Council selected Alternative 2, which, with the exception of Greenland turbot and the other species group, would revise the MRAs in the arrowtooth flounder fishery to equal those in the Pacific cod fishery. Suboptions 2.2 and 2.3 would adjust the MRAs for Greenland turbot and the other species group to 7 percent and 3 percent, respectively, to allow for some retention of these species near average 2003-2009 incidental catch levels thereby reducing regulatory discards, while at the same time discouraging the development of a “top off” fishery for these species. Note: from this point on Alternative 2 with suboptions 2.2 and 2.3 are referred to as Alternative 4.

In addition, the Council, recognizing the development of a new separate target category for Kamchatka flounder, which has been managed in the arrowtooth/Kamchatka flounder species group, recommended that Kamchatka flounder be managed with arrowtooth flounder for purposes of MRA and PSC management.

Under each of these alternatives as discussed above as a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several regulatory housekeeping revisions were made to facilitate recordkeeping, reporting, and catch accounting. Under Alternatives 2, 3 and 4, due to difficulties in distinguishing between arrowtooth and Kamchatka flounder NMFS included regulations in the proposed rule that should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. NMFS believed that this measure may have been necessary for the management of groundfish MRAs using the arrowtooth species group as basis species and would have provided the fishing industry additional incentive to avoid reaching the TAC for either arrowtooth or Kamchatka flounder. Subsequent to the publishing of the proposed rule, a new procedure developed by NOAA Office for Law Enforcement and the Amendment 80 sector has allowed for compliance with MRA

accounting requirements for these two species despite the species identification issues for arrowtooth flounder and Kamchatka flounder in the processed product form. This procedure allows for groundfish to be retained up to the MRA when either arrowtooth flounder or Kamchatka flounder are open to directed fishing based on the composition of arrowtooth flounder and Kamchatka flounder in observer samples described in section 1.1. The final rule amends Table 11 to Part 679, by removing footnote 9, and adds separate MRAs for groundfish caught incidentally to arrowtooth flounder and Kamchatka flounder. In the proposed rule, footnotes 2 and 9 to Table 11 were revised to include Kamchatka flounder and to clarify the use of arrowtooth and Kamchatka flounder as basis species for the purpose of retaining incidental catch of groundfish. In footnote 9, arrowtooth and Kamchatka flounder were to be aggregated for the purpose of using either species as a basis and incidental species when calculating MRAs. This footnote applied when either of these groundfish species was open or closed to directed fishing. The subsequent public comment requested that this restriction be removed. Upon sonsultaiton with NOAA Office for Law Enforcement, NMFS agreed with this comment because based upon the procedure articulated in Section 1.1, there is no longer an Enforcement concern. NMFS also agreed with this comment, because calculating retained catch separately for arrowooth flounder and Kamchatka flounder is likely to reduce discards without negatively impact to management of the fishery or any groundfish stock, when arrowtooth flounder or Kamchatka flounder may both be used as a basis or incidental species. PSC limitations at § 679.21(e)(3)(iv)(C) would include Kamchatka flounder in the same trawl fishery category for PSC management as arrowtooth flounder. This revision is necessary to maintain identical management measures for arrowtooth flounder and Kamchatka flounder. Currently, Greenland turbot, arrowtooth flounder, and sablefish are in the same trawl fishery category for purposes of applying PSC limits. Season start dates at §679.23(e)(1) would be revised to establish the same fishing season for arrowtooth flounder and Kamchatka flounder and is necessary to manage the Kamchatka flounder in the same time period as the arrowtooth flounder fishery. These revisions would include Kamchatka flounder with arrowtooth flounder and Greenland turbot so that the season for all of these species would open on May 1. Because Kamchatka flounder has historically been harvested in the same fisheries and time periods as arrowtooth flounder, establishing the same season for Kamchatka flounder directed fishing would ensure the temporal management of Kamchatka flounder would be consistent with the temporal management of the arrowtooth flounder fishery. Table 3 PRR for groundfish species and conversion rates for Pacific halibut would be revised to eliminate PRRs for individual species of flounders, sole, and turbot and establish a single PRR for all flatfish (except halibut) in order to include Kamchatka flounder. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) would be made. Finally, in a separate action, currently being prepared by NMFS, Table 2a Groundfish Species Codes will be revised to include Kamchatka flounder with a species code number of 117.

3.0 REGULATORY IMPACT REVIEW

This Regulatory Impact Review (RIR) evaluates the costs and benefits of four alternatives that evaluate changes in the BSAI arrowtooth flounder fishery MRAs. The purpose of the proposed action is to provide the opportunity to the arrowtooth flounder trawl fishing industry to retain more of their groundfish catch, thereby reducing discards.

3.1 What is a Regulatory Impact Review

This RIR is required under EO 12866 (58 FR 51735, September 30, 1993). The requirements for all regulatory actions specified in EO 12866 are summarized in the following statement from the order:

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

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

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

3.2 Existing Conditions

3.2.1 MRA Regulations

MRA regulations establish the calculation method and set individual MRAs for groundfish species, when directed fishing for that species is closed. The MRA is calculated as a percentage of the retained amount of a 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. Amounts that are caught in excess of the MRA percentage must be discarded. Appendix 1 lists retainable percentages for BSAI groundfish species used to calculate an MRA.

MRAs are the primary tool NMFS used to regulate the catch of species closed to directed fishing. NMFS closes directed fishing 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 when a directed fishery has attained a prohibited species limit (e.g., halibut limits). When NMFS prohibits directed fishing for a groundfish species, retention of incidental catch of that species is allowed, up to an MRA calculated amount.

The MRA table (Table 11 to 50 CFR part 679 and Appendix 1 of this document), shows retainable proportions of incidental species, relative to species open 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. Non-target species in a directed fishery are the incidental species. The MRA percentages are intended to slow the rate of harvest of a species when insufficient TAC amounts are available to support a directed fishery.

There are three steps to calculating an MRA. First, the vessel operator identifies and calculates the round weight of the basis (or target) species onboard. Next, he or she identifies the appropriate fraction from the MRA table and, last, multiplies that rate against the calculated 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. With the exception of pollock, the vessel operator must calculate the MRA in real time, at any time during the fishing trip, often referred to as an "instantaneous" calculation. The one exception, pollock harvested by non-AFA vessels, is calculated at the end of each offload. 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 that species occurring in directed groundfish fisheries that remain open. 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 a species' expected or accepted incidental catch rate. MRAs are typically set to allow for limited targeting of a species up to the MRA. When a vessel operator seeks to target an incidentally caught groundfish fishery up to the MRA, this is often referred to as "topping off." An MRA that is set below the rate that an incidentally caught species may be encountered by vessels, may supress the number of fishing trips a vessel would otherwise make during an open season.
For several incidental/basis species combinations, the use of low MRA rates may reduce the incentive for topping off (i.e., covert targeting) that would occur in the absence of this tool. In other cases, the MRAs represent the expected catch of an incidental species, absent any deliberate action by the vessel operator to target that incidental species (i.e., the natural rate of incidental catch).

The requirement to not exceed an is intended to limit total catch of groundfish species (1) with low TACs (relative to the target species caught in the directed fisheries), (2) at greater risk of being caught in excess of the overfishing level, and (3) of sufficiently high value to induce covert targeting. Atka mackerel, Pacific cod, Greenland turbot, sablefish, and several rockfish species meet these criteria in the BSAI.

3.2.2 Overview of the Amendment 80 Program

The BSAI Amendment 80 program was approved by the Council in June 2006. The program allocates a portion of TACs for Atka mackerel, Pacific ocean perch, and three flatfish species (yellowfin sole, rock sole, and flathead sole), along with an allowance of PSC quota for halibut and crab, to the Amendment 80 sector. All are managed as a hard cap. These allocations and allowances are issued annually, as quota share (QS), to owners of Amendment 80 vessels (or Limited License Program permit holders, if the vessel is "lost"), based on the vessel's catch history from 1998 through 2004. The QS can be fished within a cooperative (comprised of at least three separate entities, with at least 30 percent of the Amendment 80 vessels) as aggregated cooperative quota. Amendment 80 QS holders who do not form a cooperative arrangement with others are placed in the Amendment 80 limited access fishery and continue to compete with each other for catch and PSC.

During the development of Amendment 80, the Council recommended a separate action, Amendment 85 to the BSAI FMP, to revise allocations of Pacific cod among the many BSAI groundfish sectors. Amendment 85 allocates Pacific cod and additional PSC to nine harvesting sectors, including the Amendment 80 sector. The timing of these amendments coincided, so that the Pacific cod allocation was integrated with the Amendment 80 program as implemented beginning in 2008.

Allocations of target species to the Amendment 80 sector are as follows:

Yellowfin sole (up to 93 percent of the TAC, depending on overall TAC)

Rock sole (100 percent)
Flathead sole (100 percent)
Atka mackerel (90 percent to 100 percent of the TAC depending on subarea)
Aleutian Islands Pacific ocean perch (90 percent to 98 percent depending on subarea)
Pacific cod (13.4 percent of the TAC, allocated under Amendment 85)

Allowances of PSC halibut and crab are made to the Amendment 80 sector and the BSAI trawl limited access sector (which includes all trawl vessels that are not in the Amendment 80 sector or are not fishing for community development quota [CDQ] groundfish). For the Amendment 80 sector, these PSC limits are reduced annually, over the first 5 years following implementation. The program was implemented at the start of the 2008 fishery.

For the 2008, 2009, and 2010 fishing years, participants formed one cooperative, the Best Use Cooperative, which includes 17 of the 24 vessels that received initial QS.

3.2.3 GRS Regulations

The GRS requires a minimum retention of all federal groundfish in the BSAI for non-AFA trawl catcher/processors. The GRS requirement began at 65 percent in 2008, rose to 75 percent in 2009, and 80 percent in 2010. Under GRS, each vessel participating in the limited access fishery must ensure that it meets the GRS requirements, based on the amount of catch retained by that vessel. Vessels participating in a cooperative can aggregate the total catch by all vessels in the cooperative and the total retained catch by all vessels in the cooperative.

At the June 2010 meeting, the Council requested that NMFS develop an emergency rule to relieve the GRS requirement for the non-AFA trawl catcher/processors. The Council determined that an emergency exists because recent assessments of the GRS program indicate that regulatory provisions for the GRS present unintended compliance and enforcement costs beyond those necessary to meet Council objectives under Amendments 79 and 80. Given the estimated increase in groundfish retention since 2003, it appears that the Council's policy objectives to decrease bycatch and waste in the non-AFA trawl catcher/processor sector have been largely successful. Since the adoption of the GRS program, the Council has taken action under Amendment 80 to facilitate the participation of all Amendment 80 vessels in one or more cooperatives in the future, thereby increasing the ability of vessels to minimize discards though the cooperative structure and civil contracts. The Amendment 80 sector has operated under a cooperative system for nearly three years in a manner that seems to facilitate compliance with the GRS program to date.

The Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and considered an analysis supporting a regulatory amendment to revise the GRS program at its December 2010 meeting. For the interim period during which an FMP amendment and associated regulations are developed and implemented, the Council requested that NMFS implement an emergency rule to suspend the GRS program for the 2010 and 2011 fishing years. As noted earlier, NMFS published the emergency rule in the Federal Register on December 15, 2010 (75 FR 78172). The emergency rule expired on December 31, 2011. The Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and recommended a regulatory amendment to remove the GRS program at its February 2011 meeting. That rule would need to be published in the federal register by December 1, 2011 to be effective at removing all requirements for the GRS during 2011.

3.2.4 Description of the Flatfish Fisheries

Most of the flatfish catch in the Bering Sea is harvested by the Amendment 80 sector, often referred to as the head and gut sector. Some flatfish is also harvested by other trawl vessels (both catcher vessels and catcher/processors), and by vessels using longline and pot gear. Until 2008, both trawl and non-trawl fisheries for flatfish in the Bering Sea were prosecuted under a single TAC. In 2008, Amendments 80 and 85 to the BSAI FMP were implemented, which created sector allocations for the three main flatfish species (yellowfin sole, rock sole, and flathead sole), as well as three other species, and allowed cooperatives to form in the Amendment 80 sector.

Table 3-1 identifies all the target flatfish species and species categories in the Bering Sea for which TAC is allocated, and the areas and, as appropriate, seasons for which TACs are apportioned. Although TACs are set for the BSAI as a whole, flatfish are mainly caught in the Bering Sea, with the exception of Greenland turbot.

For groundfish that are not allocated to cooperatives, NMFS inseason management determines whether to allow directed fishing for a target species, based on their ability to manage the resultant fishery in such a way as to meet the quota without exceeding the overfishing limit for each target species. For some species and sectors, the TACs are not large enough to support a directed fishery, and can only be harvested "incidentally" to other target fisheries. Also, the directed fisheries in the BSAI cannot be prosecuted without bycatch of other groundfish species, so incidental catch needs, as well as directed fishery needs, are taken into account.

Table 3-1 Status of flatfish trawl fisheries, 2010

Species	Apportionments	Open for directed fishing	Bycatch-only status[a]
Yellowfin sole	BSAI	Am 80 cooperatives: 20-Jan to year end Am 80 limited access: 20-Jan to year end BSAI trawl limited access: 20-Jan to year end	
Flathead sole	BSAI	Am 80 cooperatives: 20-Jan to year end Am 80 limited access: 20-Jan to 28-May	BSAI trawl limited access: 20-Jan to year end Am 80 limited access: 28 May to year end
Rock sole	BSAI	Am 80 cooperatives: 20-Jan to year end Am 80 limited access: 20-Jan to 28-May	BSAI trawl limited access: 20-Jan to year end Am 80 limited access: 28-May to year end
Arrowtooth flounder	BSAI; directed fishing begins May 1	Am 80 cooperatives: 1-May to year end	all other trawl: 1-Jan to year end
Alaska plaice	BSAI	Am 80 cooperatives: 20-Jan to year end Am 80 limited access: 20-Jan to year end BSAI trawl limited access: 20-Jan to year end	
Other flatfish	BSAI	Am 80 cooperatives: 20-Jan to year end Am 80 limited access: 20-Jan to 28-May BSAI trawl limited access: 20-Jan to year end	Am 80 limited access: 28-May to year end
Greenland turbot	separate for BS and AI; directed fishing begins May 1	AI Am 80 cooperatives: 1-May to 29-June AI Am 80 limited access: 1-May to 29-June BS Am 80 cooperatives: 1-May to year end BSI Am 80 limited access: 1-May to year end	AI Am 80 cooperatives: 29-June to year end AI Am 80 limited access: 29-Juneto year end all other trawl: 1-Jan

Source: NMFS website, Status of Trawl Gear Fisheries, updated 11/16/2010 http://www.alaskafisheries.noaa.gov/2010/trawl2010.pdf.

[a] Vessels may only retain the species incidentally while fishing in another directed fishery, up to a specified maximum retainable amount.

The three main flatfish targets are yellowfin sole, rock sole, and flathead sole. Catch of flatfish species in the BSAI, from 2000 through 2009, is shown in Table 3-2. Yellowfin sole is one of the most abundant flatfish species in the eastern Bering Sea and is the largest target in the flatfish fishery . In 2009, 107,528 metric tons (mt) of yellowfin sole were caught in the BSAI, 118,439 mt were caught in 2010. The yellowfin sole directed fishery can occur from spring through December. For rock sole, the trawl fishery harvested 48,621 mt in 2009 and 53,179 in 2010. For flathead sole, the trawl catch was 19,549 mt in 2009 and 19,651 mt in 2010.

Table 3-2 Total catch of Bering Sea/Aleutian Islands flatfish species by vessels using trawl gear, including community development quota catch, 2000 through 2010

Year	Yellowfin sole	Rock sole	Flathead sole	Arrowtooth flounder	Alaska plaice	"Other flatfish"	Greenland turbot
2000	83,444	47,519	19,207	10,271	*	16,167	1,760
2001	62,654	28,201	17,132	11,170	*	9,738	1,609
2002	74,097	39,338	14,467	8,704	12,163	2,389	777
2003	73,581	34,495	13,381	13,294	9,673	2,756	575
2004	74,808	47,824	16,763	18,151	7,888	4,566	479
2005	93,590	36,764	15,450	14,243	11,194	4,311	427
2006	98,624	35,854	17,399	13,386	17,314	2,977	183
2007	120,554	35,990	18,350	11,916	19,426	5,760	251
2008	148,237	50,911	24,188	21,884	17,375	3,544	1,222
2009	107,528	48,621	19,549	30,367	13,944	2,163	4,439
2010	118,439	53,179	19,651	39,416	16,162	2,072	1,977

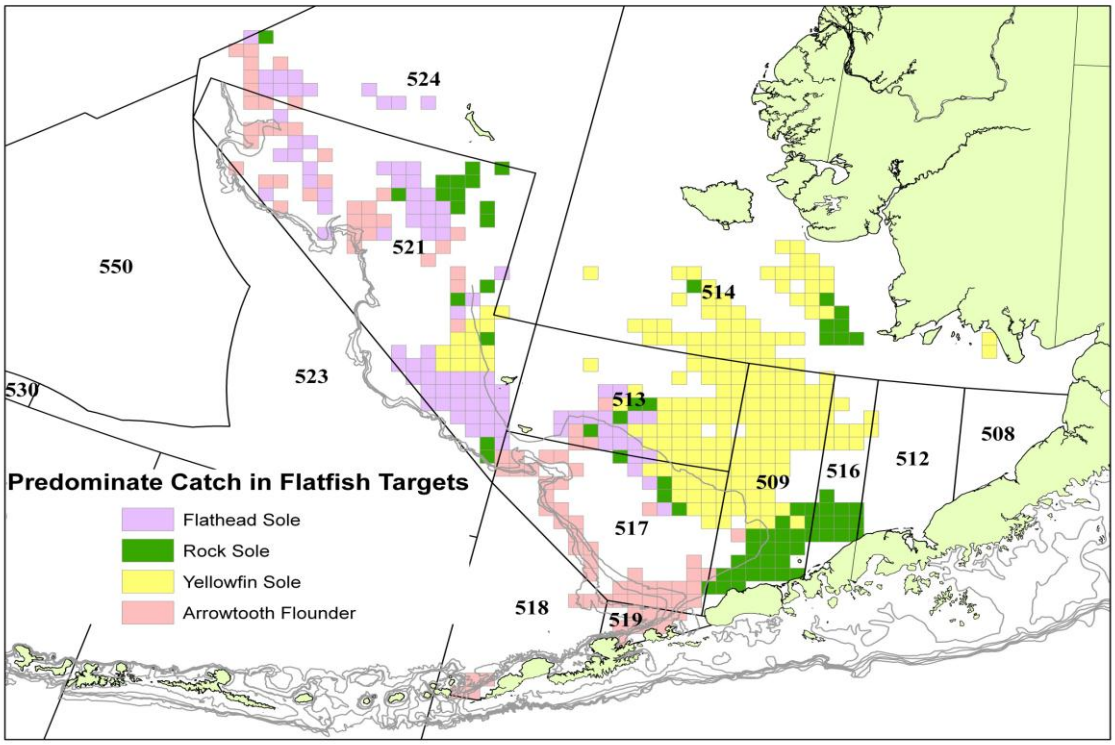
* Alaska plaice was part of the "other flatfish" category until 2002.

Source: NMFS catch accounting

3.2.5 Timing and Location of Flatfish Fisheries

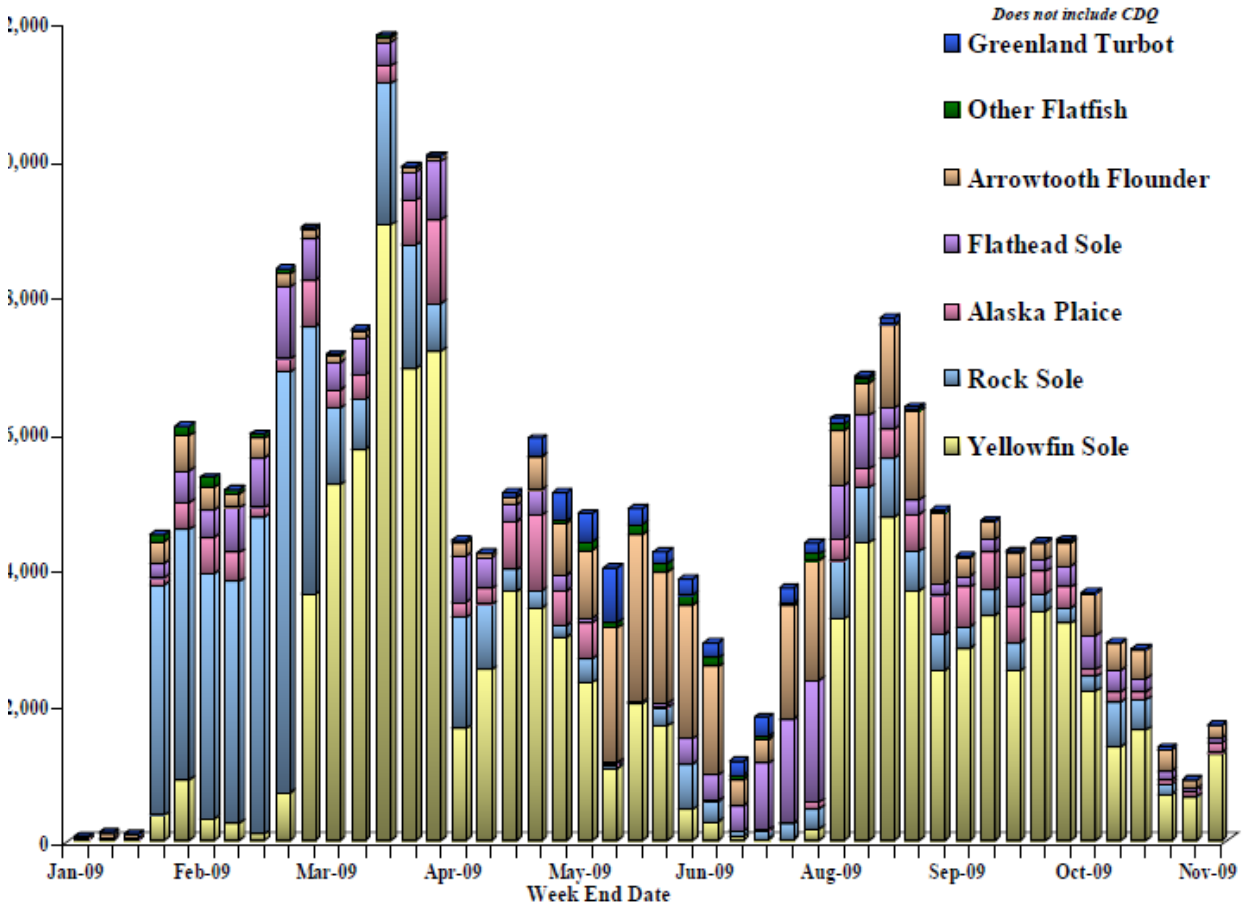
Flatfish fishing occurs primarily on the shelf area of the Bering Sea, south of Nunivak and St. Matthew Islands. Figure 3-1 shows the location of the flatfish fisheries in 2009. Figure 3-2 shows the timing of all of the BSAI flatfish fisheries for 2009.

Figure 3-1 Distribution of the BSAI flatfish fishery in 2009



Note: Numbered polygons are statistical areas.
Source: NMFS 2009

Figure 3-2 Timing of the BSAI flatfish fisheries in 2009



Source: NMFS 2009

3.2.6 Description of the BSAI Arrowtooth Flounder Fishery

Two species of *Atheresthes* occur in the Bering Sea. Arrowtooth flounder (*Atheresthes stomias*) and Kamchatka flounder (*A. evermanni*) are very similar in appearance and are not always distinguished in the commercial catches. Until about 1992, these species were also not consistently separated in trawl survey catches, and until 2010, were combined in the annual assessment. Arrowtooth flounder are found throughout the BSAI management area, however their abundance in the Aleutian Islands region is lower than in the eastern Bering Sea.

Catch records of arrowtooth flounder and Greenland turbot were combined during the 1960s. The fisheries for Greenland turbot intensified during the 1970s, and the bycatch of arrowtooth flounder is assumed to have also increased. In 1974 through 1976, total catches of arrowtooth flounder reached peak levels, ranging from 19,000 mt to 25,000 mt. Catches decreased after implementation of the Magnuson-Stevens Act, and the resource has remained lightly exploited with catches averaging 12,831 mt from 1977 through 2008 (NMFS 2009). This decline resulted from catch restrictions placed on the fishery for Greenland turbot, and phasing out of the foreign fishery in the U.S. exclusive economic zone (EEZ).

Although research has been conducted on their commercial utilization (NPFMC 2009a) and targeting occurs in the GOA, prior to 2008 arrowtooth flounder continued to be captured primarily in pursuit of other high value species and have historically been mostly discarded in the BSAI. In 2008, the Council,

having room under the optimal yield and receiving input from the fishing industry to increase the TAC for arrowtooth flounder, raised the TAC three-fold. In addition, retention of arrowtooth flounder increased significantly. As shown in Table 3-3, retention of arrowtooth flounder increased from what was generally below 50 percent prior to 2008, to 80 percent in 2009. In 2010 the catch of arrowtooth by trawl increased to 39,416 mt of which 81 percent (32,066 mt) was retained. This was likely due to two reasons. First, with the implementation of the GRS and Amendment 80 in 2008, and the subsequent changes in fishing behavior from these new management programs, the percentage of arrowtooth flounder retained has increased since the GRS was implemented and could increase further since the GRS reached 85 percent in 2011. Second, starting in 2008, there was a significant increase in fishing effort for Kamchatka flounder, which was included as part of the arrowtooth flounder fishery acceptable biological catch (ABC)/TAC. The increasing interest in Kamchatka flounder is likely due to developing markets for this product.

Table 3-3 TAC, total catch, retained and discarded catch for BSAI arrowtooth flounder from 2003 through 2009

Year	Annual TAC (mt)	Discarded (mt)	Retained (mt)	Percent retained	Total catch (mt)
2003	12,000	8,597	4,698	35%	13,294
2004	12,000	14,305	3,846	21%	18,151
2005	12,000	6,952	7,291	51%	14,243
2006	13,000	7,283	6,103	46%	13,386
2007	20,000	6,786	5,130	43%	11,916
2008	75,000	5,867	16,017	73%	21,884
2009	75,000	6,140	24,227	80%	30,367

Source: NMFS Catch Accounting

The MRA regulations identify basis and incidental species retention on different timeframes and species compositions and are not discernible in catch account target calculations. Therefore, Table 3-4, Table 3-5, Table 3-6, and Table 3-7 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 amount of annual retained and discarded species within the arrowtooth flounder fishery, therefore, does not reflect the MRA proportions, but rather, multiple "target" species caught together in the trawl groundfish fishery where arrowtooth flounder comprised the majority of the catch. 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 3-4 2006 catch of groundfish in the arrowtooth flounder target in the BSAI

Groundfish	Discarded (mt)	Retained (mt)	Total (mt)	Percent retained
Alaska Plaice	20	1	21	3.91
Arrowtooth Flounder	1,103	1,443	2546	56.68
Atka Mackerel	3	46	50	93.30
Flathead Sole	58	91	150	60.90
Greenland Turbot	19	141	160	88.21
Northern Rockfish	3	2	5	31.43
Other Flatfish	27	199	226	87.85
Other Rockfish	53	60	114	52.98
Other Species	241	114	355	32.03
Pacific Cod	5	406	411	98.88
Pacific Ocean Perch	3	24	27	89.68
Pollock	696	395	1092	36.21
Rock Sole	65	57	122	46.68
Sablefish	2	65	67	97.04
Shortraker/Rougheye Rockfish	46	8	55	14.76
Squid	4		4	0.00
Yellowfin Sole	38	32	71	45.83

Source: NMFS Catch Accounting

Table 3-5 2007 catch of groundfish in the arrowtooth flounder target in the BSAI

Groundfish	Discarded (mt)	Retained (mt)	Total (mt)	Percent retained
Alaska Plaice	4	1	5	15.92
Arrowtooth Flounder	133	654	787	83.12
Atka Mackerel	0	2	2	88.76
Flathead Sole	17	41	59	70.41
Greenland Turbot	0	19	19	97.47
Northern Rockfish	1	2	3	63.57
Other Flatfish	12	111	123	90.06
Other Rockfish	2	11	13	82.37
Other Species	72	40	112	35.45
Pacific Cod	4	77	81	95.01
Pacific Ocean Perch	7	27	33	79.69
Pollock	272	334	606	55.10
Rock Sole	10	47	57	82.55
Sablefish	1	17	18	96.78
Shortraker/Rougheye Rockfish	23	4	27	14.51
Squid	2	0	3	4.66
Yellowfin Sole	2	5	7	67.45

Source: NMFS Catch Accounting

Table 3-6 2008 catch of groundfish in the arrowtooth flounder target in the BSAI

Groundfish	Discarded (mt)	Retained (mt)	Total (mt)	Percent retained
Alaska Plaice	1	9	9	93.09
Arrowtooth Flounder	917	10,593	11511	92.03
Atka Mackerel	1	148	149	99.30
Flathead Sole	19	468	486	96.19
Greenland Turbot	414	762	1176	64.78
Northern Rockfish	0	2	2	77.47
Other Flatfish	9	537	546	98.28
Other Rockfish	50	65	115	56.60
Other Species	253	126	379	33.14
Pacific Cod	0	167	167	99.91
Pacific Ocean Perch	34	214	248	86.47
Pollock	219	519	738	70.32
Rock Sole	9	309	318	97.05
Sablefish	1	160	160	99.68
Shortraker/Rougheye Rockfish	5	15	20	74.80
Squid	46	0	46	0.86
Yellowfin Sole	1	10	11	92.24

Source: NMFS Catch Accounting

Table 3-7 2009 catch of groundfish in the arrowtooth flounder target in the BSAI

Groundfish	Discarded (mt)	Retained (mt)	Total (mt)	Percent retained
Alaska Plaice	0	29	29	99.34
Arrowtooth Flounder	795	19,129	19924	96.01
Atka Mackerel	1	4	5	82.80
Flathead Sole	4	244	248	98.55
Greenland Turbot	285	1,159	1443	80.27
Northern Rockfish	1	0	1	39.18
Other Flatfish	11	666	677	98.39
Other Rockfish	7	75	82	91.52
Other Species	218	54	272	19.73
Pacific Cod	5	198	203	97.51
Pacific Ocean Perch	109	337	446	75.55
Pollock	56	397	453	87.65
Rock Sole	2	41	43	95.84
Sablefish	3	116	119	97.18
Shortraker/Rougheye Rockfish	21	52	72	71.37
Squid	96	0	96	0.11
Yellowfin Sole	0	2	2	95.41

Source: NMFS Catch Accounting

In the BSAI, the arrowtooth flounder fishery is almost exclusively prosecuted by catcher/processors, primarily Amendment 80 vessels, using bottom trawl gear. Although arrowtooth flounder is open to trawl catcher vessels, hook-and-line, pot, and jig gear, very small amounts of BSAI arrowtooth flounder is harvested by these other gear types. Table 3-8 shows that in 2009, over 93 percent of the arrowtooth flounder was caught by trawlers. Of the arrowtooth flounder caught by trawlers, 94 percent was caught

using non-pelagic trawl, while 99 percent of that catch was caught by catcher/processors. The catch of BSAI arrowtooth flounder by hook-and-line gear in 2009 was approximately 7 percent.

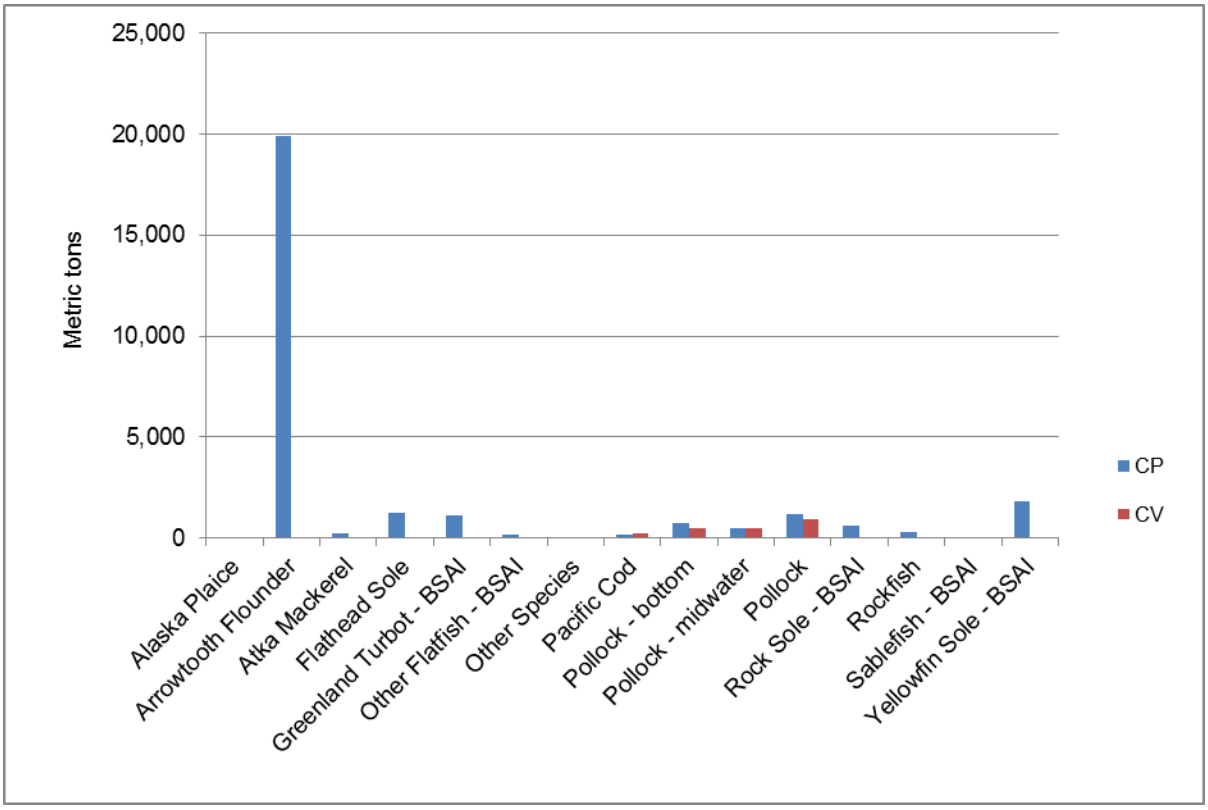
Table 3-8 2009 BSAI arrowtooth flounder catch by gear type and processing component

Gear type	Catcher Processors		Catcher vessels		Total catch (mt)
	Total catch	Percent of total	Total catch	Percent of total	
Non-pelagic trawl	26,142	98.87	299	1.13	26,440
Pelagic trawl	728	43.62	940	56.38	1,668
Trawl total	26,869	95.59	1,239	4.41	28,108
Fixed gear	2,156	95.47	102	4.53	2,258
Grand total	29,025	95.58	1,342	4.42	30,367

Source: NMFS Catch Accounting

As shown in Figure 3-3, trawl caught arrowtooth flounder is distributed among a few targets and tends to be grouped, based on processing mode. Catcher/processors take arrowtooth flounder predominately in the arrowtooth flounder target fishery, followed by the yellowfin sole, Greenland turbot, flathead sole, and pollock target fisheries, and small amounts in the rock sole and rockfish target fisheries. Catcher vessels take the majority of their arrowtooth flounder in the pollock target fishery followed by the Pacific cod fishery.

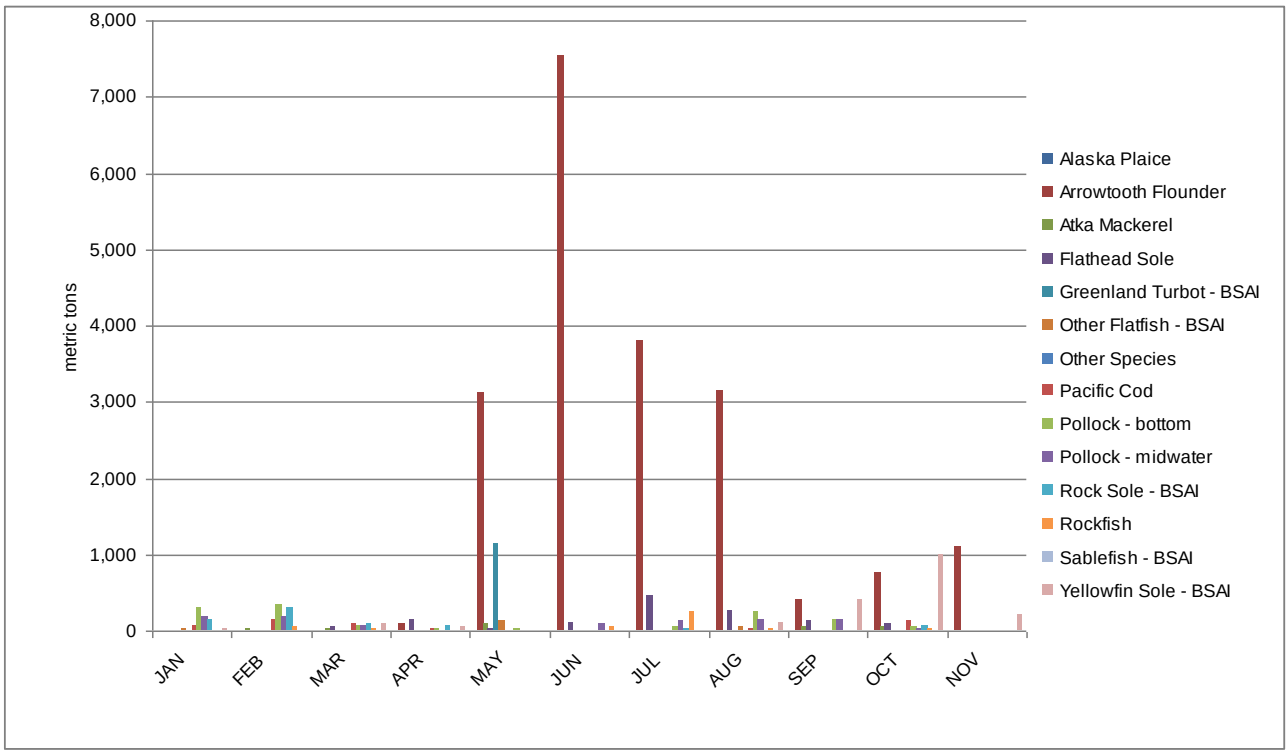
Figure 3-3 2009 BSAI trawl arrowtooth flounder catch by target and processing component



The BSAI arrowtooth flounder and Greenland turbot fisheries open on May 1. Once open, catcher/processors that target arrowtooth flounder have the opportunity to target AI Greenland turbot. This initial targeting of Greenland turbot after the opening of BSAI arrowtooth flounder and Greenland turbot fisheries has occurred in a previous year. Once the Greenland turbot fishery is closed on TAC, normally in two to three weeks, these vessels have target arrowtooth flounder in the Aleutian Islands area, because of its low halibut PSC rate and low groundfish bycatch rate. The timing of the arrowtooth

flounder fishery is reflected in Figure 3-4, which shows that a majority of the harvest of arrowtooth flounder occurs during the May to August time frame. Depending upon the halibut PSC available to the Amendment 80 sector after the summer season, the fleet may also target arrowtooth flounder during the October and November period. Note, the low groundfish bycatch rates are an increasingly important element, due to the implementation of the GRS in 2008.

Figure 3-4 2009 BSAI trawl arrowtooth flounder catch by target and month



Historically, arrowtooth flounder has had limited value, compared to many other groundfish species in the BSAI. Prior to 1994, the species was used as a very low valued basis species to target species closed to directed fishing. In 1994, all MRAs relative to arrowtooth flounder were set at zero. 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 PSC 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 in 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 prices for this fish fluctuate widely. A major hurdle in marketing arrowtooth flounder is its name. The fish was long associated with soft flesh that was unpalatable to many consumers. The muscle rapidly degrades during cooking, and in years past, this has resulted in a paste-like texture. This severe textural breakdown frustrated efforts to develop a market for this fish. Recently, several food grade additives have been successfully used to inhibit the enzymatic breakdown of the muscle tissue. These discoveries have enabled a targeted fishery to develop, including whole fish, surimi, headed and gutted, fillets, frills (fleshy fins used for sashimi and soup stock), bait, and meal (NPFMC 2009a). Attempts have been made to

expand production levels of surimi from arrowtooth flounder, and some analysts foresee it becoming an important species to produce surimi. While the economic feasibility of large-scale commercial production of arrowtooth flounder surimi is still uncertain, the current world-wide surimi supply shortage, caused by reductions in the U.S. pollock quota, may make the abundant arrowtooth flounder an increasingly attractive alternative raw material in the production of surimi seafood products. Regulations at 50 CFR 679 do not currently include a product recover rate for producing surimi from either arrowtooth flounder or Kamchatka flounder.

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 (NPFMC 2009a). 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 is processed and exported to the U.S. markets as inexpensive flounder. Some portion of 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 pound of retained arrowtooth flounder, received by both shoreside processors and catcher/processors, increased from 2003 through 2008 (Table 3-9). For shoreside processors, these estimates include the product value of catch from both federal and State of Alaska fisheries. For catcher/processors, 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, 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 3-9 Wholesale price per pound of arrowtooth flounder for the catcher/processors and shoreside processors from 2003 through 2008

Year	Floating Processor			Shoreside Processor			Catcher Processor		
	Pounds	Value ($)	Price per pound	Pounds	Value ($)	Price per pound	Pounds	Value ($)	Price per pound
2003	191,746	82,114	0.43	738,109	443,021	0.60	17,271,712	6,884,717	0.40
2004	174,621	100,177	0.57	3,684,116	1,914,041	0.52	5,088,720	2,789,695	0.55
2005	1,438,662	1,172,789	0.82	7,226,333	4,506,044	0.62	13,160,912	9,123,013	0.69
2006	3,282,181	1,666,568	0.51	11,453,643	5,549,085	0.48	7,283,036	4,365,982	0.60
2007	3,752,485	1,837,380	0.49	10,021,817	4,584,476	0.46	4,080,234	2,177,338	0.53
2008	6,022,195	3,784,311	0.63	12,317,889	7,623,845	0.62	14,644,303	10,543,120	0.72

Source: NMFS COAR

3.2.7 Pacific Halibut Bycatch

Prior to the implementation of Amendment 80, many flatfish fisheries, including arrowtooth flounder, were closed prior to attainment of the TAC, due to halibut PSC. This is illustrated for 2008, in Table 3-10, which shows the actual catch of flatfish species, compared to TAC. Actual harvest through November 1, 2008, represents between 10 percent and 74 percent of the TAC for each flatfish fishery.

Table 3-10 Catch of BSAI flatfish in 2008, as a percent of total allowable catch

Flatfish fishery		Total Catch (mt)	TAC (mt)	Percentage
Yellowfin sole	non-CDQ	139,403	200,925	69%
	CDQ	6,713	24,075	28%
Rock sole	non-CDQ	49,291	66,975	74%
	CDQ	1,911	8,025	24%
Flathead sole	non-CDQ	24,027	44,650	54%
	CDQ	464	5,350	16%
Arrowtooth flounder	non-CDQ	20,925	63,750	33%
	CDQ	828	8,025	10%
Alaska plaice	combined	17,126	42,500	40%
'Other flatfish'	combined	3,620	18,360	20%

Note: 2008 catch data through November 1. Source: NMFS 2008.

The trawl PSC limits are apportioned to Amendment 80 cooperatives and released seasonally to the following seven target fishery categories: yellowfin sole; rock sole/flathead sole/"other flatfish"; Greenland turbot/arrowtooth flounder/sablefish; rockfish; Pacific cod; and pollock/Atka mackerel/"other species." For Amendment 80 vessels, halibut PSC has been a constraint to fully utilizing target species,[4] and it has traditionally been allocated to the more valuable fisheries (Pacific cod, some flatfish fisheries), while other fishery categories (e.g., Greenland turbot/arrowtooth flounder/sablefish) are almost always underfunded. For this reason, these latter fisheries have rarely been open for directed trawl fishing, even if their TACs are large enough to support a directed fishery. A comparison of halibut mortality by target fishery, for 2007 and 2008, is provided in Table 3-11.

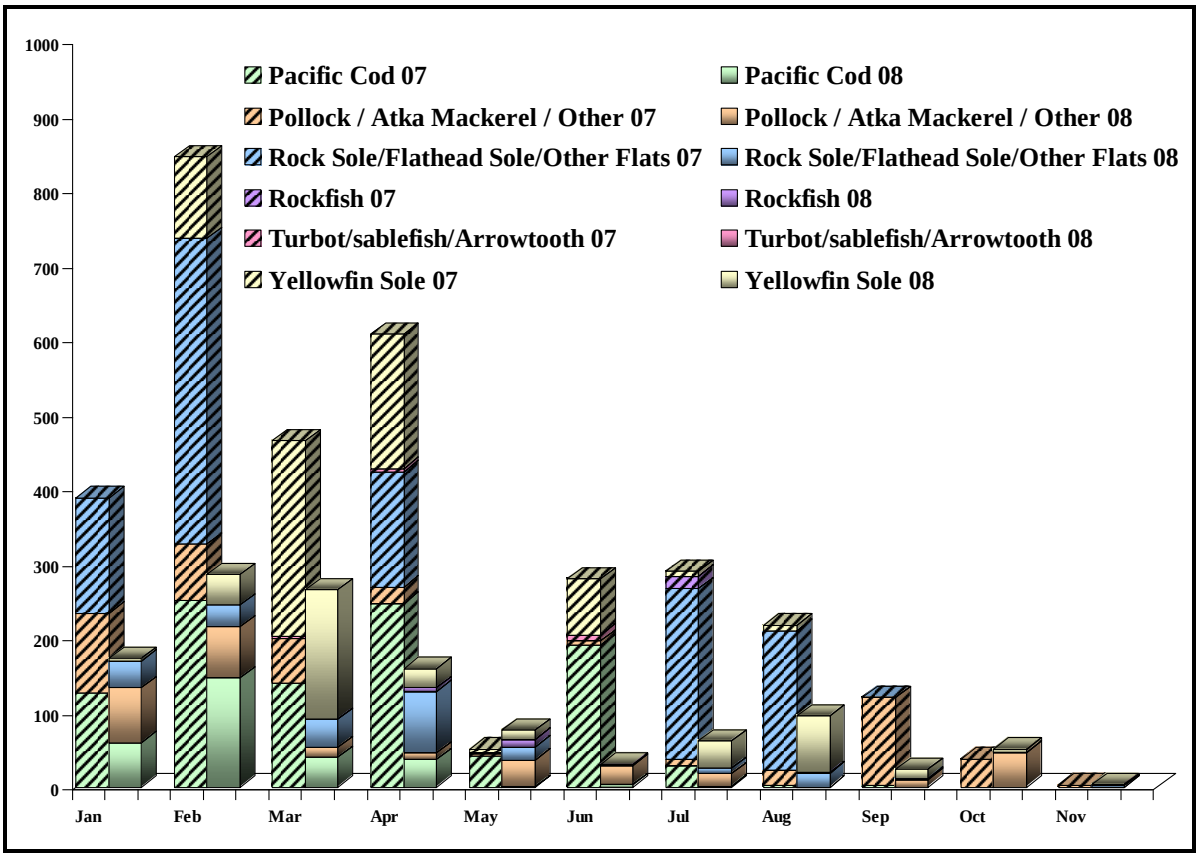
As of 2008, vessels belonging to an Amendment 80 cooperative have a lot more flexibility in their use of halibut PSC. Instead of having the halibut PSC assigned to a specific target fishery, the cooperative receives a lump sum allocation of halibut PSC, which they can dedicate to whichever target fisheries they choose. Consequently, in 2008 and 2009, the Greenland turbot and arrowtooth flounder fisheries were open to directed fishing (Table 3-11). For the Amendment 80 limited access group, there was not sufficient halibut assigned to the Greenland turbot/arrowtooth flounder fishery to open for directed fishing. However, in 2009, the fishery was sufficiently funded with enough halibut PSC to open for the Amendment 80 limited access group. Figure 3-5 illustrates the overall reduction in halibut bycatch mortality under Amendment 80, implemented in 2008.

[4] Halibut PSC limits were a major constraint to harvest of flatfish target species in the Amendment 80 sector until 2009. In subsequent years, other limited allocations of species such as Pacific cod and rock sole have tended to constrain catch of major flatfish target species. Considering PSC species only, halibut PSC limits and avoidance of crab bycatch are also likely to influence fishing patterns in the Amendment 80 sector.

Table 3-11 2007 and 2008 halibut mortality PSC limits for BSAI trawl fisheries, by sector, target fishery, and season

Year	Gear and sector	Target fishery category	Season	Halibut mortality (mt)
2007	Trawl fisheries	Yellowfin sole	January 20–April 1	312
			April 1–May 21	195
			May 21–July 1	49
			July 1–December 31	380
		Rock sole/other flat/flathead sole	January 20–April 1	498
			April 1–July 1	164
			July 1–December 31	167
		Turbot/arrowtooth/sablefish		0
		Rockfish	July 1–December 31	69
		Pacific cod		1,334
		Pollock/Atka mackerel/other		232
		2007 Trawl Fishery TOTAL		3,400
2008	Amendment 80 cooperatives			1,837
	Amendment 80 limited access	Yellowfin sole	January 20–July 1	214
			July 1–December 31	149
		Rock sole/other flat/flathead sole	January 20–April 1	180
			April 1–July 1	20
			July 1–December 31	24
		Turbot/arrowtooth/sablefish		0
		Rockfish		50
		Pacific cod		1
		Pollock/Atka mackerel/other		50
	BSAI trawl limited access	Yellowfin sole		162
		Rock sole/other flat/flathead sole		0
		Turbot/arrowtooth/sablefish		0
		Rockfish		3
		Pacific cod		585
		Pollock/Atka mackerel/other		125
		2008 Trawl Fishery TOTAL		3,400

Figure 3-5 Trawl halibut bycatch mortality by target fishery, 2007–2008



Note: 2008 catch data through November 1. Source: NMFS 2008.

3.3 Expected Effects of the Alternatives

This section provides an analysis of four alternatives: (1) Status Quo/No Action, (2) set MRAs equal to MRAs in the Pacific cod target fishery, (3) set MRAs equal to MRAs in the flathead sole target fishery, and (4) set MRAs equal to MRAs in the Pacific cod target fishery, except for Greenland turbot and other species. 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.

Under each of the action alternatives discussed below as a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several regulatory revisions need to be made to facilitate recordkeeping, reporting, and catch accounting. Footnotes 2 and 9 to Table 11 would be revised to include Kamchatka flounder. In the halibut PSC categories § 679.21(e)(3)(iv)(C) would be revised to include Kamchatka flounder. In the season start dates, §679.23(e)(1) would be revised to include Kamchatka flounder with a start date of May 1. Table 3 Product Recovery Rates for groundfish species and conversion rates for Pacific halibut would be revised and simplified to establish a single PRR for all flatfish (except halibut) in order to include Kamchatka flounder. In order to support flexibility in making

allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) are included to explain how NMFS will determine whether to allocate a portion of any new groundfish GAC category to the CDQ program in the annual harvest specification. Finally, in a separate action, currently implemented by NMFS, Table 2a Groundfish Species Codes will be revised to include Kamchatka flounder with a species code number of 117.

3.3.1 Alternative 1: Status Quo/No Action

Under Alternative 1, the MRAs would not be revised for groundfish species in the BSAI directed arrowtooth flounder fishery. Maintaining the existing MRAs would continue to require trawl catcher vessels and catcher/processors to discard any groundfish species that have a zero MRA, 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 3.2). 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. Under Alternative 1, this potentially could result in higher regulatory discards of valuable incidental catch species.

Frequently, vessels targeting arrowtooth flounder also harvest lesser amounts of flathead sole, yellowfin sole, Greenland turbot, 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 Office of Law 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 and Kamchatka flounder in the other flatfish species group, these target fisheries have not required high levels of enforcement resources.

3.3.2 Alternatives 2, 3 and the preferred alternative 4.

Impacts to the Arrowtooth Flounder and Kamchatka flounder fisheries

As previously noted in 3.3, the economic effect to the Nation or to any of the sectors of any of the action alternatives, are indeterminate. The returns to the fishing industry or Nation from groundfish fisheries subject to the alternatives could be influenced by many variables. Market prices for groundfish or environmental conditions may vary in ways that impact the value of groundfish in these fisheries. While this analysis does not predict any directional change in the benefits to the nation from each of the alternatives, the potential exists that Alternatives 2, 3 or 4 may reduce regulatory discards. . If discards of groundfish closed to directed fishing when the arrowtooth flounder or Kamchatka flounder fishery are open to directed fishing were to measurably change, current analytical information available is insufficient to determine the thealternatives resulted in different gross earnings or industry costs for the participants in these groundfish fisheries compared to the status quo. Some anecdotal information is available on the possible effects of the alternatives. Industry representatives in the Amendment 80 sector report that when they are required to discard groundfish (as is the case with groundfish species caught in the arrowtooth/Kamchatka fishery under Alternative 1) they would otherwise choose to retain, process and sell, the requirement to discard these groundfish may result in some reduction in the net benefits to specific operations.

In the following sections, the behavioral effects of the alternatives on target fisheries, other groundfish species closed to directed fishing, and some potential economic effects of the alternatives are included. Table 3-12 summarizes these effects and economic consequences.

Table 3-12 Potential Change to Fishing and Processing Behavior of BSAI Groundfish Participants and Economic Effects of Alternatives 2, 3, and 4 compared with Alternative 1

Effect/ benefits-costs compared with Alt 1	Alternative 2	Alternative 3	Alternative 4
MRA % proposed compared with MRAs in Alt 1	Groundfish MRAs (except for forage fish) increased from Alt 1 & lower than Alts 2 and 3.	Groundfish MRAs (except for forage fish) increased from Alt 1, most groundfish MRAs greater than Alt 3 & 4	Groundfish MRAs (except for forage fish) increased from Alt 1, but intermediate between Alts 2 and 3.
Change retention amounts compared w Alt 1	Increase retention & production to portion of vessels in Amendment 80 sector. Possibly less increase than Alts 3 and 4. Likely higher 80 sector benefits than Alt 1. Consumer surplus could increase if greater production results in reduced retail prices.	Increase retention & production to portion of vessels in Amendment 80 sector, compared with Alts 1, 2, & 4. Likely higher 80 sector benefits than Alt 1. Consumer surplus could increase if greater production results in reduced retail prices.	Increase retention & production to portion of vessels in Amendment 80 sector. Possibly less increase than Alt 3, and more than Alt 2. Likely higher 80 sector benefits than Alt 1. Consumer surplus could increase if greater production results in reduced retail prices.
Change fleet behavior (location/transiting), with respect to Alt 1	Potential increase in incentive to shift effort to catch more arrowtooth/Kamchatcka flounder compared with Alt 1, & less than Alts 3, &4. Possible increase in transit & movement costs.	Potential increase in incentive to shift effort to catch more arrowtooth/Kamchatcka flounder compared with Alts 1, 2 & 4. Possible increase in transit and movement costs.	Potential increase in incentive to shift effort to catch more arrowtooth/Kamchatcka flounder compared with Alts 1 &2 but less than 3 . Possible increase in transit and movement costs.
Change fleet behavior (target catch increases) compared w Alt 1.	Potential to increase target catch of arrowtooth and Kamchatka flounder compared with Alt 1. Potential increase in gross revenues, total processing costs & net revenues.		
Change fleet behavior (incidental catch increases) w Alt 1	Potential to increase incidental groundfish catch compared with Alt 1 in AM 80 sector. May lead to increase in gross revenues, processing costs & net revenues for some participants (e.g. in AM 80 sector). Some incidental catch may be less available to other participants (non-AM 80, e.g. longline Greenland turbot) May lead to reduction in net revenues for those participants.		
Easier to meet GRS compared with Alt 1, if GRS still in regulation for 2012	Higher MRAs than Alternative 1 improve flexibility to meet GRS. Less than Alternative 3 and 4. Potential to reduce costs of meeting GRS.	Higher MRAs make this alternative most flexible for staying within GRS. Potential to reduce costs of meeting GRS.	Higher MRAs than Alternative 1 improve flexibility to meet GRS. Less than Alternative 3 and 2. Potential to reduce costs of meeting GRS.
Change to monitor and enforcement compared w Alt 1.	Improved monitoring and enforcement of MRAs (over Alt 1) because of management measures create more accurate MRA accounting. Potential for more efficient use of enforcement resources for assessing compliance issues, other than Kamchatka flounder MRAs.		
Change in Management complexity	PSC management improved by adding Kamchatka flounder to Greenland turbot, sablefish & arrowtooth complex at 679.21. Potential for reduced management errors of closing Kamchatka flounder before TAC reached, and converse with arrowtooth flounder. More likely for Amendment 80 sector catches to stay within ACLs. Increased benefits to sector from avoidance of potential need to introduce accountability measures under NS1 if ACL exceeded.		
Use of PSC	Potential allocation of more PSC to arrowtooth & Kamchatka flounder. Could impact other users and redistribute some benefits.		

Under Alternatives 2 and 3, and the preferred Alternative 4, trawl sectors targeting BSAI arrowtooth flounder could retain a higher percentage of the incidentally caught groundfish, when the latter are closed to directed fishing. Increasing the MRAs could be a factor in a decision to participate in the arrowtooth flounder fishery. The economic characteristics of the trawl catcher/processor and catcher vessel sectors vary widely. It is possible that some participants will take into consideration the economic value of the incidental catch 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 when closed to directed fishing, must be discarded, regardless of the value of the species. This is, of course, precisely the purpose and intent of "closing" directed fishing and strictly controlling incidental catch.

Under Alternatives 2 3, and 4, high valued 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 or Kamchatka flounder. These alternatives also provide a strong economic incentive to harvest these otherwise unavailable high valued species, up to their MRA amounts (i.e., covert targeting species "closed" to directed fishing). This has proven to include the practice of "topping off," by targeting the MRA species directly, until MRA levels are obtained. In the past, discards of these high valued species had little consequence on the vessel, but with the implementation of GRS, these discards count against the vessel's GRS and may have imposed some additional cost in avoidance of fishing time or locations with high amounts of groundfish required by the operator to eventually discard. However, as noted earlier, the Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and considered an analysis supporting a regulatory amendment to revise the GRS program at its December 2010 meeting. For the interim period during which an FMP amendment and associated regulations are developed and implemented, the Council requested that NMFS implement an emergency rule to suspend the GRS program for the 2010 and 2011 fishing years. As noted earlier, NMFS published the emergency rule in the Federal Register on December 15, 2010 (75 FR 78172). The Council initiated an analysis of alternatives to address the compliance and enforcement issues identified with the GRS program and recommended a regulatory amendment to remove the GRS program at its February 2011 meeting. To the extent that Amendment 80 vessel operators engage in fishing practices to minimize discards for the purpose of meeting the GRS, the MRA percent as proposed in Alternatives 2, 3 and 4 may make it easier to reduce discards. NMFS has no data or behavioral models to predict if increasing the MRA percent for these groundfish species in the arrowtooth and Kamchatka target fishery will have an economic effect on the participants in the Amendment 80 sector. Even if Amendment 80 sector vessels are able to lower costs or increase revenue from this action, for the reasons already stated (lack of information on these groundfish seafood markets and industry costs), the effect on these retention advantages to a few operations may or may not translate into a change in the value of catch to the sector or increase net national benefits. Anecdotal information from Amendment 80 participants suggest that the action alternatives may increase net revenues to some participants in the fishery through improved opportunities to retain valuable groundfish.

As a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several regulatory revisions need to be made to facilitate management, recordkeeping, reporting, and catch accounting.

Due to difficulties in distinguishing between arrowtooth and Kamchatka flounder when these species are processed, NMFS proposed regulations to mitigate these issues. The proposed rule required that should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. Based on public comments on the proposed rule, NMFS revised footnote 9 to Table 11 in the final rule, after determining that this provision was not necessary. See page 5 and 6 (Section 2.0) of this EA for a complete discussion

of this revision. The alternative described on pages 5 and 6, continues to provide an incentive for industry incentive to avoid exceeding the TAC for either arrowtooth or Kamchatka flounder. Inseason tracking of the catch of these species against the TAC, and industry incentives to keep both arrowtooth flounder and Kamchatka flounder open to directed fishing after May 1, would prevent TAC from being reached under all of the action alternatives (Alternatives 2, 3, and 4). It is possible that the ABC and ACL under Alternative 1 could be exceeded, which would have negative implications for future NS1 accountability measures that may need to be implemented to insure Kamchatka flounder catches remain within the annual ABC. As previously mentioned, the cost of introducing additional accountability measures under NS1 can change potential benefits and costs to industry. Thus Alternatives 2 through 4, could improve future benefits to participants in this fishery, if they reduce the potential for exceeding an ABC compared with the status quo fishery.

Impacts on Non-Arrowtooth Flounder/Kamchatka Flounder Directed Fisheries

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 (Table 3-13). As a result, under Alternatives 2, 3, and 4 increased retention of some MRA species is likely, compared to the status quo alternative. The opportunity to retain a greater amount of incidentally caught groundfish species has the potential to increase the output and value of the processed product. If total incidental catch and production of groundfish from the Amendment 80 sector were to increase compared with Alternative 1, that could result in a change in the amount of product produced for consumers. Increased production to consumers can be associated with a change in consumer surplus, as greater quantities in the market place can (under specific conditions) reduce producer prices.

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, the ability to process the species, and the risk of not achieving the GRS. 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 or the ability to discard low valued fish and not exceed the GRS, all while targeting arrowtooth flounder, provides more discretion for "topping off" on specific species.

Given their high market price, two species in particular that could be a target for a "top off" fishery are sablefish and Greenland turbot. Under Alternative 3, the MRA for sablefish would be 15 percent and for Greenland turbot the MRA would be 35 percent, whereas under Alternative 2 the MRAs for these species are 1 percent. While developing the MRAs for the GOA arrowtooth flounder fishery, the Council was concerned about "topping off" on high valued species; therefore, they set the MRAs for sablefish at 1 percent and aggregated rockfish at 5 percent. Some of those same concerns the Council had in the GOA arrowtooth flounder fishery MRAs, may be applicable in the BSAI arrowtooth flounder fishery MRAs under Alternative 3, given there is likely a strong economic incentive to "top off" for sablefish and Greenland turbot. A possible economic effect of the MRAs applied in Alternative 3 in comparison with Alternative 1, 2 or 4 would be (under Alternative 3) to redistribute some small amount of incidental groundfish catch for these higher valued species to Amendment 80 participants. However, redistribution of certain higher valued species to the Amendment 80 sector may mean that these species could be less available for harvest in directed fisheries for these species. For example, the longline fishery does catch some high valued species such as Greenland turbot. The net National effects of this small redistribution of Geenland turbot to the Amendment 80 sector (if it were to occur) as well as the economic effects to other longline sectors is not impossible to determine due to the small amount of these transfers and lack of economic data on the markets, and costs structure of the industry participants.

Table 3-13 Price per pound of at-sea groundfish for H&G by species from 2004 through 2008 (dollars)

Species	2004	2005	2006	2007	2008
Arrowtooth	0.54	0.72	0.57	0.51	0.61
Pollock	0.45	0.53	0.58	0.67	0.78
Pacific cod	1.09	1.29	1.67	1.86	1.91
Sablefish	3.41	3.75	4.19	4.37	5.16
Flathead sole	0.68	0.87	0.87	0.89	0.79
Rock sole	0.52	0.76	0.72	0.74	0.62
Yellowfin sole	0.47	0.65	0.66	0.69	0.61
Greenland turbot	1.46	1.83	1.74	1.34	1.44
Rockfish	0.75	1.11	1.24	1.00	0.85

Source: NPFMC 2009b Economic SAFE report

Table 3-14 also shows observed trawl hauls by percentile, for each of the incidental catch species during the 2003 through 2009 fishing years. For example, the arrowtooth flounder haul at the 75th percentile, in terms of Greenland turbot, included approximately 23 pounds of this species for each one hundred pounds of arrowtooth flounder. The table also shows the total observed tons of the incidentally caught species, and the number of the hauls in which the incidental catch species was observed. For example, of the 4,079 directed arrowtooth flounder hauls, 1,667 of those hauls had Greenland turbot, which totaled 3,202 mt. The table also includes average bycatch rate for each incidental catch species, determined by dividing observed metric tons of each of the incidental catch species by observed metric tons of arrowtooth flounder. As seen by the average incidental calculations, the catch rates are well below the recommended MRAs for Alternatives 2, 3 and 4. The only exceptions are sablefish and Greenland turbot under Alternative 2 (without suboption 2.1 or 2.2), which has an MRA of one percent for both species. For sablefish, the average incidental catch rate is slightly greater than one percent. As for Greenland turbot, the average incidental catch rate is greater than the one percent MRA under this alternative, which could result in regulatory discards of this species, thus contributing to a lower retention rate. If Greenland turbot continues to be a valuable species compared with other species that would be retained under the Alternative 2 rate of 1 percent (for Greenland turbot), and substantial amounts of Greenland turbot continued to be routinely discarded, the value of the forgone retention could be significant for some vessels. In that event the rate of 7 percent for Greenland turbot from Alternative 4 or 35 percent from Alternative 3 were selected, each of these alternatives are likely to produce higher net benefits for operations participating in the arrowtooth flounder fishery.

The interrelationship between the Aleutian Islands (AI) arrowtooth flounder fishery and Greenland turbot could create a potential management concern under Alternative 3. Under this alternative, the MRA for Greenland turbot would be 35 percent. In previous years, participants in the Amendment 80 sector have targeted AI Greenland turbot early in the year, before switching to AI arrowtooth flounder after the Greenland turbot fishery closed (typically, a two or three week interval). In previous years, vessels would move to AI arrowtooth flounder grounds that tended to have a lower incidental catch of Greenland turbot since they would have had to discard their entire incidental Greenland turbot catch. However, if this practice of targeting on Greenland turbot was to occur in the future, with an MRA of 35 percent under Alternative 3, vessels could be less inclined to move to cleaner fishing grounds upon the closure of directed Greenland turbot fishing, given the relative value of Greenland turbot as compared to arrowtooth flounder. This could result in a substantially higher incidental catch of AI Greenland turbot. In this scenario, it is likely NMFS would place AI Greenland turbot on PSC status (retention of this species would be prohibited) in order to prevent the species from exceeding the overfishing limit (OFL).

While this change to the timing of when Greenland turbot would be placed on PSC status is hypothetical, this species is utilized in the longline fishery, where a directed fishery on Greenland turbot may occur concurrently with the Amendment 80 Arrowtooth flounder fishery. NMFS does not have industry data to estimate the economic effects of a shift in date that Greenland turbot is closed to all retention two the Amendment 80 sector and longline sectors. The economic effects could be non-positive for some longline operations, but data are not available to project the change in the costs or revenue to either sector or at the level of net National benefit from these alternative MRAs.

In June 2010, the Council, concerned the MRA for Greenland turbot under Alternative 3 could result in a top off fishery included a suboption that would set the MRA at 15 percent. At the same time, the Council also recognized that an MRA of 1 percent for Greenland turbot under Alternative 2 could result in unnecessarily high regulatory discards, so the Council included a suboption under Alternative 2 that would set the MRA at 15 percent. As shown in Table 3-14, the average incidental catch rate for Greenland turbot during the 2003 to 2009 period was approximately 8 percent. Based on this data, a 7 percent MRA for Greenland turbot would dampen the potential for a top off fishery under Alternative 3, while at the same time reduce unnecessary regulatory discards that is likely under Alternative 2.

Although not resolving the issue of topping off, management will address any increase in the incidental catch in the BSAI arrowtooth flounder fishery, by increasing the amount reserved from the directed fishing allowance for these species. In cases where catch of a species has reached the TAC or is expected to reach the TAC, management will place that species on prohibited status and all retention of that species will be prohibited to remove any incentive for targeting.

The Alaska Region's (NMFS) Inseason Management Branch determines the amount of an individual TAC necessary to apply as incidental catch in other target fisheries. As described in Section 3.2.3.3.2, of the BSAI FMP, the ACL is equivalent to ABC. TAC is set either at ABC or below, so managing the fisheries to not exceed TAC is equivalent, or more conservative in some cases, than managing to the ACL. The target fishery is usually closed before reaching the TAC, allowing for bycatch in other fisheries up to the amount of TAC for a species. A directed fishery closure limits retention of a species to a portion of other species TACs open to directed fishing. That portion is called the maximum retainable amount (MRA). The MRA is expressed as a percentage of an alternate target fishery. The percentage relates to the expected rate of catch and may be used as a tool to harvest a species that is low in volume but high in value. All retention is prohibited if the total TAC is caught before the end of the year. Prohibiting retention removes any incentive to increase incidental catch as a portion of other fisheries. If the ABC is taken and the trajectory of catch indicates the OFL may be approached, additional closures are imposed. To prevent overfishing, specific fisheries identified by gear and area that incur the greatest incidental catch are closed. Closures expand to other fisheries if the rate of take is not sufficiently slowed.

A fishery may also be closed if a PSC limit is reached. Except for scientific purposes, Chinook salmon bycatch management, or the prohibited species donations program, prohibited species cannot be retained in the groundfish fisheries. In the rare occurrence of a TAC being exceeded, the Inseason Management Branch will evaluate the conditions that resulted in the overage and determine appropriate management actions that may be needed to prevent a reoccurrence. For example, Inseason Management may set the following year's directed fishing allowance lower and the incidental catch allowance higher to provide for an earlier closure of the directed fishery, leaving more fish available outside of the directed fishery before the TAC is reached.

As noted in the background section of this proposed action, most of the incidentally caught species in directed fisheries (with the exception of arrowtooth flounder), 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.

Table 3-14 Proportion of incidental catch of secondary species in observed trawl hauls targeting arrowtooth flounder in the BSAI, 2003 through 2009

Species	Hauls with species	Tons	Average bycatch rate	25th Percentile	50th Percentile	75th Percentile	90th Percentile	95th Percentile	100th Percentile
Arrowtooth Flounder	4,079	42,048	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Atka Mackerel	419	193	0.46	0.0080	0.0174	0.0803	0.2759	0.4489	0.9982
Flathead Sole	3,119	1,708	4.06	0.0213	0.0662	0.1736	0.3654	0.5387	0.9922
Northern Rockfish	107	12	0.03	0.0048	0.0121	0.0414	0.1019	0.1743	0.3756
Other Rockfish	713	357	0.85	0.0098	0.0549	0.1990	0.4046	0.4888	0.2144
Other Species	5,532	1,749	4.16	0.0090	0.0312	0.0973	0.2022	0.3137	0.5693
Pacific Cod	2,316	2,077	4.94	0.0360	0.1401	0.3880	0.6611	0.8100	0.9941
Pacific Ocean Perch	1,576	360	0.86	0.0048	0.0110	0.0294	0.0699	0.1382	0.8620
Pollock	3,229	3,435	8.17	0.0278	0.1101	0.3117	0.5976	0.7517	0.9952
Sablefish	1,112	495	1.18	0.0124	0.0318	0.0970	0.2657	0.4552	0.9868
Shortraker/Rougheye Rockfish	643	86	0.20	0.0051	0.0083	0.0169	0.0404	0.0879	0.3598
Greenland Turbot	1,667	3,202	7.61	0.0337	0.0849	0.2279	0.4784	0.7131	0.9979
Rock Sole	1,972	854	2.03	0.0132	0.0451	0.1213	0.2343	0.3227	0.9140
Other Flatfish	3,726	2,413	5.74	0.0144	0.0584	0.1754	0.3501	0.4591	0.3267
Yellowfin Sole	642	195	0.46	0.0107	0.0342	0.0927	0.2074	0.2733	0.6945
Alaska Plaice	258	51	0.12	0.0072	0.0156	0.0335	0.1280	0.2885	0.6735
Squid	1,730	179	0.42	0.0027	0.0065	0.0147	0.0320	0.0513	0.5022

Source: NORPAC observer data

Note: The 100th percentile denotes the tow with the highest ratio of incidental species catch to arrowtooth flounder catch. For example, for Pacific cod, the 100th percentile was 0.9928. That tow had .9928 pounds of Pacific cod for every 1 pound of arrowtooth flounder, 1:1 ratio.

Preferred Alternative 4

The Council took final action in October 2010, and selected Alternative 2 and two suboptions 2.3 and 2.3 (in this document the preferred Alternative is referred to as Alternative 4). The Council's preferred Alternative 4 would set the MRAs for groundfish using arrowtooth flounder as a basis species at the same level as when using Pacific cod as a basis species, with two modifications by suboptions 2.2 and 2.3. The two modifications would set the MRA for Greenland turbot at 7 percent and the MRA for the other species group, which includes skates, sharks, sculpins, and octopus in aggregate, at 3 percent. Alternative 4 would increase the arrowtooth flounder directed fishery MRAs from 0 percent to 20 percent for pollock, Pacific cod, Atka mackerel, Alaska plaice, yellowfin sole, other flatfish, rock sole, flathead sole, and squid; from 0 percent to 2 percent for shortraker and rougheye rockfish (combined); from 0 percent to 5 percent for aggregated rockfish; and from 0 percent to 3 percent for the other species group (skates, sharks, sculpins, and octopus in the aggregate). The Council recommended that the MRAs for Greenland turbot and aggregated other species be based on the approximate average incidental catch observed in the arrowtooth flounder fishery between 2003 and 2009. These recommendations were based on the Council's desire to minimize impacts on the directed fishery for Greenland turbot and conserve the stocks that comprise the aggregated other species group while allowing for some incidental catch of these species to be retained when closed to directed fishing. These amounts are within the range of MRAs analyzed in this EA/RIR/IRFA.

Two species have been specified in the arrowtooth flounder group in the BSAI, arrowtooth flounder (*Atheresthes stomias*) and Kamchatka flounder (*Atheresthes evermanni*). At its December 2010 meeting, the Council recommended that separate OFLs, ABCs, and TACs be established for arrowtooth flounder and Kamchatka flounder in order to protect the stock of Kamchatka flounder, which has been harvested disproportionately (relative to biomass estimates) in the arrowtooth flounder fishery. For PSC management purposes and fishing seasons, catches of arrowtooth flounder and Kamchatka flounder would continue to be managed as an arrowtooth flounder group. The final rule implements separate MRA accounting for arrowtooth flounder and Kamchatka flounder, while applying the same MRAs for groundfish to be retained when arrowtooth or Kamchatka flounder are both open to directed fishing or

both closed to directed fishing. This is an amendment from the proposed rule. In the proposed rule, if arrowtooth and Kamchatka flounders were to be closed to directed fishing, the MRA of these species in another targeted groundfish fishery was to be based on the retention of arrowtooth flounder and Kamchatka flounder as a group. Footnote 9 was proposed to be added to Table 11 to clarify that when arrowtooth flounder and Kamchatka flounder are closed to directed fishing and caught in other directed groundfish fisheries, the retained catch for the purpose of MRA compliance must be calculated as the aggregate retained catch of both species. This provision was determined to be unnecessary for the final rule, based on additional information from NOAA Office for Law Enforcement and public comment on the proposed rule (see 2.1.4 pg 5).

PSC allocation to the Greenland turbot/arrowtooth flounder/sablefish fisheries are not revised from the proposed rule and for this final rule. The preferred alternative described on pages 5 and 6 continues to provide an incentive for industry to avoid exceeding the TAC for either arrowtooth or Kamchatka flounder. Inseason tracking of the catch of these species against the TAC, and industry incentives to keep both arrowtooth flounder and Kamchatka flounder open to directed fishing after May 1, would prevent TAC from being reached under all of the action alternatives (Alternatives 2, 3, and 4).

Halibut PSC Effects

Management of BSAI trawl groundfish fisheries has been influenced by a number of factors, including initial allocations or apportionment of target species, and availability of halibut and crab PSC. For example, prior to the implementation of Amendment 80, target fisheries for the non-pelagic trawl fisheries with low PSC allowances for species such as halibut were rarely opened for directed trawl fishing. Once Amendment 80 was implemented, an amount of halibut PSC limit was allocated to Amendment 80 cooperatives. Amendment 80 cooperatives may internally distribute halibut PSC limits by season and operation. For the Amendment 80 limited access vessels, NMFS apportions halibut PSC limits by season and target fishery category. This flexibility to internally manage halibut PSC limits has allowed vessels in an Amendment 80 cooperative to target on some flatfish species such as arrowtooth and Kamchatka flounder. In 2012, because all Amendment 80 sector vessels participate in an Amendment 80 cooperative, any vessel in the Amendment 80 sector could choose to target on these two flatfish species. Amendment 80 fishing operations that choose to shift to arrowtooth flounder or Kamchatcka flounder targets, are likely to make that choice because they perceive they will yield larger economic returns than if they continued to target on other species. With the Amendment 80 cooperatives managing their own halibut PSC limits, none of the action alternatives appear likely to change the amount of halibut available to other sectors and fisheries from this action. Thus, no change in the economic effects to halibut directed fisheries are anticipated from any of the alternatives.

Enforcement and Management Effects

For the catcher/processor 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 catcher vessel 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. The current practice is that when shoreside processors are concerned that a delivery may contain excessive amounts (exceeding the MRA) of groundfish, they notify in a timely manner the NOAA Office for Law Enforcement (OLE). This relieves the unlawful possession burden on the processor and provides an incentive for the processor to alert enforcement to a possible administrative violation.

In 2010 the TAC for the arrowtooth flounder species group was 75,000 mt in the aggregate. Based on observer data the partial catch of 32,779 mt consisted of 13,682 mt (42 percent) arrowtooth flounder, 18,454 mt (56 percent) Kamchatka flounder, and 643 mt (2 percent) unidentified arrowtooth flounder

species group. In 2010 over 90 percent of the catch of Kamchatka flounder came from a single area (Area 541) in the Aleutian Islands. For 2011 in the BSAI the TAC for arrowtooth flounder was set at 25,900 mt (well below the ABC of 153,000 mt) and the TAC for Kamchatka flounder was set at 17,700 mt (equal to the ABC of 17,700 mt) for a total of 43,600 mt (76 FR 11111, March 1, 2011), down from the 2010 total of 75,000 mt. Setting the TAC for Kamchatka flounder at the ABC level was deliberate as the catch of Kamchatka flounder was seen as a factor that could constrain the arrowtooth flounder fishery as a whole. The decrease in the total TACs for the arrowtooth flounder species group in 2011 was due to increases in the 2011 available TACs for more commercially valuable species such as pollock and Pacific cod.

As discussed in Section 3.2.6, Description of the BSAI Arrowtooth Flounder Fishery, the fishery has been rapidly developing in recent years with increases in harvest and utilization of the resource along with changes in fishing practices such as areas fished and the targeting of Kamchatka flounder. With the establishment of a specific OFL, ABC, and TAC for Kamchatka flounder beginning in 2011, specific measures for the management of Kamchatka flounder and further changes in fishing practices can reasonably be expected to occur. Based solely upon the catches and targeting of Kamchatka flounder in 2010, a closure to directed fishing for Kamchatka flounder could be expected to occur. Catcher/processors using trawl gear participating in the arrowtooth and Kamchatka flounder fisheries in the BSAI, which account for the great majority of the catch, have expressed an interest to NMFS in taking voluntary measures to change fishing practices in order to prevent exceeding the ABC for Kamchatka flounder.

It is important to note that the regulatory amendments for Kamchatka flounder as well as managing for the compliance and enforcement of the MRA regulations need to be implemented under any of the alternatives being considered. These issues are discussed here to illustrate some of the dynamics of a rapidly developing fishery and the management challenges associated with separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder.

Under Alternatives 2, 3, or 4 the NOAA OLE does not anticipate any significant increase in the amount of MRA overages provided that in any given area in the BSAI, the two species, arrowtooth and Kamchatka flounder, can be managed under the same MRA regulations concurrently. For product quality reasons, there are time limitations on processing arrowtooth flounder, due to diminishing quality of the raw product. It is believed these time limitations, combined with the incentive not to exceed the MRA due to the GRS, would limit the profitability and desirability of topping off activities.

With respect to revising the MRAs for groundfish using the arrowtooth flounder or Kamchatka as basis species, the NOAA OLE does not foresee any significant negative impact upon their resources by this action, and this action may reduce the number of administrative violations requiring enforcement response. Reducing administrative violations under any of the three action alternatives could allow NOAA OLE resources to be utilized more efficiently, to assess other potential compliance issues,

Safety

The action alternatives are not expected to change fishing practices in a manner that would adversely impact safety in the arrowtooth flounder fishery. Vessels directly fishing for arrowtooth flounder would have more options for fishing locations under the action alternatives rather than restricting fishing to locations where the least amount of bycatch possible would be encountered under the status quo. The additional locations for fishing may provide a margin of safety.

3.4 Effects on Net Benefit to the Nation

Net benefits to the Nation would likely increase under Alternatives 2, 3, or the Council's Preferred Alternative 4 relative to Alternative 1, under the assumption that fewer regulatory discards means greater utilization of fishery resources, less waste, and increased efficiency. As noted elsewhere, there may be a potential downside predominantly under Alternative 3, however, if targeting of species with limited TACs, and/or species on bycatch status, come under increased pressure (e.g., "topping off") due to higher MRAs in the arrowtooth flounder fishery. Furthermore, if the changes in arrowtooth flounder MRAs result in significantly accelerated attainment of PSC allowances, TAC and/or Amendment 80 allocation amounts of more valuable groundfish may be foregone (e.g., for lack of halibut PSC mortality). These outcomes could offset any benefit gains, leaving the "net" impact to the Nation uncertain.

The difference in net benefits to the Nation between Alternatives 2, 3 and the Council's Preferred Alternative 4, are indeterminate, because data are not available to assess the probable behavior of the fleet in response to small variations in MRAs. Lack of market information and industry data on the sectors most interested in this action are impediments to developing the types of economic models necessary to discern the net benefits to the firms, sectors or Nation, from small shifts in the opportunity to retain catch of groundfish represented by these alternatives. Members of the Amendment 80 sector have indicated that higher MRAs consistent with Alternative 3 may generate more options for determine when it is efficient for them to retain groundfish species in comparison with Alternative 2 and Alternative 4, due to lower MRAs in Alternative 2 (ignoring the issues outlined in the paragraph immediately above).

Management and enforcement costs may also vary according to the complexity of enforcing MRAs. The final rule allows for arrowtooth flounder and Kamchatka flounder retained catch to be based on information produced by observers on the proportion of each species accounted for from observer sampling. This method may reduce the cost of enforcing MRAs, compared with conducting case counts or evaluating electronic log data.
Under Alternative 1, the current management of BSAI arrowtooth flounder would continue, thus, the net benefit to the Nation would likely remain close to current levels.

The potential for an increase in net benefit to the Nation under Alternatives 2, 3, or 4 is largely attributable to increased retention of (unavoidable) incidentally caught BSAI groundfish species that are not fully utilized within the TAC, up to the new, higher MRAs. These gains are called into question if the higher retained incidental catches are not of "unavoidable" interceptions, but of direct covert targeting. The increased retention of incidental catch of not fully utilized species in the arrowtooth flounder directed fishery may increase the net value to the trawl sectors, thus, increasing producer surplus, all else equal.

4.0 ENVIRONMENTAL ASSESSMENT

4.1 Purpose and Need

The purpose of the proposed action is to provide the opportunity to the arrowtooth flounder trawl fishing industry to retain more incidentally caught groundfish, thereby reducing discards. In its original problem statement the Council also wished for the ability to retain more groundfish in the arrowtooth flounder fishery in order to benefit the Amendment 80 fleet in meeting the groundfish retention standard (GRS). The purpose of the GRS is to create a standard for retention of groundfish for the BSAI groundfish fishery, by decreasing economic discards and increasing catch utilization. The GRS specifically addresses National Standard 9 of the Magnuson-Stevens Act, to reduce discards to the extent practicable.

4.2 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 is incorporated by reference. In addition to the factors discussed in the groundfish harvest specifications EIS (NMFS 2007), 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.

4.2.1 Bering Sea and Aleutian Islands Environment

The action area includes the entire BSAI management area. The documents listed below contain extensive information about the fishery management areas, fisheries, marine resources, ecosystem, social, and economic elements of the BSAI 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 BSAI 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.alaskafisheries.noaa.gov/index/analyses/analyses.asp. Any additional information beyond what is included in the following references is included here.

Alaska Groundfish Harvest Specifications Final Environmental Impact Statement (NMFS 2007). 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 GOA and the BSAI management areas. The EIS examines alternative harvest strategies that comply with federal regulations, the BSAI FMP, and the Magnuson-Stevens Act. These strategies are applied to the best available scientific information to derive the TAC estimates for the groundfish fisheries. The EIS, which is incorporated by reference for this action, 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 BSAI groundfish fisheries.

Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the Bering Sea and Aleutian Islands (NPFMC 2010). Annual SAFE reports contain a review of the latest scientific analyses and estimates of each BSAI 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 BSAI 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.

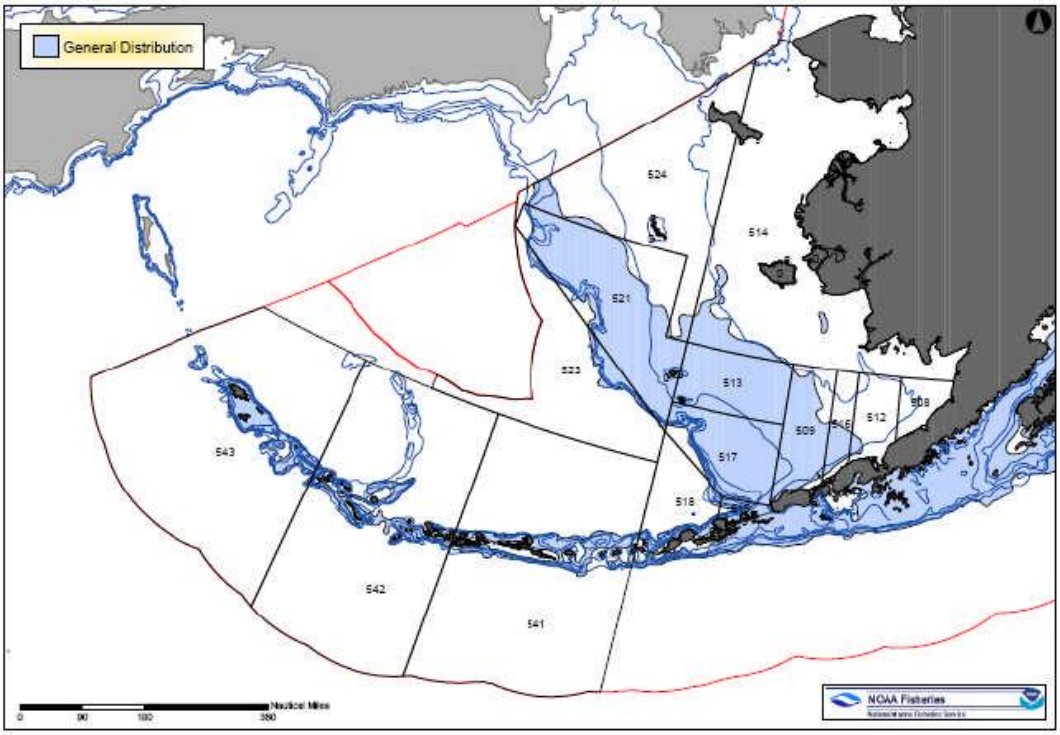
Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement (Final PSEIS; NMFS 2004). This Final PSEIS was prepared to evaluate the fishery management policies embedded in the BSAI and GOA groundfish FMPs against policy-level alternatives. NMFS issued a Record of Decision 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.alaskafisheries.noaa.gov/sustainablefisheries/seis/default.htm.

4.2.2 Arrowtooth and Kamchatka Flounder Fisheries

Arrowtooth flounder (*Atheresthes stomias*) are found throughout the BSAI management area; however their abundance in the Aleutian Islands region is lower than in the eastern Bering Sea. The resource in the eastern Bering Sea and the Aleutians are managed as a single stock although the stock structure has not been studied.

The arrowtooth flounder is a relatively large flatfish that occupies continental shelf waters almost exclusively until age 4 but at older ages occupies both shelf and slope waters. Arrowtooth flounder begin to recruit to the continental slope at about age 4. Based on age data from the 1982 United States-Japan cooperative survey, recruitment to the slope gradually increases at older ages and reaches a maximum at age 9. However, greater than 50 percent of age groups 9 and older continue to occupy continental shelf waters. The low proportion of the overall biomass on the slope during the 1988 and 1991 surveys, relative to that of earlier surveys, indicates that the proportion of the population occupying slope waters may vary considerably from year to year depending on the age structure of the population. The distribution of arrowtooth flounder is shown in Figure 4-1.

Figure 4-1 Essential fish habitat distribution for the late juvenile and adult arrowtooth flounder



Source: BSAI Groundfish FMP (NPFMC 2009b)

Two species of *Atheresthes* occur in the Bering Sea. Arrowtooth flounder and Kamchatka flounder (*A. evermanni*) are very similar in appearance and are not always distinguished in the commercial catches. Until about 1992, these species were also not consistently separated in NMFS trawl survey catches and were combined in the assessment until their identification by observers in commercial trawl catches could be made with certainty, and to maintain the comparability commercial trawl catches and the NMFS trawl surveys.

Kamchatka flounder is also a relatively large flatfish which is distributed from Northern Japan through the Sea of Okhotsk to the Western Bering Sea north to Anadyr Gulf (Wilimovsky et al. 1967) and east to

the eastern Bering Sea shelf and south of the Alaska Peninsula (there is also a catch record from California). In U.S. waters they are found in commercially fished concentrations in the Aleutian Islands where they generally decrease in abundance from west to east (Zimmerman and Goddard 1996). They are also present in Bering Sea slope waters but are absent in survey catches east of Chirikof Island.

At the December 2010 meeting, the Council recommended that separate OFLs, ABCs, and TACs be established for arrowtooth flounder and Kamchatka flounder in order to protect the stock of Kamchatka flounder. As noted in the November 2010 Plan Team minutes, Kamchatka flounder comprised about 7 percent of the total biomass for the complex. However, the catch for this species group (arrowtooth and Kamchatka flounder combined) has increased from about 12,000 mt in 2007 to 39,355 mt in 2010. Most of the 2010 BSAI catch for the species group (80 percent) is in area 541 where Kamchatka flounder make up 73 percent of the catch an increase from the 30 percent of the arrowtooth flounder catch in area 541 in 2009. At the December 2010, the Council recommended a BSAI area wide TAC for Kamchatka flounder of 17,700 mt. Given the amount of fishing effort targeting the arrowtooth flounder species group in 2010 in area 541 of the Aleutian Islands, NMFS inseason managers established in 2011 a directed fishing allowance for Kamchatka flounder, equal to the TAC minus anticipated incidental catch needs in other groundfish targets (including arrowtooth flounder).

Arrowtooth flounder were managed with Greenland turbot as a species complex until 1985 because of similarities in their life history characteristics, distribution, and exploitation. Greenland turbot were the target species of the fisheries whereas arrowtooth flounder were caught as bycatch. Starting in 1986, management has been by individual species due to considerable differences in stock condition.

Catch records of arrowtooth flounder and Greenland turbot were combined during the 1960s. The fisheries for Greenland turbot intensified during the 1970s, and the bycatch of arrowtooth flounder is assumed to have also increased. From 1974 through 1976, total catches of arrowtooth flounder reached peak levels ranging from 19,000 mt to 25,000 mt. Catches decreased after implementation of the Magnuson-Stevens Act and the resource has remained lightly exploited with catches averaging 12,831 mt from 1977 through 2008. This decline resulted from catch restrictions placed on the fishery for Greenland turbot and phasing out of the foreign fishery in the U.S. EEZ. Table 4-1 lists the annual ABC, TAC, total catch, and disposition of the arrowtooth flounder species group (both arrowtooth and Kamchatka flounder combined) catch from 2003 through 2009. In 2010 the TAC for the arrowtooth flounder species group was set at 75,000 mt, 39,416 mt were caught, of which 81 percent (32,066 mt) were retained. Beginning in 2011 separate OFLs, ABCs, and TACs were established for arrowtooth and Kamchatka flounder. For 2011 the TAC for arrowtooth flounder was set at 25,900 mt (ABC=153,000 mt) and for Kamchatka flounder at 17,700 mt (ABC=17,700 mt) for a combined total of 53,600 mt down from a combined total of 75,000 mt in 2010. This reduction was in order primarily to increase the opportunity to harvest pollock and Pacific cod while maintaining the 2 million mt optimum yield cap in the BSAI.

Table 4-1 ABC, TAC, total catch, retained and discarded catch for BSAI arrowtooth flounder and Kamchatka flounder from 2003 through 2009

Year	Annual ABC (mt)	Annual TAC (mt)	Discarded (mt)	Retained (mt)	Percent retained	Total catch (mt)
2003	112,000	12,000	8,597	4,698	35%	13,294
2004	115,000	12,000	14,305	3,846	21%	18,151
2005	108,000	12,000	6,952	7,291	51%	14,243
2006	136,000	13,000	7,283	6,103	46%	13,386
2007	158,000	20,000	6,786	5,130	43%	11,916
2008	244,000	75,000	5,867	16,017	73%	21,884
2009	156,000	75,000	6,140	24,227	80%	30,367

In 2009, totaled catch of the arrowtooth flounder species group was 30,367 mt, of which approximately 93 percent was taken by trawl gear and 7 percent by fixed gear (Table 4-2).

Table 4-2 2009 BSAI arrowtooth flounder catch by gear type and processing component

Gear type	Catcher Processors		Catcher vessels		Total catch (mt)
	Total catch	Percent of total	Total catch	Percent of total	
Non-pelagic trawl	26,142	98.87	299	1.13	26,440
Pelagic trawl	728	43.62	940	56.38	1,668
Trawl total	26,869	95.59	1,239	4.41	28,108
Fixed gear	2,156	95.47	102	4.53	2,258
Grand total	29,025	95.58	1,342	4.42	30,367

Source: NMFS Catch Accounting

With the advent of Amendment 80 fishing practices in 2008, the percentage of arrowtooth flounder retained catch has increased from 35 percent in 2003 to 80 percent in 2009 (Table 4-1). Large amounts of discards of arrowtooth flounder still occur in the Pacific cod fishery and the various flatfish fisheries. In 2009, of the 30,367 mt catch of arrowtooth flounder, 19,924 mt were attributed to a directed fishery targeting arrowtooth flounder (Table 4-3). Of the 19,924 mt, 99 percent was retained and overall 80 percent of the total catch (including arrowtooth flounder and associated incidental catch) was retained. An increasing trend of retention is expected in the near future due to the recent change in fishing practices.

Table 4-3 2009 catch of groundfish attributed to the arrowtooth flounder fishery[5]

Groundfish	Discarded (mt)	Retained (mt)	Total (mt)	Percent retained
Alaska Plaice	0	29	29	99.34
Arrowtooth Flounder	795	19,129	19924	96.01
Atka Mackerel	1	4	5	82.80
Flathead Sole	4	244	248	98.55
Greenland Turbot	285	1,159	1443	80.27
Northern Rockfish	1	0	1	39.18
Other Flatfish	11	666	677	98.39
Other Rockfish	7	75	82	91.52
Other Species	218	54	272	19.73
Pacific Cod	5	198	203	97.51
Pacific Ocean Perch	109	337	446	75.55
Pollock	56	397	453	87.65
Rock Sole	2	41	43	95.84
Sablefish	3	116	119	97.18
Shortraker/Rougheye Rockfish	21	52	72	71.37
Squid	96	0	96	0.11
Yellowfin Sole	0	2	2	95.41

Source: NMFS Catch Accounting

4.2.3 Prohibited Species

Prohibited species include salmon, steelhead trout, herring, halibut, and king and Tanner crab. The effect of the arrowtooth flounder and Kamchatka flounder fisheries on prohibited species is limited primarily by the TACs established for arrowtooth flounder, by the amount of the halibut PSC allowed in the trawl fisheries, and by seasonal and year round area closures to the use of trawl gear. In the BSAI, PSC limits are set by regulation at 50 CFR 679.21(e)(3). Area closures and PSC apportionments have been established for halibut, salmon, crab, and herring on a seasonal and/or annual basis, which limits the impact on the prohibited species stocks.

Table 4-4 lists the annual incidental catch of prohibited species in the arrowtooth flounder fishery in the BSAI from 2003 through 2009. During this period the numbers of crab and salmon and the amount of herring and halibut varied greatly. No increasing or decreasing trend in PSC (with the increase in arrowtooth flounder catch) was observed.

[5] The MRA regulations identify basis and incidental species retention on different timeframes and species compositions than the Catch Accounting System target calculations; therefore, Table 4-3 does 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 amount of annual retained and discarded species within the arrowtooth flounder target fishery, therefore, does not reflect the MRA proportions, but rather multiple target species caught together in the trawl groundfish fishery.

Table 4-4 Incidental catch of prohibited species in the arrowtooth flounder fishery in the BSAI, 2003 through 2009

Year	Bairdi Tanner Crab #	Blue King Crab #	Chinook Salmon #	Golden (Brown) King Crab #	Halibut (mt)	Herring (kg)	Non-Chinook Salmon #	Opilio Tanner (Snow) Crab #	Red King Crab #
2003	6,012	0	1,597	467	53	87	2	413	0
2004	3,237	0	1,099	683	96	106	0	984	58
2005	10,468	0	1,920	259	200	39	135	776	0
2006	25,418	0	259	733	124	146	5,369	6,110	801
2007	21,913	0	108	556	18	390	0	4,844	0
2008	34,058	102	0	3,338	127	2,019	142	7,016	21
2009	2,673	85	0	7,971	223	55	135	2,686	137
Average	14,826	27	712	2,001	120	406	826	3,261	145

Source: NMFS Catch Accounting

4.3 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 EIS must be prepared.

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, seabirds, habitat, or the ecosystem not previously considered in the groundfish harvest specifications EIS (NMFS 2007). Therefore, this analysis will focus on the environmental components that could potentially be affected by this action; stocks of targeted groundfish, prohibited species, effects on benthic and essential fish habitat, and Steller sea lions. The effect of the alternatives on social and economic conditions is analyzed in Chapter 3.

Under each of these alternatives discussed below as a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several regulatory revisions need to be made to facilitate recordkeeping, reporting, and catch accounting. Footnotes 2 and 9 to Table 11 would be revised to include Kamchatka flounder. In the PSC categories § 679.21(e)(3)(iv)(C) would be revised to include Kamchatka flounder. In the season start dates §679.23(e)(1) would be revised to include Kamchatka flounder with a start date of May 1. Table 3 PRR for groundfish species and conversion rates for Pacific halibut would be revised to eliminate PRRs for individual species of flounders, sole, and turbot and establish a single PRR for all flatfish (except halibut) in order to include Kamchatka flounder. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) would be made to explain how NMFS will determine whether to allocate a portion of

any new groundfish TAC category to the CDQ Program in the annual harvest specifications. Finally, in a separate action, currently being prepared by NMFS, Table 2a Groundfish Species Codes will be revised to include Kamchatka flounder with a species code number of 117. The regulatory items discussed above would have no effects on the environment and therefore do not require further NEPA analysis.

4.3.1 Effects on Target Species (arrowtooth and Kamchatka flounder)

Alternative 1, the status quo or no action alternative, would not revise the MRAs for groundfish species in the arrowtooth flounder fishery, despite the fact that Kamchatka flounder has been assigned its own OFL, ABC and TAC in 2012. The status quo would not have measurable effects on the target species because observer data in the Amendment 80 sector (the only sector expressing interest in a these two fisheries) will be used to derive inseason management on these two flatfish species. Under Alternatives 2 through 4, the implementation of the additional management measures to establish similar MRAs for arrowtooth flounder and Kamchatka flounder as well as including Kamchatka flounder with Greenland turbot, arrowtooth flounder, and sablefish, by revising § 679.21(e)(3)(iv)(C), for purposes of PSC management may reduce the potential for exceeding the Kamchatka flounder TAC in comparison with the status quo. As the TAC for any groundfish species is approached, a series of management actions are available to retard catch of these two target flatfish species. There is also little or no potential of exceeding the TAC under any of the three action alternatives, because inseason staff can apply a range of tools available to limit retention of incidentally caught groundfish, prohibit retention and close fisheries to avoid exceeding a TAC (see 3.2.4.3 of the BSAI FMP for more information on these management actions). The effects to target species of the Alternatives 2, 3, and 4, are anticipated to fall within the scope of these groundfish species in the in the groundfish harvest specifications EIS (NMFS 2007).

4.3.2 Effects on Groundfish Stocks

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

Under Alternatives 2, 3, and 4 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. Generally, the opportunity for increasing retention would not result in an increased catch of these incidental catch species in the arrowtooth flounder fishery. Even under Alternative 3 where the Greenland turbot MRA is set at 35% and for Alternative 2, where the suboption for a Greenland turbot MRA could be 15%, the TAC for arrowtooth flounder is frequently fully utilized, and management would likely increase estimates of potential incidental catch and, therefore, reduce the amount of TAC available to the directed fishery. As a matter of routine, NMFS proposes revisions to incidental catch allowances through annual specifications. Considering the range of management tools available in the groundfish BSAI FMP and in regulation, 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. For this reason, the proposed action would have no additional impacts on groundfish stocks beyond those analyzed in the groundfish harvest specifications EIS (NMFS 2007).

As discussed earlier, due to difficulties in distinguishing between arrowtooth and Kamchatka flounder when these species are processed, NMFS included regulations in the proposed rule for this action that, under Alternatives 2 through 4, should either arrowtooth or Kamchatka flounder close to directed fishing then neither arrowtooth nor Kamchatka flounder could be used as basis species for the retention of groundfish in the BSAI. Based on public comments received on the proposed rule, NMFS revised footnote 9 to Table 11 in the final rule, after determining that this provision was not necessary. See section 2.1.4 page 5 of this EA for a complete discussion of this revision.

4.3.3 Effects on Prohibited Species

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 sustainability of prohibited species (NMFS 2007). The effects of the arrowtooth flounder fishery on prohibited species is limited primarily by the TAC established for arrowtooth flounder, by the amount of the halibut PSC allowed in the trawl fisheries, and by seasonal and year round area closures to the use of trawl gear. For these reasons, Alternative 1 would have no impacts on the stocks of prohibited species beyond those analyzed in the groundfish harvest specifications EIS (NMFS 2007).

Under Alternatives 2, 3, and 4 the MRAs for several species of 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 and Kamchatka flounder fisheries. The bycatch amounts of prohibited species would be expected to increase or decrease with an increase or decrease in the amount of arrowtooth flounder harvested. However, even if the amount of arrowtooth flounder harvested in the fishery increased, total removals of prohibited species would continue to be limited by provisions in § 679.21 and would not be expected to increase to levels that may adversely affect the sustainability of PSC species. The proposed action would likely have no additional impacts on stocks of prohibited species in the BSAI beyond those analyzed in the groundfish harvest specifications EIS (NMFS 2007).

As previously noted in the RIR, the interrelationship between the Aleutian Islands (AI) arrowtooth flounder fishery and Greenland turbot could create a potential management concern under Alternative 3. Under this alternative, the MRA for Greenland turbot would be 35 percent. Currently, participants target AI Greenland turbot earlier in the season, before switching to AI arrowtooth flounder after the Greenland turbot fishery closes (typically, a two or three week interval). In years past, vessels would move to AI arrowtooth flounder grounds that tended to have a lower incidental catch of AI Greenland turbot since they would have had to discard their entire incidental AI Greenland turbot catch. However, with an MRA of 35 percent under Alternative 3, vessels could be less inclined to move to cleaner fishing grounds upon the closure of directed Greenland turbot fishing, given the relative value of Greenland turbot compared with arrowtooth flounder. If no additional management measures were introduced to offset this amount of incidental catch, Alternative 3 could result in a higher incidental catch of AI Greenland turbot.

A potential management response for an anticipated increase in incidental catch would be for NMFS to reserve a larger portion of the TAC for incidental catch, shifting TAC away from the directed fishery; insuring that the TAC was not exceeded. In the unlikely event that harvest specifications were not altered to anticipate this shift, NMFS would detect any unanticipated increase in the incidental catch of Greenland turbot, and if warranted, place the species on PSC status (retention of this species would be prohibited) in order to prevent the fishery from exceeding the ABC and overfishing limit (OFL). NMFS inseason management tracks daily catch of Greenland turbot through observer data. Since all of the Amendment 80 vessels are observed at 100%, prohibiting all retention of Greenland turbot earlier or later than the status quo, has no impact on the environment. While a remote possibility exists that the

Greenland turbot TAC could be exceeded under Alternative 3, management controls are sufficient to avoid exceeding the Greenland turbot ABC and OFL. NMFS does not anticipate any change to the environmental effects described in the Environmental Assessment for the 2011/2012 BSAI Groundfish Harvest Specifications for Alternative 3 or the other alternatives because of the effectiveness of these management controls to avoid exceeding of TAC, ABC or OFL.

4.3.4 Effects on Benthic Habitat and Essential Fish Habitat

In general, studies of habitat effects of fishing gear have found that trawls can alter or remove physical and biological structures, as well as other organisms. These changes may affect the ability of fish to use these areas for prey, shelter from predators, spawning substrate, or for other functions. In general, the ecological implications of reported changes to bottom trawling are poorly known, particularly as they relate to sustainable fishery production and healthy ecosystem function.

Under the MRAs set in Alternatives 2, 3, and the Council's Preferred Alternative 4, fishing effort for BSAI arrowtooth flounder and Kamchatka flounder are not possible to predict with the available data. Vessels may fish in the same or different locations and apply the same or different level of effort in comparison with Alternative 1. In the Bering Sea, spatial overlap exists between the areas with high fishing effects and the arrowtooth flounder summer feeding habitat. Because arrowtooth flounder are primarily distributed on the outer shelf during summer, overlap mostly occurs in the southernmost high effort area. The benthic habitat in this area is primarily sand and a sand/mud composite and is utilized by adult and late juvenile arrowtooth flounder during summer months for feeding on epifauna and a diverse diet including crab, fish, and shrimp species. Most of the arrowtooth flounder distribution is located outside of the high effort areas in the summer.

As noted above, it is unknown what effects physical disturbance of the benthos has on the availability of prey for individual arrowtooth and Kamchatka flounder in the high effects area. It is known, however, that the total feeding area utilized by these species on a population level extends well beyond the identified high fishing effort areas. Because the areas with high fishing effects only partially overlap the winter spawning area, do not overlap the early juvenile habitat areas, and only partially overlap the summer feeding distribution, it is unlikely that these affected areas would impair the ability of the arrowtooth or Kamchatka flounder stock to produce maximum stainable yield over the long term. In addition, the habitat conservation measures for the BSAI are not changed by this action (73 FR 43362, July 25, 2008, 75 FR 61642, October 6, 2010, and 71 FR 36694, June 28, 2006). Areas closed to bottom trawling would remain closed under the action alternatives, so no impacts on bottom habitat or essential fish habitat are expected under Alternatives 2, 3, and 4.

4.3.5 Effects on Steller Sea Lions

The western distinct population segment of Steller sea lions (SSLs) and their designated critical habitat occur in the BSAI. The western distinct population segment is listed as endangered 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 BSAI (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. Third, groundfish fisheries are potential competition for the prey species pollock, Pacific cod, and Atka mackerel. Arrowtooth flounder is also a prey species for SSLs. However the current 2010 TAC for arrowtooth flounder of 75,000 mt is well below the ABC of 156,300 mt. Even if the entire TAC of 75,000 mt were taken, it would represent only 6.7 percent of the estimated total biomass (1,120,160 mt) of arrowtooth flounder.

NMFS reinitiated ESA section 7 formal consultation on the Alaska groundfish fisheries in 2006. This reinitiation was based on new information on Steller sea lion biology and on fisheries interactions. NMFS released a draft biological opinion in August 2010 that determined that the AK groundfish fisheries posed the likelihood of jeopardizing the continued existence and adversely modifying critical habitat for the western distinct population segment of Steller sea lions. The issues of concern focused on the Atka mackerel and Pacific cod fisheries in the Aleutian Islands subarea. A reasonable and prudent alternative (RPA) was included in the draft biological opinion that would mitigate the effects of the fisheries to remove the likelihood of jeopardy and adverse modification of critical habitat.
NMFS published an interim final rule to implement the RPA contained in the 2010 BiOp in the Federal Register on December 13, 2010 (75 FR 77535, corrected 75 FR 81921, December 29, 2010).

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. This is because the alternatives do not propose measures that are likely to change the location or timing of the arrowtooth flounder and Kamchatka flounder fisheries or the fishing gear that would be used in a manner that would increase interactions with SSLs. Because Alternative 1 makes no change to the management of the BSAI fisheries, it would have no effects on SSLs or their designated critical habitat regarding prey competition beyond those already considered under previous consultations. Under Alternatives 2, 3, and the Council's preferred Alternative 4, the incidental catch of Atka mackerel, pollock, and Pacific cod could increase or decrease with the higher MRAs and/or topping off behavior. Using a hypothetical example, if the 2010 retained arrowtooth flounder catch of approximately 32,000 mt if vessels were to retain the entire MRAs in Alternative 4 this would amount to (if closed to directed fishing) 6,400 mt of pollock, Pacific cod, Atka mackerel, Alaska plaice, yellowfin sole, other flatfish, rock sole, flathead sole, squid, 2,200 mt of Greenland turbot, 320 mt of sablefish, 640 mt of shortraker/rougheye rockfish, forage fish, 1,600 mt of aggregated rockfish, and 960 mt of other species (skates, sharks, octopus, and sculpins combined) within the entire BSAI. However, since the annual catch is still limited by the annual TAC for these species, increased catch of these SSL prey and other species in the arrowtooth flounder fishery would result in lower amounts of these species available in the directed fisheries. The amount of Atka mackerel and Pacific cod harvest in Area 543 would be minimal because of the prohibition on retention. Pacific cod and Atka mackerel could be kept up to the MRA when targeting arrowtooth or Kamchatka flounder in other areas of the Aleutian Islands, but the RPAs for 2010 SSL protection measures included a trigger that is monitored by NMFS for reinitiation of consultation based on Pacific cod harvests. In addition, the harvest of Atka mackerel by Amendment 80 vessels inside critical habitat is also limited to 10 percent of the Area 542 TAC and only to vessels in Amendment 80 cooperative or CDQ fishing. Both of these limits would prevent topping off behavior in the Aleutian Islands for Atka mackerel and Pacific cod. If harvesting of Atka mackerel and Pacific cod is diverted from Areal 542 to other locations, the increased retention of these prey species could result in further temporal and spatial dispersion of the fisheries for Atka mackerel, pollock, and Pacific cod. Therefore, neither Alternatives 2, 3, nor the Council's Preferred Alternative would have any additional adverse effects on SSLs and their designated critical habitat not already considered in previous consultations.

4.3.6 Cumulative Effects

Based on the findings in the previous environmental effects, because no additional direct or indirect impacts are anticipated on target or other species/habitat, there are no cumulative effects associated with the preferred alternative to target species, non-target species or their habitat, benthic habitat, seabirds, marine mammals, biodiversity or the environment .

4.3.7 Environmental Conclusions

One of the purposes of an environmental assessment is to provide the evidence and analysis necessary to decide whether an agency must prepare an environmental impact statement (EIS). The Finding of No Significant Impact (FONSI) is the decision maker's determination that the action will not result in significant impacts to the human environment, and therefore, further analysis in an EIS is not needed. The Council on Environmental Quality regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." An action must be evaluated at different spatial scales and settings to determine the context of the action. Intensity is evaluated with respect to the nature of impacts and the resources or environmental components affected by the action. NOAA Administrative Order (NAO) 216-6 provides guidance on the National Environmental Policy Act (NEPA) specifically to line agencies within NOAA. It specifies the definition of significance in the fishery management context by listing criteria that should be used to test the significance of fishery management actions (NAO 216-6 §§ 6.01 and 6.02). These factors form the basis of the analysis presented in this EA/RIR/IRFA. The results of that analysis are summarized here for those criteria.

Context: The context for the proposed action is groundfish fishing in the BSAI and the effects of this action are directly limited to the BSAI. The proposed action would make various revisions to the MRAs for groundfish using arrowtooth flounder as a basis species in the BSAI. The effects on society within the BSAI 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. Each consideration is addressed below in order as it appears in the NMFS Instruction 30-124-1 dated July 22, 2005, Guidelines for Preparation of a FONSI. The sections of the EA that address the considerations are identified. The proposed action would revise the MRAs for groundfish using arrowtooth flounder as a basis species in the BSAI. 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.

1) *Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

No. No significant adverse impacts on target species were identified for this action. No changes in overall amount, timing, or location of harvest of target species are expected with the proposed action; therefore, no impacts on the sustainability of any target species are expected. The amount of groundfish retained in the arrowtooth flounder and Kamchatka flounder fisheries will increase, but the total removal of each target species will still be within the TAC levels established for each target species and further constrained by the prohibited species catch limits established for Pacific halibut. The impacts of harvest strategies and resulting groundfish TAC amounts were analyzed in the final Alaska Groundfish Harvest Specifications Environmental Impact Statement (EIS) and were found not to jeopardize the sustainability of any target species. (EA Section 4.2.1).

2) *Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

No. Potential effects of the action on non-target/prohibited species are expected to not be significant and similar to status quo because no overall harvest changes to target species are expected. Because no overall changes in target species harvests is expected, the action is not likely to jeopardize the sustainability of any nontarget/prohibited species. This supports this conclusion of no significant effects to the sustainability of non-target species. (EA Section 4.2.3)

3) *Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in the fishery management plans (FMPs)?*

No. Fishing effort targeting arrowtooth flounder or Kamchatka flounder is limited by TACs set substantially lower or at acceptable biological catch levels. No significant adverse impacts were identified for this action on ocean or coastal habitats or essential fish habitat (EFH). This action does not change the current habitat protection measures in place in the BSAI and does not allow for any overall increases in fishing practices that may harm bottom habitat (EA Section 4.2.5). The the Alaska Groundfish Harvest Specifications found that this level of effort has minor impacts on ocean, coastal, and EFH. This proposed action increases the amount of groundfish that may be retained in the arrowtooth flounder and Kamchatka flounder fisheries and does not have any additional impacts on habitat or EFH (EA Section 4.1 introduction). In addition, all fishing by non-pelagic trawlers will continue to be conducted according to the EFH and Habitat Areas of Particular Concern protection measures under 50 CFR part 679. Therefore, the proposed action is not expected to have any impact on ocean or coastal habitats or EFH beyond that described and authorized under the EIS for the Alaska Groundfish Harvest Specifications. (EA Sections 4.2.3).

4) *Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

No. Public health and safety will not be affected in any way not evaluated under previous actions or disproportionately as a result of the proposed action. The action will not change fishing methods (including gear types), timing of fishing, or quota assignments to gear groups, which are based on previously established seasons and allocation formulas in regulations. (RIR Section 3.3.2.6)

5) *Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

No. The action is not expected to result in increased interactions with endangered or threatened species, marine mammals, seabirds, or their critical habitat beyond those identified in previous consultations under Section 7 of the Endangered Species Act (ESA), and through the four Section 7 consultations, and concurrence from the Northwest Region of NMFS. In the EA prepared for this action (EA Section 4.2.4) the impact of revising MRAs for the arrowtooth flounder and Kamchatka flounder fisheries on Steller sea lions (an ESA-listed species) was analyzed. Only the Steller sea lions were potentially affected by the action. The analysis of this action shows that the Steller sea lion protection measures currently implemented in the BSAI will not be altered. No change is expected in the overall harvest amounts of prey species or in fishing practices that may result in disturbance or incidental takes; therefore, this action will have no effect on Steller sea lions or their designated critical habitat nor on any ESA-listed species. (EA Section 4.2.5)

6) *Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

No. No significant adverse impacts on biodiversity or ecosystem function were identified for this action. Effects of fishing on the marine ecosystem in Alaska are analyzed in detail in the Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (PSEIS). Additional impacts on marine ecosystems in Alaska are summarized annually in the Stock Assessment and Fishery Evaluation (SAFE) reports. This action is limited in scope to the retention of groundfish in the arrowtooth flounder and Kamchatka flounder fisheries in the BSAI, and the impacts within the affected area are no different than those projected by the PSEIS or SAFE. Thus, no potential impacts are anticipated for this action on biodiversity and/or ecosystem function in the EA (EA Section 4.2).

7) *Are significant social or economic impacts interrelated with natural or physical environmental effects?*

No. No significant adverse impacts were identified for this action for social or economic impacts interrelated with natural or physical environmental effects (EA/RIR/IRFA Sections 5 and 6). Socioeconomic impacts of this action are limited to the reduction in waste of incidentally caught groundfish species in the arrowtooth flounder and Kamchatka flounder target fisheries. Reduced regulatory discards will benefit participants in the arrowtooth flounder and Kamchatka flounder fisheries and provide for more efficient use of fishery resources. No significant social or economic impacts of this action were identified in the EA or the accompanying regulatory impact review (RIR) or initial regulatory flexibility analysis (IRFA). (RIR Section 3.4 and 6).

8) *Are the effects on the quality of the human environment likely to be highly controversial?*

No. Revising the MRAs for selected species of groundfish in the arrowtooth flounder and Kamchatka flounder fisheries in the BSAI is anticipated to modestly reduce the amount of discards of otherwise marketable fish currently required by regulation. This action is intended to promote the goals and objectives of the Magnuson-Stevens Act, the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area, and other applicable laws (EA Sections 1 and 5). No controversial or adverse impacts have been identified as a result of this action.

9) *Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

No. This action does not affect any categories of areas on shore. This action takes place in the geographic area of the BSAI. The land adjacent to this marine area may contain archeological sites of native villages. This action occurs in adjacent marine waters, so no impacts on these cultural sites are expected. The marine waters where the fisheries occur contain ecologically critical areas. Effects on the unique characteristics of these areas are not anticipated to occur with this action because the amount of fish removed by vessels are within the TAC-specified harvest levels and this action does not change the current protection to EFH and ecologically critical nearshore areas (EA Section 4.2.3).

10) *Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

No. The fish species and harvest methods involved, limited harvest amounts, and area of activity where potential effects might occur are well known and do not involve unique or unknown aspects (EA Section 4.2.3).

11) *Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

No additional past or present cumulative impact issues have been identified that accrues from this action (EA Section 4).

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

No. This action is limited to the marine waters of the BSAI. The fishing activities under this action are not likely to result in destruction or loss of significant scientific, cultural, or historical resources because the pelagic trawling occurs primarily in the water column where these resources do not occur. Shipwrecks with historical significance or potential historical significance are identified in nautical charts and avoided by fishermen. (EA section 1 and 4)

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

No. The action will not introduce or spread nonindigenous species into Alaska beyond those previously identified because it does not change fishing, processing, or shipping practices that may lead to the introduction of nonindigenous species (EA Section 1).

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

No. Revising the MRAs for groundfish on a case-by-case basis to allow for better management has numerous precedents in the groundfish fisheries off Alaska. The action builds on that precedent. However, each decision about the appropriate management strategy for the incidental catch of groundfish harvested off Alaska is a separate decision requiring analysis and an adequate rationale. Therefore, this action does not create a precedent that binds NMFS or the Council in future management of other groundfish species.

15) Can the proposed action reasonably be expected to threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment?

No. This action poses no known violation of federal, state, or local laws or requirements for the protection of the environment. On July 1, 2011, the federally approved Coastal Management Program expired, resulting in a withdrawal from participation in the CZMA's National Coastal Management Program. The CZMA federal consistency provision in section 307 no longer applies in Alaska.

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

No significant past or present cumulative impacts have been identified that accrues from the proposed action (EA Section 4.2).

5.0 FINAL REGULATORY FLEXIBILITY ANALYSIS (FRFA)

5.1 Introduction

This Final Regulatory Flexibility Analysis (FRFA) 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). This FRFA evaluates the potential adverse economic impacts on small entities directly regulated by the action.

5.2 The Purpose of a FRFA

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 adverse economic 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 alleged violation of the RFA.

In determining the scope, or 'universe', of the entities to be considered in a FRFA, NMFS generally includes only those entities that can reasonably be expected to be directly regulated by this 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.

Data on cost structure, affiliation, and operational procedures and strategies in the fishing sectors subject to the 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 economic 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 action be adopted, a formal FRFA has been prepared and is included in this package for the final rule.

5.3 What is required in a FRFA?

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

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

5.4 What is a Small Entity

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

Small businesses: Section 601(3) of the RFA defines a "small business" as having the same meaning as a "small business concern," which is defined under section 3 of the Small Business Act. A "small business" or "small business concern" includes any firm that is independently owned and operated and not dominate in its field of operation. The U.S. Small Business Administration (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 form 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 (including its affiliates) 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. A wholesale business servicing the fishing industry is a small

business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

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

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

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

Small organizations: The RFA defines "small organizations" as any nonprofit 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.

A succinct statement of the need for, and objectives of the final rule

The primary purpose of the action is to reduce restrictive groundfish retention requirement for the BSAI groundfish fishery by increasing allowable retained catch of groundfish when arrowtooth flounder and Kamchatka flounder are open to directed fishing. The primary effect of this action would be to reduce the amount of discarded groundfish catch, but it will also allow some vessels to retain more valuable species. Small entities are unlikely to be disadvantaged by the opportunity to retain valuable incidental catch that would otherwise be discarded and made unavailable to sell as a marketable product. This final rule would accomplish that by increasing the MRAs for groundfish in the arrowtooth flounder fishery in the BSAI.

MRAs are one of several tools NMFS uses to regulate the catch rate of species closed to directed fishing, but not on PSC status. 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 all groundfish species open to directed fishing (the basis species). The purpose of the proposed action is to provide an opportunity to trawl fishery operations targeting the arrowtooth flounder species group to retain more groundfish and, thus, reduce regulatory discards. This could facilitate the Amendment 80 vessels in improving retention rates, necessary to meet the GRS.

I1n 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 (a species for which no market existed) as a basis species for retention of more readily marketable species for which directed fisheries had closed. 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 PSC amounts of Pacific halibut. Increased halibut mortality in the arrowtooth flounder fishery could result in reaching halibut PSC limits before the TACs established for other trawl target fisheries were harvested. This, in turn, would adversely impact those that depend upon other groundfish trawl fisheries including, the processors that purchase catch, employees and crew, and fisheries-dependent communities, among others.

Since 2007, markets for arrowtooth flounder have developed and this species now attracts a target fishery. As a result, representatives for the BSAI trawl industry now advocate changing the MRAs for BSAI 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 engawa (fleshy fins used for sashimi and soup stock) bait, and meal.

In June 2008, the Council approved increasing the MRAs for the GOA arrowtooth flounder fishery. With the exception of a few specific species to prevent "topping off," the MRAs were set at 20 percent. In a similar fashion the Council in December 2009 initiated an analysis to consider changes to the MRAs of groundfish in the arrowtooth flounder fishery in the BSAI. The MRAs for incidentally caught species in the BSAI arrowtooth flounder fishery range from 20 percent to 30 percent. At its June 2010 meeting, the Council developed a problem statement, which is provided below:

When the MRAs for the directed BSAI arrowtooth flounder fishery were set in regulations in 1994, the Council chose to set incidental catch allowance 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 constrained by MRAs in the directed BSAI 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. MRAs 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. In addition, the regulatory discard of these species could also potentially hamper Amendment 80 vessels trying to meet the increasingly challenging groundfish retention standard. Currently, the GRS is 80 percent, but in 2011, the GRS will increase to 85 percent.

This regulatory amendment would evaluate raising the MRAs for most species in the directed BSAI arrowtooth flounder fishery, to provide increased opportunity for retention of species harvested by the trawl sectors, reduce overall discards in this sector, and help improve the ability of the Amendment 80 fleet in meeting the mandatory 85 percent GRS that will be implemented in 2011, while not subjecting incidentally caught species to increased allocation concerns.

5.5 Summary of Significant Issues Raised During Public Comment

The commenter requested that NMFS remove an additional restriction on footnote 9 to in Table 11 at 50 CFR 679, that would have restricted vessels from using arrowtooth flounder or Kamchatka flounder as a basis species for the retention of groundfish when only one of the two flounder species was open to directed fishing. NOAA Office for Law Enforcement and the Amendment 80 cooperatives now apply observer catch composition data for arrowtooth flounder and Kamchatka flounder to avoid exceeding MRAs for either of these two species when one is open and the other is closed. NMFS agrees with this comment, and removes footnote 9 to Table 11. This allows for groundfish to be retained up to the stated MRA in Table 11, should either arrowtooth flounder or Kamchatka flounder be open to directed fishing. This further relieves a restriction consistent with the objective of the action to reduce regulatory and other discards of groundfish.

5.6 Number and Description of Small Entities Regulated by the Final Rule

NMFS estimated the number of small versus large entities by matching the gross earnings from all fisheries of record for 2009 with the vessels, the known ownership of those vessels, and the known affiliations of those vessels in the BSAI groundfish fisheries for that year. Based on those earnings data, the FRFA determined that there are 354 catcher vessels directly regulated by this action that had gross earnings less than $4.0 million, thus categorizing them as small entities based on the threshold that the Small Business Administration uses to define small fishing entities. For catcher/processors, 18 vessels had gross earnings less than $4 million, categorizing them as small entities. The preferred alternative also affects the six CDQ groups because it would revise regulations governing how allocations are made to the CDQ Program of TAC categories established by splitting existing quota categories, as has occurred with arrowtooth flounder and Kamchatka flounder. Due to their status as non-profit corporations, the CDQ groups are also considered to be small entities under the RFA.

5.7 Recordkeeping and Reporting requirements

Recordkeeping and reporting requirements will not change as a result of the final rule. The action under consideration requires no additional reporting, recordkeeping, or other compliance requirements that differ from the status quo. Under each of these alternatives discussed below as a result of establishing separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder several housekeeping revisions need to be made to facilitate recordkeeping, reporting, and catch accounting. Table 11 would be revised to include a separate row and column for Kamchatka flounder. In the halibut PSC categories § 679.21(e)(3)(iv)(C) would be revised to include Kamchatka flounder. In the season start dates §679.23(e)(1) would be revised to include Kamchatka flounder with a start date of May 1. Table 3 Product Recovery Rates for groundfish species and conversion rates for Pacific halibut would be revised to eliminate PRRs for individual species of flounders, sole, and turbot and establish a single PRR for all flatfish (except halibut) in order to include Kamchatka flounder. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) would be made. Finally, in a separate action, currently being prepared by NMFS, Table 2a Groundfish Species Codes will be revised to include Kamchatka flounder with a species code number of 117. Since these regulatory revisions are necessary under any of the alternatives considered none of the directly regulated small entities would incur any additional costs under this action.

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 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 3, and 4, and there

will be no change to recordkeeping and reporting requirements, with the exception of those necessary housekeeping regulatory revisions described above, under either of the proposed action alternatives.

5.8 Description of Significant Alternatives to the Final Rule

The suite of potential actions included three alternatives. The Council evaluated three alternatives and three suboptions to increase the MRAs of groundfish in the arrowtooth flounder fishery in the BSAI. Alternative 1, the status quo or no action alternative, would leave the MRAs for groundfish in the BSAI arrowtooth flounder fishery unchanged from current levels, and would continue to require fishermen to discard otherwise marketable groundfish.

Alternative 2 would set the MRAs for groundfish using arrowtooth flounder as a basis species at the same MRA levels for groundfish using Pacific cod as a basis species, with two suboptions to modify the Greenland turbot MRA at 15 percent (for suboption 2.1 – not selected) or 7 percent (for suboption 2.2 –selected), and one suboption to modify the "other species" group MRA to 3 percent.

Alternative 3 would set the MRAs for groundfish using arrowtooth flounder as a basis species at the same MRA levels for groundfish using flathead sole as a basis species. The Council also considered a suboption to Alternative 3 to set the MRA for Greenland turbot using arrowtooth flounder as a basis species to 15 percent.

To provide the opportunity to the arrowtooth flounder trawl fishing industry to reduce discards by allowing increased retention of groundfish, the Council recommended Alternative 2 as the preferred alternative, with suboptions 2.2 and 2.3 for Greenland turbot and the "other species" group. Alternative 2, combined with suboptions 2.2, and 2.3, would increase MRAs of groundfish closed to directed fishing for arrowtooth flounder as the basis species from zero percent to 20 percent for pollock, Pacific cod, Atka mackerel, Alaska plaice, yellowfin sole, other flatfish, rock sole, flathead sole, and squid; from zero percent to 7 percent for Greenland turbot; from zero percent to 1 percent for sablefish; from zero percent to 2 percent for shortraker and rougheye rockfish (combined); from zero percent to 5 percent for aggregated rockfish; and from zero percent to 3 percent for the "other species" group (consisting of skates, sharks, sculpins, and octopus in the aggregate). The Council recommended that the MRAs for Greenland turbot and aggregated "other species" be based on the approximate average incidental catch observed in the arrowtooth flounder fishery between 2003 and 2009. For Greenland turbot, an MRA of 7 percent would allow for increased retention of Greenland turbot for arrowtooth flounder as the basis species, when Greenland turbot is closed to directed fishing. Suboption 2.2 also would provide a more conservative MRA for Greenland turbot than suboption 2.1. Suboption 2.1, an MRA of 15 percent, would allow increased retention of Greenland turbot for arrowtooth flounder as the basis species. Constraining the MRA for Greenland turbot to 7 percent instead of 15 percent may reduce the amount of incidentally caught Greenland turbot in the Amendment 80 sector directed fishery for arrowtooth flounder, allowing for a greater amount of Greenland turbot to be available for small entities in the longline fishery. The longline fishery relies on access to the Greenland turbot directed fishery. Suboption 2.3 would conserve the stocks that comprise the "other species" group while allowing for some retained catch of these species in the arrowtooth flounder fishery when the species that comprise the "other species" group are closed to directed fishing.

Alternative 3 would increase the MRAs of groundfish closed to directed fishing for arrowtooth flounder as the basis species from zero percent to 20 percent for pollock, Pacific cod, Atka

mackerel, squid, and for the "other species" group (skates, sharks, sculpins, and octopus in the aggregate); from zero percent to 35 percent for Alaska plaice, yellowfin sole, other flatfish, flathead sole, and Greenland turbot; from zero percent to 15 percent for sablefish and aggregated rockfish; and from zero percent to 7 percent for shortraker and rougheye rockfish (combined).

Under Alternative 3, the Council recognized a greater potential for development of fisheries that could increase harvests of species and adversely impact the ability of NMFS to effectively manage several groundfish species within the TAC, and therefore did not recommend this alternative. In general, the development of a fishery is dependent upon a number of factors, including, but not limited to, the price of the MRA species, whether a market exists, accessibility of the species, storage availability, and processing capacity. In addition, the potential for a vessel to harvest a specific species varies across vessels. A vessel operator has more discretion to harvest specific groundfish species if the operator has the ability to limit incidental catch or the ability to discard low-valued fish, while targeting arrowtooth flounder.

Alternatives 2 and 3 would be beneficial to the affected small entities by providing an opportunity to retain additional, economically valuable groundfish species when arrowtooth flounder is a basis species. Under Alternative 2, the benefits to small entities would be slightly lower than under Alternative 3. However, Alternative 2 with suboptions 2.2 and 2.3 (the preferred alternative), that sets the MRA for Greenland turbot at 7 percent and the MRA for the species that comprise the "other species" group at 3 percent, reduces unintended impacts to the Greenland turbot directed fishery more effectively and provides greater protection for the species which comprise the "other species" group than does Alternative 3. Allowing a greater amount of Greenland turbot retained catch under Alternative 3 may result in earlier closure of the Greenland turbot directed fishery, as compared with Alternative 2 with suboption 2.2. No negative impacts on small entities are associated with either Alternative 2 or 3.

Should the preferred alternative be implemented, three additional amendments to the regulations proposed by NMFS are necessary. The purposes of these amendments are: to provide MRA management for Kamchatka flounder that is identical to for the MRA management applied to arrowtooth flounder; to prevent the Kamchatka flounder fishery from having negative impacts on the arrowtooth flounder and Greenland turbot directed fisheries; to facilitate recordkeeping, reporting, and catch accounting of Kamchatka flounder as well as other flatfish species and species groups; and to provide the Council and NMFS greater flexibility in the annual harvest specifications for NMFS to determine whether to allocate a portion of the TAC for a new tack category to the CDQ Program . These three regulatory amendments are required to manage Kamchatka flounder with separate harvest specifications with the same management measures that apply to arrowtooth flounder because of the close association of these two species in the groundfish fisheries. No negative impacts on small entities are associated with these proposed regulatory amendments. Participants in the Amendment 80 sector are the primary entities that would be affected by this proposed action since only Amendment 80 sector operators have developed markets for arrowtooth flounder and Kamchatka flounder and have expressed interest in retaining these two groundfish species. Small entities are unlikely to be disadvantaged by the opportunity to retain valuable incidental catch that would otherwise be discarded and made unavailable to sell as a marketable product.

6.0 CONSISTENCY WITH APPLICABLE LAW AND POLICY

6.1 Magnuson-Stevens Act

6.1.1 National Standards

NMFS has reviewed the proposed amendment to provide information for the consistency determination for National Standards 1 through 10. Statutory authority for measures designed to consider efficiency in the use of fishery resources is specifically addressed in section 301 of the Magnuson-Stevens Act. The final determination of National Standard consistency is subject to the Secretary of Commerce.

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

In terms of achieving "optimum yield" from a fishery, the Act defines "optimum", with respect to yield from the fishery, as the amount of fish which—

> (A) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
> (B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and
> (C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery.

Neither arrowtooth flounder, Kamchatka flounder, nor any of the BSAI groundfish stocks are overfished nor are any of these species subject to overfishing. The proposed action would revise MRAs associated with the arrowtooth flounder and Kamchatka flounder directed fisheries. Increasing the MRAs associated with the arrowtooth flounder and Kamchatka flounder directed fisheries would reduce regulatory discards of specified groundfish species for which there is available TAC. Regulations allowing for limited retention of these incidentally caught but economically valuable groundfish species may provide added incentive to target arrowtooth flounder and Kamchatka flounder and could result in increased yield from these fisheries.

Overall benefits to the Nation may be affected by the proposed action, though our ability to quantify those effects is limited. Overall net benefits to the Nation would not be expected to change to an identifiable degree between the alternatives under consideration. If the non-pelagic trawl operations are allowed retain and process additional groundfish, these entities may experience an increase in gross revenues from the proposed action.

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

Information in this analysis represents the most current, comprehensive set of information available to the Council, *recognizing that some information (such as operational costs) is unavailable*. Information previously developed on the BSAI groundfish stocks and fisheries, as well as the most recent information available, has been incorporated into this analysis. It represents the best scientific information available.

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

The annual TACs are set for BSAI groundfish stocks according to the annual harvest specification process that is outlined in the BSAI Groundfish FMP. NMFS conducts the stock assessments for these species based on the most recent catch and survey information. The assessment author(s), along with the BSAI Groundfish Plan Team and Science and Statistical Committee makes recommendations for overfishing levels and allowable biological catches to the Council. The Council sets annual harvest specifications for these stocks based on those scientific recommendations. (http://www.afsc.noaa.gov/refm/stocks/assessments.htm). In 2010, the Council recommended separate OFLs, ABCs, and TACs for Kamchatka flounder and arrowtooth flounder.

In compliance with National Standard 3, the current proposed action would revise regulations to manage Arrowtooth flounder and Kamchatka flounder in close coordination. Because arrowtooth flounder and Kamchatka flounder are a mixed stock species and are often targeted together, regulations would be revised to include Kamchatka flounder in the same trawl fishery category as arrowtooth flounder for the purpose of applying PSC limits, establish identical seasonal opening dates for these two species, and establish identical MRAs for these two species.

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

Nothing in the alternatives considers residency as a criterion for the Council's decision. Residents of various states, including Alaska and states of the Pacific Northwest, participate in the major sectors affected by these regulations. No discriminations are made among fishermen based on residency or any other criteria.

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

In compliance with National Standard 5, the proposed action would reduce waste and is likely to increase utilization of the groundfish fishery. The proposed rule would revise regulations to allow vessels targeting BSAI arrowtooth flounder or Kamchatka flounder to retain a higher percentage of incidentally caught groundfish. These regulatory revisions would allow for some retention of species closed to directed fishing instead of requiring regulatory discards of all incidentally caught species. This proposed action strikes a balance between the need to minimize discards and the need to prevent the development of "top off" fisheries of incidentally caught species with high market prices. These revisions would improve the ability of the Amendment 80 sector to meet GRS requirements, and could allow for greater production of economically valuable groundfish caught incidentally in the arrowtooth or Kamchatka flounder fishery.

The proposed rule could improve the efficiency of Amendment 80 operators on the fishing grounds by removing uncertainty regarding the length and consistency of the directed arrowtooth flounder and Kamchatka flounder directed fishery. Alternative 2, 3 and 4, include Kamchatka flounder in the same trawl fishery category as arrowtooth flounder for the purpose of applying PSC limits, by establishing identical seasonal opening dates for these two species, and by imposing identical MRA limits for these two species. In addition, because these species are difficult to distinguish once processed, the proposed regulatory revisions promote efficiency in harvest by prohibiting the use of these species as basis species should either arrowtooth flounder or Kamchatka flounder close to directed fishing. These amendments in combination would help to reduce uncertainty for managers regarding how quickly the Amendment 80 sector vessels may catch and process Kamchatka flounder. This improvement in information for fishery managers would translate into more predictable seasons and away from unanticipated closures for operators of Amendment 80 vessels.

National Standard 6 — Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The proposed regulatory revisions are consistent with National Standard 6.

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

The proposed regulatory revisions are consistent with National Standard 7. The revisions would include consolidating all flatfish species into a single product recovery rates (PRR). This consolidation would reduce the burden of calculating different PRR for flatfish with similar morphologies, would enable fishermen to more easily comply with PRR requirements, and thereby reduce enforcement and compliance costs. In addition, increasing the MRAs associated with the directed arrowtooth flounder and Kamchatka flounder fisheries would reduce waste and provide an opportunity to retain incidental catch of economically valuable species closed to directed fishing.

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

The proposed action appears consistent with National Standard 8. See discussion on overfishing under National Standard 1, and for (A) and (B). Note that this action would have no negative impact on shoreside landings or offloads at coastal ports, and would not affect distribution of landings, or participation of communities in the impacted fisheries.

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

The proposed action is specifically intended to reduce discards of incidental catch. Currently, regulations require sectors that target arrowtooth flounder to discard one hundred percent of incidentally caught groundfish species that are closed to directed fishing. The proposed rule would allow members of sectors targeting arrowtooth flounder and Kamchatka flounder to retain for sale or personal use a specified amount of incidentally caught groundfish species for which there is still available TAC.
The impracticability of reducing regulatory discards beyond amount specified in the preferred alternative is discussed in the analysis of the impacts of the various alternatives.

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

The proposed action is consistent with this standard. None of the proposed alternatives would change safety requirements for fishing vessels. No safety issues have been identified relevant to the proposed action.

This program is also consistent with the authority for the CDQ program section 305(i)(1)(B)(ii) of the Magnuson-Stevens Act. In order to support flexibility in making allocations of Community Development Quotas (CDQ) of groundfish harvest specifications to CDQ groups, including those of Kamchatka flounder, revisions to § 679.20(b)(1)(ii)(E) are proposed. Following the establishment of a separate TAC

for Kamchatka flounder these revisions codify in regulation that CDQ groups have an opportunity to request that an allocation of Kamchatka flounder to CDQ groups be annually specified.

7.0 REFERENCES

National Marine Fisheries Service (NMFS). 2004. Final Programmatic Supplemental Environmental Impact Statement for the Bering Sea and Aleutian Islands Management Area.

NMFS. 2007. Alaska Groundfish Harvest Specifications Final Environmental Impact Statement.

NMFS. 2008. EA/RIR/IRFA For a Proposed Regulatory Amendment to Implement Amendment 84 to the Fishery Management Plan for Groundfish of the Gulf of Alaska. NOAA Fisheries, Alaska Regional Office, Juneau.

NMFS. 2009. Stock Assessment and Fishery Evaluation Report (SAFE) for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Islands Area: Economic Status of the Groundfish Fisheries Off Alaska, 2008, Alaska Fisheries Science Center, 7600 Sand Point Way N.E. Seattle, Washington.

NMFS. 2010. Final Biological Opinion on the Alaska Groundfish Fisheries. November 2010. National Marine Fisheries Service, P. O. Box 21668, Juneau, AK 99802.

NPFMC. 2009a. Stock Assessment and Fishery Evaluation Report (SAFE) for the Groundfish Resources of the Bering Sea and Aleutian Islands. NPFMC, 605 W. 4th Avenue, Suite 306, Anchorage, Alaska.

NPFMC. 2009b. Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area.

NPFMC. 2010. Stock Assessment and Fishery Evaluation Report (SAFE) for the Groundfish Resources of the Bering Sea and Aleutian Islands. NPFMC, 605 W. 4th Avenue, Suite 306, Anchorage, Alaska.

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Appendix 1 Table 11 at Present

Table 11 to Part 679—BSAI Retainable Percentages

Basis Species		Incidental Catch Species[5]															
Code	Species	Pollock	Pacific cod	Atka mackerel	Alaska plaice	Arrow-tooth	Yellow fin sole	Other flatfish[2]	Rock sole	Flathead sole	Green-land turbot	Sable-fish1	Short-raker/ rougheye	Aggregated rockfish[6]	Squid	Aggregated forage fish[7]	Other species[4]
110	Pacific cod	20	na[5]	20	20	35	20	20	20	20	1	1	2	5	20	2	20
121	Arrow-tooth	0	0	0	0	na	0	0	0	0	0	0	0	0	0	2	0
122	Flathead sole	20	20	20	35	35	35	35	35	na	35	15	7	15	20	2	20
123	Rock sole	20	20	20	35	35	35	35	na	35	1	1	2	15	20	2	20
127	Yellowfin sole	20	20	20	35	35	na	35	35	35	1	1	2	5	20	2	20
133	Alaska Plaice	20	20	20	na	35	35	35	35	35	1	1	2	5	20	2	20
134	Greenland turbot	20	20	20	20	35	20	20	20	20	na	15	7	15	20	2	20
136	Northern	20	20	20	20	35	20	20	20	20	35	15	7	15	20	2	20
141	Pacific Ocean perch	20	20	20	20	35	20	20	20	20	35	15	7	15	20	2	20
152/ 151	Shortraker/ Rougheye	20	20	20	20	35	20	20	20	20	35	15	na	5	20	2	20
193	Atka mackerel	20	20	na	20	35	20	20	20	20	1	1	2	5	20	2	20
270	Pollock	na	20	20	20	35	20	20	20	20	1	1	2	5	20	2	20
710	Sablefish[1]	20	20	20	20	35	20	20	20	20	35	na	7	15	20	2	20
875	Squid	20	20	20	20	35	20	20	20	20	1	1	2	5	na	2	20
Other flatfish[2]		20	20	20	35	35	35	na	35	35	1	1	2	5	20	2	20
Other rockfish[3]		20	20	20	20	35	20	20	20	20	35	15	7	15	20	2	20
Other species[4]		20	20	20	20	35	20	20	20	20	1	1	2	5	20	2	na
Aggregated amount non-groundfish species[8]		20	20	20	20	35	20	20	20	20	1	1	2	5	20	2	20

[1] Sablefish: for fixed gear restrictions, see § 679.7(f)(3)(ii) and (f)(11).

[2] Other flatfish includes all flatfish species, except for Pacific halibut (a prohibited species), flathead sole, Greenland turbot, rock sole, yellowfin sole, Alaska plaice, and arrowtooth flounder.

[3] Other rockfish includes all “rockfish” as defined at § 679.2, except for Pacific ocean perch; and northern, shortraker, and rougheye rockfish.

[4] Other species includes sculpins, sharks, skates and octopus. Forage fish, as defined at Table 2c to this part are not included in the “other species” category.

[5] na = not applicable

[6] Aggregated rockfish includes all of the genera Sebastes and Sebastolobus, except shortraker and rougheye rockfish.

[7] Forage fish are defined at Table 2c to this part.

[8] All legally retained species of fish and shellfish, including CDQ halibut and IFQ halibut that are not listed as FMP groundfish in Tables 2a and 2c to this part.

Proposed changes to Table 11, as Revised for Final Rule Table 11 to Part 679-BSAI Retainable Percentages

BASIS SPECIES			INCIDENTAL CATCH SPECIES															
Code	Species	Pollock	Pacific cod	Atka mackerel	Alaska plaice	Arrow-Tooth[9]	**Kam-chatka**	Yellow fin sole	Other flatfish[2]	Rock sole	Flathead sole	Green-land turbot	Sable-fish[1]	Short-raker/ rougheye	Aggregated rockfish[6]	Squid	Aggregated forage fish[7]	Other species[4]
110	Pacific cod	20	na[5]	20	20	35	**35**	20	20	20	20	1	1	2	5	20	2	20
121	Arrowtooth[9]	20	20	20	20	na	**20**	20	20	20	20	7	1	2	5	20	2	3
117	**Kamchatka**	**20**	**20**	**20**	**20**	**20**	**na**	**20**	**20**	**20**	**20**	**7**	**1**	**2**	**5**	**20**	**2**	**3**
122	Flathead sole	20	20	20	35	35	**35**	35	35	35	na	35	15	7	15	20	2	20
123	Rock sole	20	20	20	35	35	**35**	35	35	na	35	1	1	2	15	20	2	20
127	Yellowfin sole	20	20	20	35	35	**35**	na	35	35	35	1	1	2	5	20	2	20
133	Alaska Plaice	20	20	20	na	35	**35**	35	35	35	35	1	1	2	5	20	2	20
134	Greenland turbot	20	20	20	20	35	**35**	20	20	20	20	na	15	7	15	20	2	20
136	Northern	20	20	20	20	35	**35**	20	20	20	20	35	15	7	15	20	2	20
141	Pacific Ocean perch	20	20	20	20	35	**35**	20	20	20	20	35	15	7	15	20	2	20
152/ 151	Shortraker/ Rougheye	20	20	20	20	35	**35**	20	20	20	20	35	15	na	5	20	2	20
193	Atka mackerel	20	20	na	20	35	**35**	20	20	20	20	1	1	2	5	20	2	20
270	Pollock	na	20	20	20	35	**35**	20	20	20	20	1	1	2	5	20	2	20
710	Sablefish[1]	20	20	20	20	35	**35**	20	20	20	20	35	na	7	15	20	2	20
875	Squid	20	20	20	20	35	**35**	20	20	20	20	1	1	2	5	na	2	20
Other flatfish[2]		20	20	20	35	35	**35**	35	na	35	35	1	1	2	5	20	2	20
Other rockfish[3]		20	20	20	20	35	**35**	20	20	20	20	35	15	7	15	20	2	20
Other species[4]		20	20	20	20	35	**35**	20	20	20	20	1	1	2	5	20	2	na
Aggregated amount non-groundfish species[8]		20	20	20	20	35	**35**	20	20	20	20	1	1	2	5	20	2	20

[1] Sablefish: for fixed gear restrictions, see § 679.7(f)(3)(ii) and (f)(11).
[2] Other flatfish includes all flatfish species, except for Pacific halibut (a prohibited species), flathead sole, Greenland turbot, rock sole, yellowfin sole, Alaska plaice, arrowtooth flounder, and Kamchatka flounder.
[3] Other rockfish includes all "rockfish" as defined at § 679.2, except for Pacific ocean perch; and northern, shortraker, and rougheye rockfish.
[4] The other species group includes sculpins, sharks, skates, and octopus.
[5] na = not applicable
[6] Aggregated rockfish includes all "rockfish" as defined at § 679.2**,** except shortraker and rougheye rockfish.
[7] Forage fish are defined at Table 2c to this part.
[8] All legally retained species of fish and shellfish, including CDQ halibut and IFQ halibut that are not listed as FMP groundfish in Tables 2a and 2c to this part.
~~[9] The arrowtooth group includes arrowtooth flounder and Kamchatka flounder in the aggregate as basis species and as incidental catch species. Should either arrowtooth flounder or Kamchatka flounder close to directed fishing then neither arrowtooth flounder nor Kamchatka flounder may be used as a basis species for the purpose of retaining incidental catch of groundfish~~

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from Jon McCracken 11/1/10
GAberle 12/10/2010
TPearson 1/5/2011
TPearson 1/21/2011 Principally added information about the housekeeping regulatory revisions required as a result of separate OFLs, ABCs, and TACs for arrowtooth and Kamchatka flounder.
sbibb 2/2/11
TPearson: 5/25/2011 Added information regarding management and enforcement concerns and minor edits and comments from Jon and Gabrielle 7/15/2011 and Glenn 8/11/2011
MSullivan: 4/20/12 Reviewed & commented on EA/RIR/IRFA, requesting increased effects analysis, increased economic and small entity analysis. Moderate to extensive comments. Package returned to SF May 1, 2012.
Jhartman: 5/8/12, Initial revisions to respond to Msullivan cmts. Subsequent request from GC to have inseason staff and Ben Muse review analysis.
Mary Furuness: 5-17-12 Comments on EA/RIR/IRFA to Jhartman included with Swhitney cmts.
Swhitney: Review selected sections of EA/RIR/IRFA sections at GC request 4-21-12, Review full EA/RIR/IRFA 5-11-12 to Steve, with comments back from Steve on 5-17-12.
Ben Muse: 5-3-12 Ben Muse reviewed IRFA and sections of RIR after GC suggested these sections be augmented.
Jeff Hartman 5-24-12 full EA/RIR/IRFA (& package) back to GC
Msullivan: 6-29-11 Additional revisions effects analysis, fishery management, National Standards.
Jhartman: 7-19-12 Revised draft from Msullivan 7-29-12 comments and returned in yellow folder.
Msullivan: 8-1-12 Minor revisions to National Standards, effects analysis
Jhartman: 8-2-12 Revised for final to Lisa Lindeman
Jhartman: Revised based on comments from proposed rule – Table 11 footnote 9 removal.
Jhartman: 5-3-13, Revised for title, footers
PPI: Cmts on consistency with FONSI
Jhartman: 5-3-13, Revise NEPA section – 16 questions consistent with FONSI