

PUBLIC REVIEW DRAFT

REGULATORY IMPACT REVIEW / INITIAL REGULATORY FLEXIBILITY ANALYSIS

For a proposed amendment to the
Fishery Management Plan for Groundfish of the
Bering Sea and Aleutian Islands Management Area

Bering Sea Flatfish Harvest Specifications Flexibility

March 2013

Abstract: This document analyzes a proposed action that would allocate the ABC surplus (i.e., the difference between acceptable biological catch and total allowable catch) for flathead sole, rock sole, and yellowfin sole, among the Amendment 80 cooperatives and CDQ groups, using the same formulas that are used in the annual harvest specifications process. These entities would be able to exchange their quota share of one of the three species (flathead sole, rock sole, and/or yellowfin sole) for an equivalent amount of their allocation of the ABC surplus for another (flathead sole, rock sole, and/or yellowfin sole). The approach is intended to increase the opportunity for maximizing the harvest of these species, while ensuring that the overall 2 million mt optimum yield, and ABCs for each individual species, are not exceeded. The analysis also includes options to restrict flexibility in the exchange of yellowfin sole, if the analysis shows that there is a potential negative impact of the approach on users of yellowfin sole in the Bering Sea Aleutian Islands trawl limited access sector. The proposed action would amend the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area and Federal regulations related to the Bering Sea / Aleutian Islands.

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Executive Summary

This Regulatory Impact Review (RIR) is prepared for a proposed action that would allocate the ABC surplus (i.e., the difference between acceptable biological catch (ABC) and total allowable catch (TAC)) for flathead sole, rock sole, and/or yellowfin sole, among the Amendment 80 cooperatives and CDQ groups, using the same formulas that are used in the annual harvest specifications process. These entities would be able to exchange their quota share of one of the three species (flathead sole, rock sole, and/or yellowfin sole) for an equivalent amount of their allocation of the ABC surplus for another (flathead sole, rock sole, and/or yellowfin sole). The approach is intended to increase the opportunity for maximizing the harvest of these species, while ensuring that the overall 2 million mt optimum yield, and ABCs for each individual species, are not exceeded. The analysis also includes options to restrict flexibility in the exchange of yellowfin sole, if the analysis shows that there is a potential negative impact of the approach on users of yellowfin sole in the Bering Sea Aleutian Islands trawl limited access sector. The proposed action would amend the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and Federal regulations related to the Bering Sea / Aleutian Islands (BSAI).

Purpose and Need

This analysis identifies a mechanism to increase flexibility in the use of three target flatfish species, within the confines of existing conservation thresholds. Flatfish TACs are consistently underharvested, due to various economic, regulatory, and environmental constraints. Under the Magnuson-Stevens Act and the Council's BSAI FMP, there is a need to promote conservation while providing for optimum yield for the BSAI groundfish fishery. The purpose of this action is to identify a flexible approach that creates additional harvest opportunities to maximize total allowable catches, but still (1) maintain catch below acceptable biological catch limits and (2) ensure that the 2 million mt maximum limit of the BSAI groundfish optimum yield range will not be exceeded.

To originate this action in June 2012, the Council adopted the following problem statement:

Typically, the Amendment 80 sector is unable to fully harvest the TACs for flathead sole, rock sole, and yellowfin sole due to market limitations and limitations associated with allocations of certain species harvested incidentally in the directed flatfish fisheries. In an effort to create additional harvest opportunities for the above species, a new harvest and accounting methodology is needed that would provide the Amendment 80 sector and CDQ groups increased flexibility in using yellowfin sole, rock sole, or flathead sole allocations. A new harvest and accounting methodology would enable Amendment 80 cooperatives and CDQ groups to maximize their harvest of these three species under various regulatory, economic, and environmental constraints while also ensuring that the ABC for each individual species is not exceeded in order to avoid any biological or conservation concerns.

Description of the Alternatives

The alternatives and options adopted by the Council in June 2012, and modified in February 2013, are listed below, and discussed further in the sections that follow.

Alternative 1: No Action.

Alternative 2: Allocate ABC surplus (the difference between ABC and TAC) for flathead sole, rock sole, and yellowfin sole among the Amendment 80 cooperatives and the CDQ Program, using the same formulas as are used in the annual harvest specifications process. Entities may exchange their yellowfin sole, flathead sole, and/or rock sole quota share for an equivalent amount of their allocation of the ABC surplus for these species. Quota share that is exchanged for ABC surplus may be credited back to the entity's allocation of the surplus if unused.

Alternative 3: For flathead sole, rock sole, and yellowfin sole, the Council shall annually establish a harvest limit that is equal to ABC, or reduced from ABC for social, economic, or ecological considerations, and allocate the harvest limit surplus¹ (the difference between the harvest limit and TAC) for flathead sole, rock sole, and yellowfin sole, among the Amendment 80 cooperatives and the CDQ Program, using the same formulas as are used in the annual harvest specifications process. Entities may exchange their yellowfin sole, flathead sole, and/or rock sole quota share for an equivalent amount of their allocation of the harvest limit surplus for these species. Quota share that is exchanged for harvest limit surplus may be credited back to the entity's allocation of the surplus if unused.

Option 1: Each entity is limited to 3 exchanges per calendar year.

Option 2: Only allocate the ABC (or harvest limit) surplus for flathead sole and rock sole. Entities may, however, still exchange their yellowfin sole quota share to access their allocation of the rock sole or flathead sole ABC (or harvest limit) surplus.

Option 3: No entity may access more than [5,000 mt to 25,000 mt] of additional yellowfin sole.

Note: The three options may apply either to Alternative 2 or Alternative 3. Options 2 and 3 are mutually exclusive.

Summary of the Potential Effects of the Alternatives

Under **Alternative 1**, the status quo alternative, the flatfish fleet has had difficulty fully utilizing the flatfish resource, even though since the implementation of Amendment 80, in 2008, catch and utilization rates have improved substantially. The implementation of the Amendment 80 program, however, has also precipitated a situation where there is an incentive to set artificially high TACs for the species for which participants are hard capped, in order to account for an environment in which the sector is operating under multiple and unpredictable catch constraints. The harvest specifications process and pre-season incidental catch planning may not be able to relieve constraints that arise midseason, in response to changes in incidental catch conditions. In some instances, this situation may inhibit the achievement of optimum yield.

Alternative 3 differs from Alternative 2 only in that the Council would have the ability to reduce the ABC surplus by some specified amount for socioeconomic and/or biological considerations. The resulting ABC reserve would be available to eligible entities exactly as described in Alternative 2. As a result, the

¹ Note, this is the terminology that was adopted by the Council at initial review, in February 2013. While the alternative remains functionally unaltered, in the remainder of the document, the term "harvest limit surplus" has been redefined as the ABC reserve amount, to make the language consistent with the process that would be used to implement the alternative. The ABC reserve amount is equivalent to ABC minus TAC minus a Council buffer amount, which could be set aside for social, economic and/or biological considerations. This is described in further detail in Section 3.3.

discussion of the impacts of these two alternatives is identical, except that Alternative 3 potentially provides reduced flexibility to the eligible entities, while preserving the Council's ability to recommend maximum harvestable amounts of flathead sole, rock sole, and yellowfin sole.

Alternatives 2 and 3, relative to status quo, could be of benefit for maximizing flatfish TAC utilization, to the extent that additional constraints in targeting flatfish can be resolved through inseason flexibility in the choice of a flatfish target. The flexibility to exchange quota among target species allows the fleet to shift between targets when unexpected changes occur. The ability to respond inseason may also benefit the fleet with respect to changing environmental and/or market conditions.

The CDQ groups would have the same opportunity as the Amendment 80 cooperatives to access the ABC surplus or ABC reserve, and consequently would also be able to benefit from the flexibility in choice of target flatfish afforded by Alternatives 2 and 3. The CDQ program as a whole is not yet approaching full utilization of any of the three target flatfish species, however, so any benefits of this flexibility may not be apparent until the program comes closer to fully utilizing its existing allocations, as the groups could first utilize their ability to transfer quota share among themselves. At the program level, the CDQ groups as a whole have had greater difficulty in fully utilizing their Amendment 80 target species since the implementation of Amendment 80, particularly in 2008 to 2010. Anecdotal evidence suggests that leasing CDQ species is desirable², however, and as Amendment 80 vessels increase their efficiency, they will continue to seek other fishing opportunities, such as CDQ harvest.

Other BSAI groundfish fishery participants may benefit from the increased flexibility proposed under Alternatives 2 and 3 by a relief of pressure on the annual TAC negotiations. The Amendment 80 sector, in managing their multiple hard caps, has to factor in considerable uncertainty in order to ensure that they can successfully prosecute their multispecies fisheries. If the sector has access to an additional tool, there may be more room for compromise with respect to balancing TACs under the 2 million mt optimum yield limit, especially in years where the pollock and/or Pacific cod biomasses are high.

It is possible that this alternative may change interactions with the BSAI trawl limited access sector with respect to TAC negotiations on yellowfin sole; this interaction could work in either direction, to raise or lower the yellowfin sole TAC set at the beginning of the year. However, the Council makes final recommendations on TAC setting, and it is likely that any attempts at gaming by either sector would be apparent to the Council, or brought out in public testimony. In reality, the Council has habitually set the yellowfin sole TAC close to or at the ABC in most years.

Alternatives 2 and 3 would have no effect on stock assessments or on annual catch limit accounting. The approach proposed in Alternatives 2 and 3 would add a level of complexity both to NMFS management and the annual harvest specifications process, however, such changes should be feasible. On an annual basis, the Council and NMFS would likely need to acknowledge, as part of the harvest specifications process, that the TAC that is set for the three flatfish species could increase, although the overall constraint of the 2 million mt optimum yield limit would still be maintained.

If an inseason adjustment and Federal Register notice is required for each exchange, then having some limit on the number of exchanges per year, as in **Option 1**, would reduce the potential administrative burden of Alternatives 2 and 3 for NMFS. A limit of three exchanges should provide sufficient opportunity for the sectors.

² Jason Anderson, Alaska Seafood Cooperative, personal communication, 1/22/2013; Everette Anderson, Aleutian Pribilof Islands Community Development Association, personal communication, 1/22/2013.

It is speculative whether there is likely to be an adverse impact on the BSAI limited trawl access sector as a result of Alternatives 2 and 3 (see discussion above). Nonetheless, the Council has identified two possible options that could mitigate any adverse effect on the BSAI limited trawl access sector. **Option 2** would eliminate any possible adverse effect on the BSAI limited trawl access sector. However, the ability to exchange excess quota share of other flatfish species for yellowfin sole TAC, particularly towards the end of the year when yellowfin sole is the primary flatfish target, could be an important element of the flexibility envisioned in Alternatives 2 and 3. Under **Option 3**, the Council would limit the amount of additional yellowfin sole that could be accessed or ‘created’ through ABC surplus or ABC reserve exchange, by entity. To the extent that the limit set in Option 3 is constraining for Amendment 80 cooperatives, it reduces the flexibility afforded by Alternatives 2 and 3, but still provides more flexibility than Option 2.

1 Introduction

This Regulatory Impact Review (RIR) is prepared for a proposed action that would allocate the ABC surplus (i.e., the difference between acceptable biological catch (ABC) and total allowable catch (TAC)) for flathead sole, rock sole, and/or yellowfin sole, among the Amendment 80 cooperatives and CDQ groups, using the same formulas that are used in the annual harvest specifications process. These entities would be able to exchange their quota share of one of the three species (flathead sole, rock sole, and/or yellowfin sole) for an equivalent amount of their allocation of the ABC surplus for another (flathead sole, rock sole, and/or yellowfin sole). The approach is intended to increase the opportunity for maximizing the harvest of these species, while ensuring that the overall 2 million mt optimum yield, and ABCs for each individual species, are not exceeded. The analysis also includes options to restrict flexibility in the exchange of yellowfin sole, if the analysis shows that there is a potential negative impact of the approach on users of yellowfin sole in the BSAI trawl limited access sector. The proposed action would amend the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and Federal regulations related to the Bering Sea / Aleutian Islands (BSAI).

This RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, September 30, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement for 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.

1.1 History of this Action

In June 2012, the Council initiated this analysis to change the harvest and accounting methodology for flathead sole, rock sole, and yellowfin sole, in order to allow increased flexibility in targeting these species. This issue was originally brought to the Council in testimony by industry, in December 2010. The Council reviewed several iterations of a discussion paper evaluating different approaches to increase

flexibility in the specifications process, including the use of nonspecified reserves, and other measures. The discussion paper also identified legal, practical, and policy implications of such measures.

In investigating approaches to achieve increased flexibility in how flatfish may be harvested in the BSAI, the discussion paper identified certain basic assumptions, with which the Council agreed:

- Ensure that the OFL and ABC for a target stock are not exceeded.
- Ensure that the 2 million mt optimum yield cap is not exceeded.
- Be consistent with the management goals established under the Amendment 80 Program.
- Provide a transparent process for determining allocations before the start of the fishing year, preferably in the harvest specifications process.

Under the approach proposed in this analysis, no change is envisioned to the current process for establishing individual overfishing levels (OFLs), ABCs, or TACs for each of the three species through the harvest specification process. The proposed approach would not alter the way that stock assessments are conducted for the individual species, nor the recommendations for OFL and ABC made by the Plan Team and the Council's Scientific and Statistical Committee.

The approach also assumes that, to the extent possible, the Council's intention is to be consistent with the existing Amendment 80 Program. The various sectors that harvest the three flatfish species would continue to be managed, either through hard caps or through NMFS' inseason management, in such a way as to prevent allocations or catch limits from being exceeded.

In June 2012, the Council initiated an analysis of an approach that appeared to be achievable within the existing management structure, while including options to mitigate any adverse impacts to other parties, and identified a problem statement.

1.2 Statutory Authority for this Action

NMFS manages the U.S. groundfish fisheries in the portion of its exclusive economic zone within the BSAI according to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area. This FMP was prepared by the North Pacific Fishery Management Council (Council) under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). Regulations governing fishing by U.S. vessels in accordance with the FMP appear at subpart H of 50 CFR part 600 and 50 CFR part 679.

2 Purpose and Need

This analysis examines alternatives to increase flexibility in the use of three target flatfish species, within the confines of existing conservation thresholds. Flatfish TACs are consistently underharvested, due to various economic, regulatory, and environmental constraints. Under the Magnuson-Stevens Act and the Council's BSAI FMP, there is a need to promote conservation while providing for optimum yield for the BSAI groundfish fishery. The purpose of this action is to identify a flexible approach that creates additional harvest opportunities to maximize total allowable catches, but still (1) maintain catch below the acceptable biological catch limits and (2) ensure that the 2 million mt maximum limit of the BSAI groundfish optimum yield range will not be exceeded.

To originate this action in June 2012, the Council adopted the following problem statement:

Typically, the Amendment 80 sector is unable to fully harvest the TACs for flathead sole, rock sole, and yellowfin sole due to market limitations and limitations associated with

allocations of certain species harvested incidentally in the directed flatfish fisheries. In an effort to create additional harvest opportunities for the above species, a new harvest and accounting methodology is needed that would provide the Amendment 80 sector and CDQ groups increased flexibility in using yellowfin sole, rock sole, or flathead sole allocations. A new harvest and accounting methodology would enable Amendment 80 cooperatives and CDQ groups to maximize their harvest of these three species under various regulatory, economic, and environmental constraints while also ensuring that the ABC for each individual species is not exceeded in order to avoid any biological or conservation concerns.

3 Alternatives

The alternatives and options adopted by the Council in June 2012, and modified in February 2013, are listed below, and discussed further in the sections that follow.

Alternative 1: No Action.

Alternative 2: Allocate ABC surplus (the difference between ABC and TAC) for flathead sole, rock sole, and yellowfin sole among the Amendment 80 cooperatives and the CDQ Program, using the same formulas as are used in the annual harvest specifications process. Entities may exchange their yellowfin sole, flathead sole, and/or rock sole quota share for an equivalent amount of their allocation of the ABC surplus for these species. Quota share that is exchanged for ABC surplus may be credited back to the entity's allocation of the surplus if unused.

Alternative 3: For flathead sole, rock sole, and yellowfin sole, the Council shall annually establish a harvest limit that is equal to ABC, or reduced from ABC for social, economic, or ecological considerations, and allocate the harvest limit surplus³ (the difference between the harvest limit and TAC) for flathead sole, rock sole, and yellowfin sole, among the Amendment 80 cooperatives and the CDQ Program, using the same formulas as are used in the annual harvest specifications process. Entities may exchange their yellowfin sole, flathead sole, and/or rock sole quota share for an equivalent amount of their allocation of the harvest limit surplus for these species. Quota share that is exchanged for harvest limit surplus may be credited back to the entity's allocation of the surplus if unused.

Option 1: Each entity is limited to 3 exchanges per calendar year.

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Option 3: No entity may access more than [5,000 mt to 25,000 mt] of additional yellowfin sole.

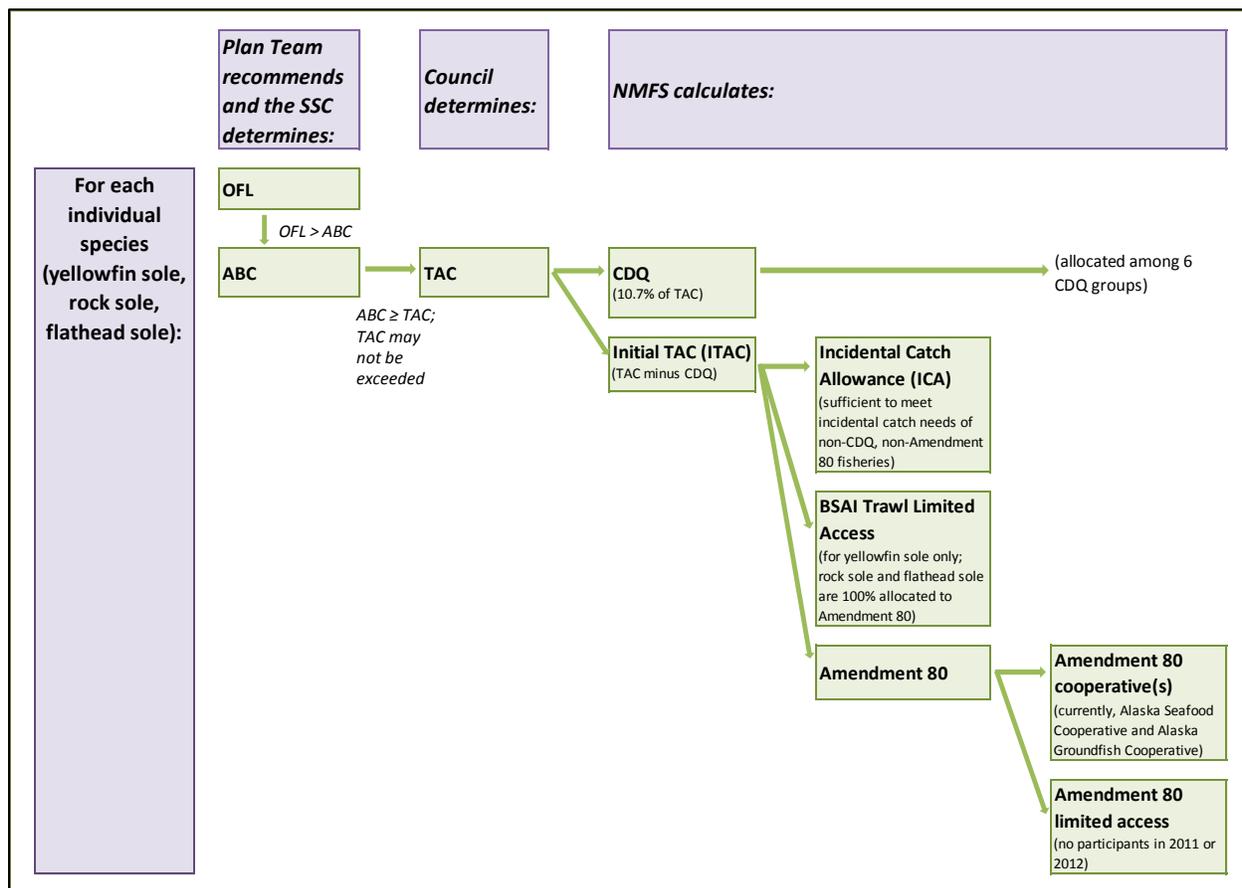
Note: The three options may apply either to Alternative 2 or Alternative 3. Options 2 and 3 are mutually exclusive.

³ Note, this is the terminology that was adopted by the Council at initial review, in February 2013. While the alternative remains functionally unaltered, in the remainder of the document, the term "harvest limit surplus" has been redefined as the ABC reserve amount, to make the language consistent with the process that would be used to implement the alternative, The ABC reserve amount is equivalent to ABC minus TAC minus a Council buffer amount, which could be set aside for social, economic and/or biological considerations. This is described in further detail in Section 3.3.

3.1 Alternative 1

The BSAI FMP establishes requirements for setting OFLs, ABCs, and TACs for target groundfish species. The ABC is the maximum permissible annual catch. The TAC cannot be set higher than the ABC, and can be set lower depending on biological or socioeconomic factors considered by the Council and NMFS. The OFL, ABC, and TAC are set through the harvest specification process (Figure 1). The FMP establishes an annual catch limit (ACL) for each target species consistent with National Standard 1 of the Magnuson-Stevens Act⁴. For groundfish of the BSAI, including flathead sole, rock sole, and yellowfin sole, the ACL is equal to the ABC (NPFMC 2011). Typically, the TACs for flathead sole and rock sole are set well below the ABC. Generally, the yellowfin sole TAC has been set close to or at the ABC.

Figure 1 Current process for establishing OFL, ABC, TAC, and fishery allocations for flathead sole, rock sole, and yellowfin sole.



Statute limits the optimum yield (OY) for groundfish species in the BSAI to two million metric tons (mt)⁵. The Council sets the combined TACs at less than or equal to two million mt to ensure the BSAI OY limit is not exceeded.

⁴ National Standard 1 of the MSA, and National Standard 1 guidelines are described in the final rule to implement National Standard 1 guidelines (January 16, 2009; 74 FR 3178), and the final rule implementing Amendments 95 and 96 to the fishery management plans for groundfish of the BSAI and Gulf of Alaska (October 6, 2010; 75 FR 61639).

⁵ See section 803(c) of Pub. L. No. 108-199 "The optimum yield for groundfish in the Bering Sea and Aleutian Islands Management Area shall not exceed 2 million metric tons."

Flathead sole and rock sole TACs are apportioned between the Western Alaska Community Development Program (CDQ Program) and the Amendment 80 sector (Figure 1). NMFS also sets an incidental catch allowance (ICA) to account for incidental catch in non-CDQ and non-Amendment 80 sectors. The yellowfin sole TAC is apportioned among the CDQ Program, the Amendment 80 sector, and the BSAI trawl limited access sector (i.e., non-Amendment 80 trawl vessels), in addition to an ICA set aside. NMFS may reallocate any portion of the TAC not projected to be harvested as ICA or by the BSAI trawl limited access sector to Amendment 80 cooperatives during the fishing year.

The portion of the flathead sole, rock sole, and yellowfin sole TAC assigned to the Amendment 80 sector is further apportioned between Amendment 80 cooperatives and the Amendment 80 limited access fishery (Figure 1). Amendment 80 cooperatives receive an exclusive harvest privilege, cooperative quota (CQ), for each species, which the cooperatives are prohibited from exceeding; NMFS retains management authority of the Amendment 80 limited access fishery.⁶ Since 2011, all participants in the Amendment 80 sector have been members of a cooperative.

3.2 Alternative 2

As described in Figure 1, under the status quo, OFL, ABC, TAC, and fishery allocations are established for each of the three flatfish species in the annual harvest specifications process. The Council cannot establish a TAC that is higher than the ABC for any species, but frequently for these three flatfish species, the TAC is set lower than the ABC, sometimes substantially so. Fishery allocations to the various sectors are determined based on regulations that were established in the development of the CDQ and Amendment 80 programs.

Under Alternative 2, the annual harvest specifications process would continue unchanged, and allocations of each flatfish species would be made at the beginning of the fishing year. However, a system would be set up to allow Amendment 80 cooperatives and CDQ groups, during the course of the fishing year, to access yellowfin sole, rock sole, or flathead sole ABC that may be available in excess of the TAC. No entity would be able to access any amount in excess of the ABC, so there would not be a biological or conservation concern with the proposed approach. Also, any entity wanting to access the ABC surplus for a particular flatfish species (e.g., yellowfin sole) would need to exchange an equivalent amount of existing quota for another of the three flatfish species (e.g., rock sole or flathead sole). This would ensure that the entity remained within its aggregated quota limits, and thus guarantee that the overall groundfish optimum yield for the BSAI would not be exceeded.

Only Amendment 80 cooperatives and CDQ groups would be eligible, as only those entities have been assigned an exclusive catch and use privilege, and have the requisite infrastructure to manage their own quotas. An entity would also need to have more than one of these flatfish species allocated to it, so there is no net gain in TAC. The BSAI trawl limited access sector is only allocated yellowfin sole.

Exchanges would be processed in a manner similar to inter-cooperative transfers, with built-in limits for how much quota may be exchanged. At the beginning of each year, NMFS would calculate the amount of ABC surplus to which each entity would have access. Table 1 illustrates how this process would work. For each of the three species, flathead sole, rock sole, and yellowfin sole, the agency would first calculate whether there is an ABC surplus, by subtracting the TAC from ABC. If there is a surplus, this would then be allocated amongst eligible entities. As with the existing harvest specifications process, the CDQ program would be allocated 10.7% of the ABC surplus, which would become their ABC reserve.

⁶ The methodology and rationale for apportioning the TAC among the CDQ, ICA, Amendment 80 sector, and BSAI trawl limited access fishery, as well as allocations to Amendment 80 cooperatives and the Amendment 80 limited access fishery are detailed in the proposed rule for the Amendment 80 Program (May 30, 2007; 72 FR 30061).

The remaining portion of the ABC surplus would be assigned among eligible cooperatives, in proportion to the cooperative's share of each individual flatfish species. This is the same formula that is currently used for allocating their share of TAC to the Amendment 80 cooperatives. Table 1 illustrates the process with 2013 values, and results in an ABC reserve value for each flatfish species, for each of the two Amendment 80 cooperatives in 2013.

Table 1 Proposed process for calculating the ABC reserves for flathead sole, rock sole, and yellowfin sole, for Amendment 80 cooperatives and CDQ groups, illustrated with 2013 values (mt).

	ABC	TAC	ABC surplus	Assignment of ABC surplus to user groups					
				CDQ ABC reserve	A80 Cooperative ABC reserve	ASC % of CQ	AGC % of CQ	ASC ABC reserve	AGC ABC reserve
				10.7% of ABC surplus	89.3% of ABC surplus	% of A80 CQ initially assigned to each cooperative			
Flathead sole	67,900	22,699	45,201	4,837	40,364	80.5%	19.5%	32,482	7,883
Rock sole	214,000	92,380	121,620	13,013	108,607	71.9%	28.1%	78,122	30,484
Yellowfin sole	206,000	198,000	8,000	856	7,144	57.6%	42.4%	4,112	3,032

A80 = Amendment 80, ABC = acceptable biological catch, AGC = Alaska Groundfish Cooperative, ASC = Alaska Seafood Cooperative, CDQ = community development quota program, CQ = cooperative quota, TAC = total allowable catch

Once these ABC reserves are calculated and entered into the account balance tracking system, they may be accessed by the relevant cooperative or the CDQ program through an online exchange. While this exchange would be modeled on an inter-cooperative transfer, there would also need to be changes. Inter-cooperative transfers are designed for transferring quota for an individual species from one account to another. Under Alternative 2, transfers for two species would need to be linked. A request to transfer from the ABC reserve into an entity's quota account for one species would necessarily be linked with a transfer of a different flatfish species out of the entity's quota account, in order to ensure that the overall cooperative quota assigned to that entity would not be exceeded.

An example of how such an exchange might proceed is provided in Table 2. In this case, an Amendment 80 cooperative is assumed to want additional access to yellowfin sole, for which it is willing to forego a portion of its flathead sole allocation. The transfer of 4,112 mt of yellowfin sole from the cooperative's ABC reserve account into the cooperative's quota account is coupled with a transfer of 4,112 mt of flathead sole out of the cooperative quota account, and a corresponding increase in the flathead sole ABC reserve. No net change in the total flatfish available to the cooperative would arise, but the cooperative would give up flathead sole to gain additional access to yellowfin sole.

Table 2 Fictional illustration of proposed approach, for an Amendment 80 cooperative

Account	Flatfish species	Starting cooperative quota or reserve amount	Mid-year transfer	Ending cooperative quota or reserve amount
Amendment 80 cooperative CQ	Flathead sole	20,506	-4,112	16,394
	Rock sole	48,691		48,691
	Yellowfin sole	81,776	+4,112	85,888
Amendment 80 cooperative ABC reserve	Flathead sole	32,482	+4,112	36,594
	Rock sole	78,122		78,122
	Yellowfin sole	4,112	-4,112	0

The approach that is proposed in Alternative 2 would allow Amendment 80 cooperatives and CDQ groups access to flathead sole, rockfish, or yellowfin sole in excess of the TAC, subject to the ABC reserve that prevents the ABC of any species being exceeded. The increase of one quota and decrease of

another quota would also prevent any additional risk of exceeding the overall 2 million mt optimum yield cap.

NMFS will publish on the Alaska Region website the amount of the ITAC (TAC minus CDQ reserve) and the ABC reserve amount allocated to each Amendment 80 cooperative (Table 1). If only one Amendment 80 cooperative is active for a year, then the full 89.3% of the Amendment 80 ABC reserve is available for that cooperative to access. No amount of the Amendment 80 ABC reserve will be available for the Amendment 80 limited access sector. Also, the amount of prohibited species catch (PSC) CQ allocated to an Amendment 80 cooperative under 50 C.F.R. 679.91(d) and (e) will not change from the amounts based on the Amendment 80 species allocations published in the final BSAI harvest specifications. NMFS would also track TACs pre- and post-season, to determine the extent to which exchanges are being utilized.

The approach that is included in this alternative would require regulatory changes, which would need to be implemented independent of the annual harvest specification process, and also at the beginning of the harvest specification process for the next year (for example, October 2014 for the 2015 fishing year). It is likely that the Council would need to recommend, and the agency to approve, additional language in specifying the annual TACs for these species to allow sufficient flexibility for the exchanges that are proposed under this approach to proceed. This could take the form of the Council explicitly recommending the ABC surplus or ABC reserve for the three flatfish species, as part of its specification of annual TACs. During the course of the year, the agency may have to make an inseason adjustments whenever exchanges are made by the Amendment 80 cooperatives or CDQ groups. This involves reissuing the TAC tables via Federal Register notice, a practice that is also undertaken by the agency when allocating the nonspecified reserve to a particular target species, or effecting a rollover of allocations among sectors.

Allocation to CDQ groups

Section 305(i)(1)(B) of the MSA requires the allocation (for directed and nontarget catch) of 10.7 percent of the flathead sole, rock sole, and yellowfin sole fisheries to the CDQ program. The MSA also requires that these allocations not be exceeded, and that “the harvest of allocations under the program for fisheries with individual quotas or fishing cooperatives shall be regulated by the Secretary in a manner no more restrictive than for other participants in the applicable sector, including with respect to the harvest of nontarget species.”

At the October and December Council meetings, during the harvest specifications process, the Council will consider the Advisory Panel recommendations and public comment for setting the TAC, by species, in the BSAI. The Council will be provided the ABCs from the SSC, TAC recommendations from the Advisory Panel and public comment, and then will be able to calculate the ABC surplus (the amount of the ABC minus the TAC) for flathead sole, rock sole, and yellowfin sole. A table will be published in the proposed and final harvest specifications that lists the ABC surplus amounts for each of these three flatfish species, and the amounts that represent the allocation of 10.7 percent of the ABC surplus amount to the CDQ program as the CDQ ABC reserve, and 89.3 percent to the Amendment 80 cooperatives as ABC reserves for each cooperative (see illustrative values for 2013 in Table 1).

The CDQ program allocation equals 10.7 percent of the TAC plus 10.7 percent of the ABC reserve, or 10.7% of the total amount available in each of the three flatfish fisheries. This meets the requirement of the MSA, as the CDQ groups receive access to 10.7 percent of the total amount available for flathead sole, rock sole, and yellowfin sole. The CDQ reserve and CDQ ABC reserve amounts are then allocated to the individual CDQ groups in accordance with the requirements of the MSA. Of the 10.7% of these target species that is allocated to the CDQ program, 10 percent is allocated in fixed percentages, while the

remaining 0.7 percent is allocated among CDQ groups based on the percentage allocations agreed on by the Western Alaska Community Development Association Board of Directors (WACDA), serving in its capacity as the CDQ Program Panel. WACDA would have the discretion to decide how to allocate the 0.7% of the CDQ's ABC reserve that the Panel is authorized to allocate, under section 305(i)(1)(C) of the Magnuson-Stevens Act (16 U.S.C. 1855(i)(1)(C)), to each of the six CDQ groups. For the purposes of this analysis, however, we assume that under both methodologies, the ABC reserve for each species would be allocated among groups in an identical manner to how target species are allocated. NMFS will publish on the Alaska Region website the amount of the 10.7 percent of the TAC and the ABC reserve amount allocated to each CDQ group. Table 3 provides an example using the 2013 harvest specification amounts.

Table 3 Illustration of CDQ Program quota categories, target CDQ reserves, allocation percentages, and group quotas, using 2013 values

Groundfish species	2013 TAC and ABC reserve	Program allocations	CDQ Reserve	Target and effective percentage allocations						CDQ Group Amounts					
				APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
				mt	percentage	mt									
Yellowfin Sole	198,000	0.10	19,800	28%	24%	8%	6%	7%	27%	5,544	4,752	1,584	1,188	1,386	5,346
		0.007	1,386	24%	23%	8%	11%	11%	23%	327	317	111	158	158	315
		combined	21,186	28%	24%	8%	6%	7%	27%	5,871	5,069	1,695	1,346	1,544	5,661
ABC Reserve	8,000	10.70	856	28%	24%	8%	6%	7%	27%	237	205	69	54	62	229
Rock Sole	92,380	0.10	9,238	24%	23%	8%	11%	11%	23%	2,217	2,125	739	1,016	1,016	2,125
		0.007	647	25%	23%	7%	10%	10%	24%	162	149	48	65	67	155
		combined	9,885	24%	23%	8%	11%	11%	23%	2,379	2,274	787	1,081	1,083	2,280
ABC Reserve	121,620	10.70	13,013	25%	23%	7%	10%	10%	24%	3,250	3,000	975	1,317	1,357	3,114
Flathead Sole	22,699	0.10	2,270	20%	21%	9%	15%	15%	20%	454	477	204	340	340	454
		0.007	159	21%	22%	7%	15%	14%	21%	33	36	11	23	23	33
		combined	2,429	20%	21%	9%	15%	15%	20%	487	512	215	364	363	487
ABC Reserve	45,201	10.70	4,837	21%	22%	7%	15%	14%	21%	1,002	1,078	345	710	696	1,005
Total TAC			33,499							8,737	7,855	2,698	2,791	2,991	8,428
Total ABC Reserve			18,706							4,490	4,283	1,389	2,081	2,116	4,347

A CDQ group may choose to make use of the flatfish flexibility program. The group may choose to transfer a portion of the TAC they will not harvest, species 1, for an amount of their CDQ ABC reserve that they will harvest, species 2. Using 2013 harvest specifications for this example, there are CDQ ABC reserves that are higher than the CDQ TAC allocation. However, the group may only access as much of the CDQ ABC reserve that the group is allocated and is willing to exchange for their CDQ TAC allocation, as would be the case for each Amendment 80 cooperative. NMFS will pursue the ability for the CDQ to make these transfers on the web-based application currently in place for quota management.

3.3 Alternative 3

Operationally, Alternative 3 is very similar to Alternative 2, with one primary exception. After the ABC surplus (i.e., the difference between ABC and TAC) for flathead sole, rock sole, and/or yellowfin sole has been determined, the Council may decide to set aside a portion of the ABC surplus as a buffer for socioeconomic and/or biological considerations. The remaining amount would be the ABC reserve amount (ABC minus TAC minus the socioeconomic/biological amount), and this ABC reserve would be allocated between Amendment 80 cooperatives and the CDQ program, as outlined in Alternative 2. Eligible entities would be able to exchange their flathead sole, rock sole, and/or yellowfin sole quota

share for an equivalent amount of their allocation of the ABC reserve for flathead sole, rock sole, and/or yellowfin sole. Table 4 provides an example illustrating the Alternative 3 approach with 2013 values. A similar table would be published as part of the harvest specifications process. The table illustrates 2013 OFL, ABC, TAC; a place holder for the Council buffer; the ABC reserve, the CDQ ABC reserve (10.7 percent), and the Amendment 80 Cooperative ABC reserve (89.3 percent) amounts. The CDQ and Amendment 80 Cooperative ABC reserves would be further allocated among the CDQ groups, and the Amendment 80 cooperatives, as appropriate (and as described under Alternative 2).

Table 4 Proposed approach for calculating the ABC reserves with a Council buffer, under Alternative 3, illustrated with 2013 values (mt).

Species	OFL	ABC	TAC	Council buffer	ABC reserve	CDQ ABC reserve	Amendment 80 Cooperative ABC reserve
				Expressed as % or mt	= ABC-TAC- (% Council buffer x (ABC-TAC)) = ABC-TAC-Council buffer	10.7% of ABC reserve	89.3% of ABC reserve
Yellowfin sole	220,000	206,000	198,000	0% or 0 mt	8,000	856	7,144
Rock sole	241,000	214,000	92,380	0% or 0 mt	121,620	13,013	108,607
Flathead sole	81,500	67,900	22,699	0% or 0 mt	45,201	4,837	40,364

The Council would need to identify the ABC reserve for flathead sole, rock sole, and yellowfin sole annually as part of its harvest specification recommendations. The Council would also annually need to provide some rationale for choosing (or not choosing) a Council buffer. **If the Council ultimately chooses Alternative 3 as its preferred alternative, it would be helpful to articulate a rationale or sample criteria the Council may use to guide whether it is necessary to incorporate a buffer in the ABC reserve in a particular year, and if so at what level.** For example, the Council may wish to obviate the need for a more conservative ICA by restricting eligible entities from taking the full amount of the ABC surplus. Alternatively, the Council may wish to respond to market conditions by restricting the harvestable amount for a particular species. By being as explicit as possible in their rationale for the need for the restricted flexibility proposed in Alternative 3 in this action, the Council can hopefully help to streamline the justification and rulemaking process for the annual harvest specifications.

3.4 Options

Option 1 addresses the potential issue of having entities make numerous exchanges within a year. In order to reduce any potential administrative burden on NMFS, it may be worthwhile considering a limit on the number of times an entity may exchange with the reserve during the course of a year. Such a limit may also be appropriate for management purposes.

Additionally, the analysis includes two options to restrict flexibility in the exchange of yellowfin sole, if the analysis shows that there is a potential negative impact of the approach on users of yellowfin sole in the BSAI trawl limited access sector.

Option 2 would allow only a one-way exchange for yellowfin sole. Yellowfin sole may be used to “create” additional flathead sole or rock sole TACs, but yellowfin sole TAC may not be “created” from flathead sole or rock sole.

Option 3 would limit the amount of yellowfin sole that each entity could “create” from flathead sole or rock sole by exchanging with the surplus, regardless of how much yellowfin sole surplus is actually available. The range of 5,000 mt to 25,000 mt was provided by the Council as an appropriate range to evaluate in the initial review draft, based on a review of the five years of data (2008 to 2012) since the implementation of Amendment 80. In only 2 of those years was there a significant ABC surplus of yellowfin sole. In the highest year, 2011, the yellowfin sole ABC surplus of 43,000 mt would have been

allocated as follows: 4,600 mt to the CDQ program, and 16,300 mt and 22,100 mt, respectively, to the Amendment 80 cooperatives.

3.5 Alternatives Considered but not Further Analyzed

For the first iteration of the discussion paper, the Council requested that staff review the nonspecified reserve in the Amendment sector as a means of increasing flexibility in the harvest of flatfish species. In the February 2011 discussion paper, this proposal was dismissed. The nonspecified reserve is used as a necessary management buffer to ensure that TACs are not exceeded in an open access fishery, and is incompatible with exclusive harvest privileges.

The February 2011 discussion paper suggested an alternative approach, which proposed an aggregate flatfish TAC for the Amendment 80 cooperatives, and would allow Amendment 80 cooperatives to exchange some pre-determined percentage of their cooperative quota among flatfish species. The downfall of this approach is that, to avoid exceeding the ABC in all years, the percentage would likely need to be reconsidered annually with specific analysis and rulemaking, which adds impractical complexity to the annual harvest specifications process.

The February 2012 discussion paper suggested creating a new, aggregate “flatfish complex” as part of the Amendment 80 CQ or CDQ allocations, for the harvest of flathead sole, rock sole, and yellowfin sole. At the same time, a new type of quota category would have been created for the three species: the “individual biological limit”, or IBL. The purpose of creating the IBL was to ensure that the ABCs for these individual species were not exceeded. This approach met with some difficulties with respect to tracking in the catch accounting system, and other avenues were pursued.

4 Description of the Fisheries

4.1 Amendment 80 sector

The Amendment 80 program allocates several BSAI non-pollock trawl groundfish species among trawl fishery sectors and facilitates the formation of harvesting cooperatives in the non-AFA trawl catcher/processor sector. The program was designed to meet the broad goals of: (1) improving retention and utilization of fishery resources by the non-AFA trawl catcher/processor fleet by extending the groundfish retention standard to all non-AFA trawl catcher/processor vessels; (2) allocating fishery resources among BSAI trawl harvesters in consideration of historical and present harvest patterns and future harvest needs; (3) establishing a limited access privilege program (LAPP) for the non-AFA trawl catcher/processors and authorizing the allocation of groundfish species to harvesting cooperatives, to encourage fishing practices with lower discard rates and to improve the opportunity for increasing the value of harvested species while lowering costs; and (4) limiting the ability of non-AFA trawl catcher/processors to expand their harvesting capacity into other fisheries not managed under a LAPP.

Each year, NMFS allocates an amount of Amendment 80 species available for harvest, called the initial total allowable catch (ITAC), and crab and halibut PSC, to two defined groups of trawl fishery participants: (1) the Amendment 80 sector; and (2) the BSAI trawl limited access sector. The ITAC is the amount of the TAC remaining after allocations to the Western Alaska Community Development Quota Program (CDQ) and incidental catch allowance for use by the non-CDQ and non-Amendment 80 sectors. The BSAI trawl limited access sector comprises all trawl participants who are not part of the Amendment 80 sector (i.e., AFA trawl catcher/processors, AFA trawl catcher vessels, and non-AFA trawl catcher vessels). Allocations made to one sector are not subject to harvest by participants in the other fishery sector, except under a specific condition (i.e., fish that are allocated to the BSAI trawl limited access

sector and ICA and projected to be unharvested can be reallocated to Amendment 80 cooperatives by NMFS, throughout the year, to ensure a more complete harvest of the TAC).

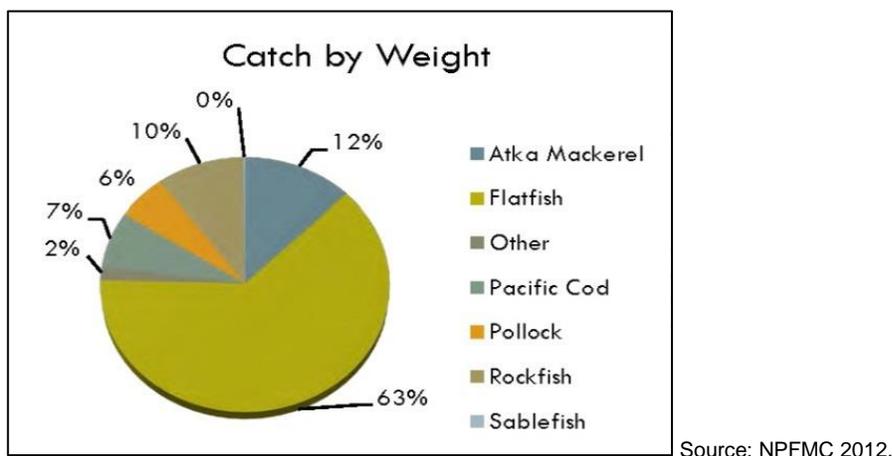
The amount of ITAC assigned to the Amendment 80 and the BSAI trawl limited access sectors was based on a review of historical catch patterns during 1998 through 2004, with consideration given to various socioeconomic factors. As an example, a greater proportion of the Atka mackerel and Aleutian Islands Pacific ocean perch (AI POP) was assigned to the BSAI trawl limited access sector, than is reflected in historical catch records by that sector from 1998 through 2004. One exception to this practice applies to Pacific cod. Pacific cod ITAC is allocated to the Amendment 80 sector under the criteria that the Council adopted for Amendment 85, in April 2006. NMFS published a final rule implementing Amendment 85 in September 2007 (72 FR 50788) and Amendment 85 and Amendment 80 were fully implemented in 2008. The rationale for Pacific cod allocation to the Amendment 80 sector is described in comments on the final rule.

Annually, NMFS determines the division of the Amendment 80 sector's ITAC within the sector, based on quota share holdings of sector members. Depending on a quota share holder's choice, the portion of the TAC associated with that person's quota share is assigned to either a cooperative or a limited access fishery, based on where the vessel owner assigns the vessel. Owners of multiple vessels may choose to assign each vessel independently to a cooperative or to the limited access fishery, depending on the perceived benefits of those choices for each specific vessel. In general, if a person who holds one percent of the Amendment 80 quota share for a given species assigns that quota share to a cooperative, one percent of that species TAC would be assigned to that cooperative for that year. Crab and halibut PSC limits in the BSAI are allocated to the Amendment 80 and BSAI trawl limited access sectors and within the Amendment 80 sector in a similar manner. The PSC limits assigned to the Amendment 80 sector were lowered in a stepwise fashion, from 2008 to 2012, to provide additional reductions in PSC over time.⁷ If there are multiple cooperatives in the sector, the cooperatives have the ability to transfer quota share between them.

Currently, there are 21 catcher processors that participate in the Amendment 80 program in the BSAI, organized into two cooperatives. Amendment 80 vessels also act as motherships, and process catch delivered from other vessels outside the sector. Figure 2 provides an illustration of the total catch composition of groundfish harvested on Amendment 80 vessels in 2011, by weight. Flatfish represent approximately 63% of the total catch by weight.

⁷ See Tables 35 and 36 to part 679 at: www.alaskafisheries.noaa.gov/regs/default.htm

Figure 2 Total catch composition of groundfish for Amendment 80 vessels in 2011, by weight.



Since the implementation of the program, the Amendment 80 sector has substantially increased its retained catch of groundfish, including flatfish, and especially the primary three flatfish target species (Table 5). Prior to Amendment 80, the character of the fishery was primarily a race for fish, as short seasons were closed down by reaching the halibut PSC limit. Under the program, the sector has extended to year-round fishing, participating both in traditional target fisheries, as well as targeting other flatfish species for which halibut PSC was not previously available. Given the Council’s recent action to allow vessel replacement in this sector, there will likely be two to three new vessels brought into the fishery in the near future⁸, further improving the efficiency of the fleet.

Table 5 Total and retained groundfish catch in the Amendment 80 sector, 2003 to 2012.

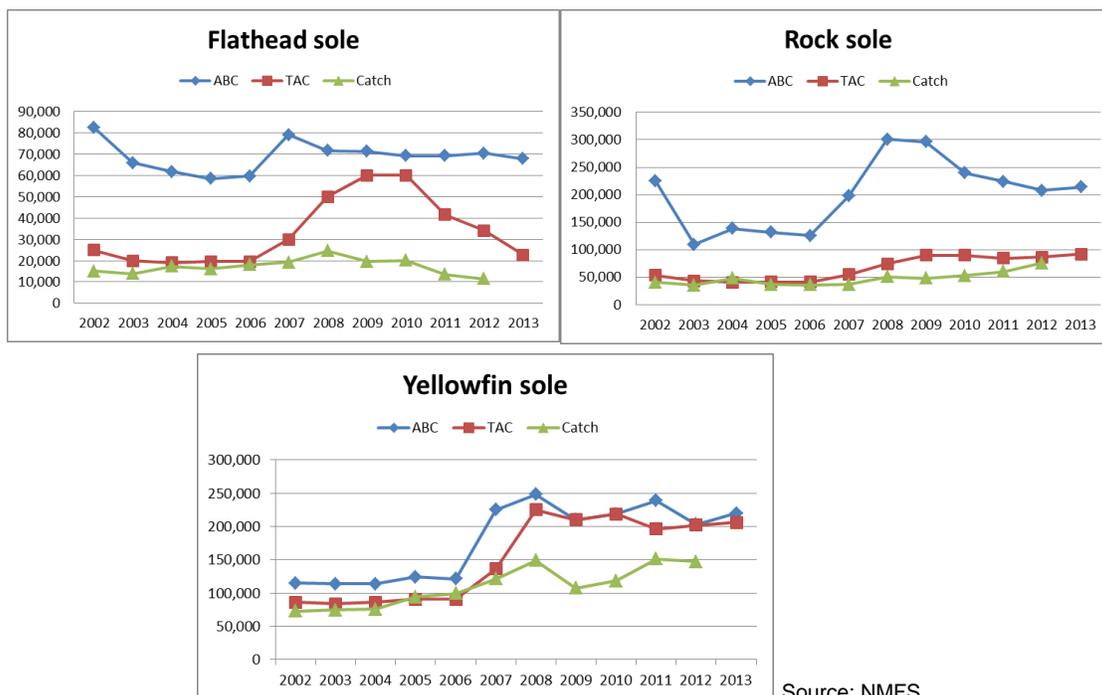
Year	All groundfish		All flatfish		Flathead sole, rock sole, and yellowfin sole	
	Total catch	% retained	Total catch	% retained	Total catch	% retained
2003	281,268	71%	141,210	70%	118,729	78%
2004	313,942	68%	155,510	64%	128,420	73%
2005	300,903	78%	158,443	76%	132,878	84%
2006	295,028	79%	156,498	76%	130,657	87%
2007	317,658	78%	172,326	74%	144,713	85%
2008	352,720	89%	230,719	89%	192,662	95%
2009	328,841	90%	190,548	90%	146,768	94%
2010	353,929	91%	216,762	91%	163,589	96%
2011	348,395	93%	224,468	94%	174,652	98%
2012	345,739	94%	224,831	95%	179,107	97%

⁸ Jason Anderson, personal communication, 1/22/2013.

4.1.1 Flathead Sole, Rock Sole, and Yellowfin Sole Targets

Figure 3 illustrates ABC, TAC, and total catch for flathead sole, rock sole, and yellowfin sole for 2002 to 2012. Table 6 lists specific values for 2008 to 2013, and identifies catch among the various entities to which TAC is apportioned. Typically, the TACs for flathead sole and rock sole are set well below the ABC. Over the 2008 to 2013 time period, the yellowfin sole TAC has mostly been set at or close to the ABC, except in 2011. In harvest specifications for the most recent two years, TAC was again set almost at the ABC. Flatfish TACs are allocated among CDQ groups, Amendment 80 cooperatives, and the BSAI trawl limited access sector according to specified formulas⁹. Typically, not all of the three flatfish TACs have been fully harvested (Table 6), primarily due to limitations associated with halibut PSC, and, more recently, Pacific cod incidental catch. Since the implementation of Amendment 80, catches of rock sole and yellowfin sole have increased substantially.

Figure 3 ABC, TAC, and total catch for flathead sole, rock sole, and yellowfin sole, 2002 through 2013.



⁹ As described in Section 3.1, there is also a portion of the TAC that is reserved for an incidental catch allowance for catch in the non-CDQ and non-Amendment 80 sectors.

Table 6 ABC, TAC, and total catch, by sector, of BSAI flathead sole, rock sole, and yellowfin sole, 2008 through 2013.

Species and year	ABC	TAC	Total Catch									
			Amendment 80: Best Use Cooperative ² / Alaska Seafood Cooperative ³		Amendment 80: limited access ⁴ / Alaska Groundfish Cooperative ⁵		Total Amd 80	BSAI trawl limited access		CDQ Program (divided among 6 CDQ groups)		Incidental Catch Allowance ¹
			Catch	% of cooperative's year-end TAC ⁶	Catch	% of ltd access/ cooperative's year-end TAC ⁶	Catch as % of combined Amd 80 year-end TAC	Catch	% of limited access' year-end TAC ⁶	Catch	% of CDQ sector's TAC	Catch
Flathead sole												
2008	71,700	50,000	16,931	47%	*	*	*			500	9%	*
2009	71,400	60,000	12,031	28%	1,893	33%	28%			508	8%	2,535
2010	69,200	60,000	13,913	32%	611	11%	30%			943	15%	1,061
2011	69,300	41,548	6,964	23%	461	20%	23%			674	15%	2,575
2012	70,400	34,134	5,472	24%	318	14%	23%			506	14%	2,662
2013	67,900	22,699										
Rock sole												
2008	301,000	75,000	34,982	74%	*	*	*			1,917	24%	*
2009	296,000	90,000	33,668	59%	3,923	21%	50%			893	9%	10,232
2010	240,000	90,000	44,558	76%	4,693	27%	64%			1,337	14%	2,634
2011	224,000	85,000	42,388	76%	5,071	33%	67%			3,306	36%	9,867
2012	208,000	87,000	46,656	89%	14,212	94%	90%			6,167	66%	9,063
2013	214,000	92,380										
Yellowfin sole												
2008	248,000	225,000	84,853	86%	*	*	*	19,382	44%	7,671	32%	*
2009	210,000	210,000	69,564	79%	23,279	40%	61%	10,394	27%	1,741	8%	5,126
2010	219,000	219,000	74,022	67%	21,003	35%	56%	19,485	46%	3,053	13%	4,659
2011	239,000	196,000	85,418	95%	21,487	42%	76%	25,375	74%	16,308	78%	5,457
2012	203,000	202,000	85,216	92%	16,791	34%	72%	28,498	79%	14,016	65%	5,090
2013	206,000	198,000										

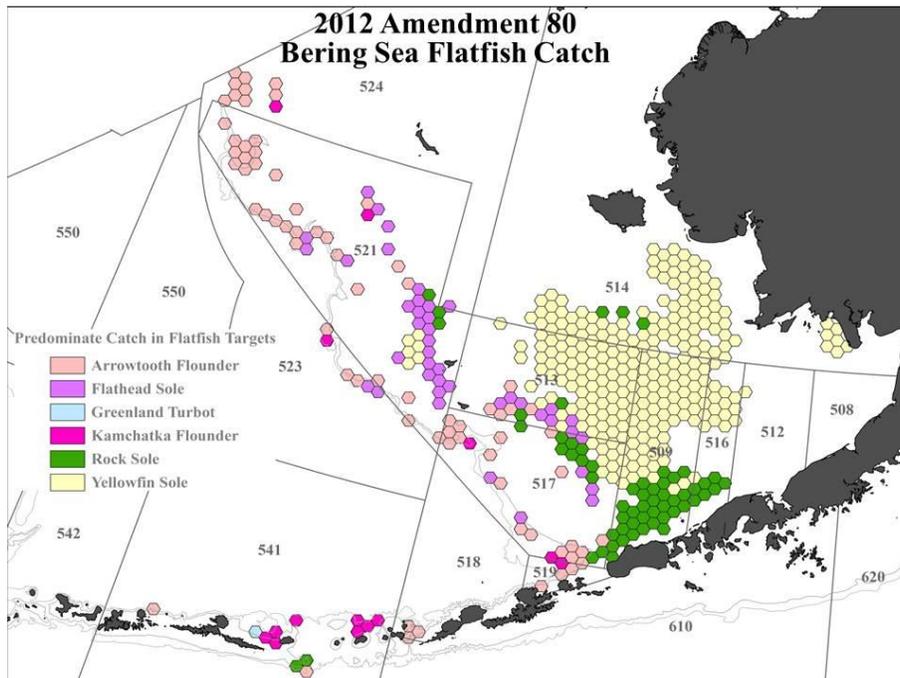
¹Note, a portion of the TAC is also reserved as an incidental catch allowance (ICA) for all incidental catch of these species in non-Amendment 80 (including directed BSAI trawl limited access for yellowfin sole) and non-CDQ fisheries.
²2008-2009; ³2010-2011; ⁴2008-2010; ⁵2011. Essentially, the same vessels are represented in each column.
⁶Catch as a proportion of the sector's final quota at the end of the year; may include reallocations from the ICA or BSAI trawl limited access sector, and/or transfers between Amendment 80 cooperatives.
 * confidential data
 Source: NMFS

4.1.2 Seasonal and Temporal Patterns of Flatfish Fishing

Figure 4 shows the distribution of Amendment 80 flatfish catch in the BSAI, by target. Yellowfin sole are fished predominately on the Bering Sea shelf, while flathead sole are fished in deeper waters, closer to the shelf break. Rock sole are primarily targeted immediately north of the western end of the Alaska Peninsula. Figure 5 provides an illustration of the seasonal pattern of catch by the Amendment 80 sector in the BSAI, for the years 2008 through 2012. Note, the significant decline in catch in July is attributable to Amendment 80 vessel participation in the GOA rockfish fisheries. Of the allocated flatfish targets, rock sole is mainly prosecuted in the first months of the year, when the fish can be found in spawning aggregations and have roe. Yellowfin sole is prosecuted in spring and early summer, and resumes again after the GOA rockfish fishery in the late summer and fall. In recent years, the target fishery for flathead sole has not been comprehensively pursued, as incidental catch of other constraining species has been high. Management measures that went into effect in 2011 to protect the Endangered Species Act-listed Western distinct population segment of the Steller sea lion, have constrained the Aleutian Islands Atka mackerel and Pacific cod fisheries that have typically been targeted by the Amendment 80 sector.¹⁰

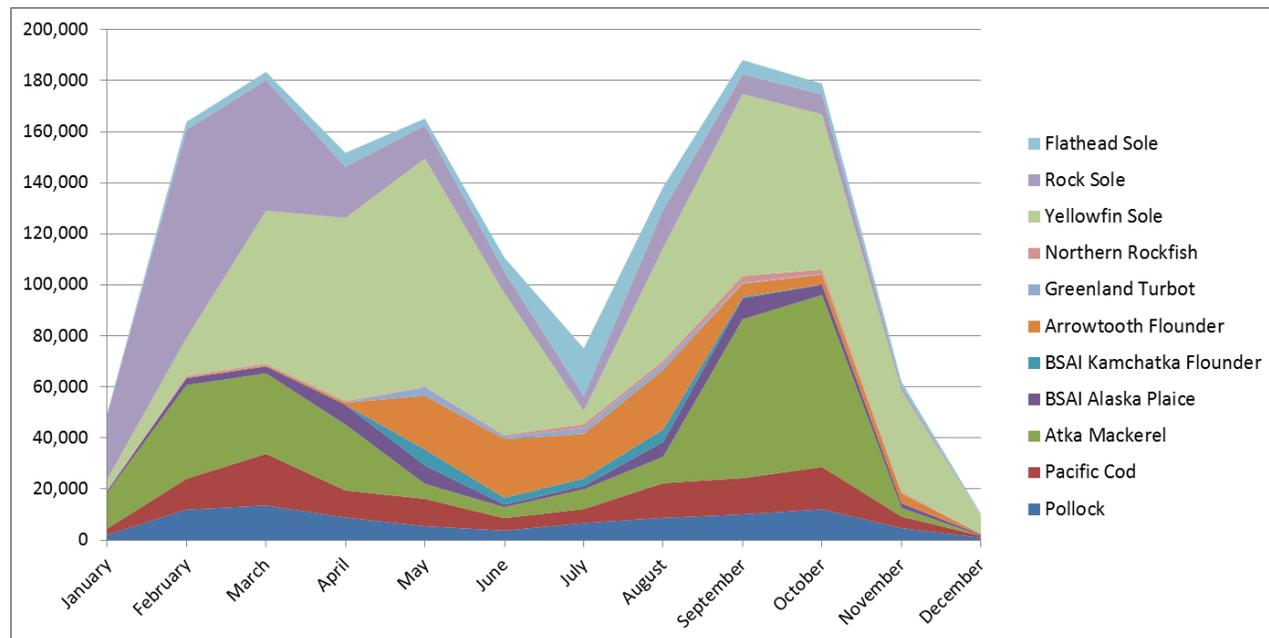
¹⁰ See Interim Final Rule to implement Steller sea lion protection measures (December 13, 2010; 75 FR 77535).

Figure 4 Distribution of flatfish species caught by trawl gear in the BSAI, 2012.



Source: NMFS.

Figure 5 BSAI groundfish total catch by Amendment 80 vessels, summed for 2008 through 2012, by month.



Source: AKFIN.

4.1.3 Catch Composition of Flatfish Fisheries

The flatfish fisheries are multispecies fisheries, in which incidental catch species are often an important component of the catch. Table 7 summarizes the catch composition in the yellowfin sole target fishery, which is the most important flatfish fishery by volume, for the combined years 2008 through 2012. While

catch composition varies by month, the primary incidental catch species in the yellowfin sole fishery, by volume, are Pacific cod, Alaska plaice, pollock, and rock sole. Flathead sole, arrowtooth flounder, and other flatfish are also caught incidentally, along with very small amounts of other species.

Table 7 Catch composition in the yellowfin sole target fishery, for combined years 2008 through 2012.

Species	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Yellowfin Sole	2,557	11,607	53,469	64,259	87,835	54,581	3,189	34,774	68,849	59,587	39,678	7,431
Pacific Cod	256	480	1,951	5,749	6,642	2,863	670	7,729	10,446	13,312	4,271	906
Alaska Plaice	196	1,446	5,719	11,592	10,767	1,429	173	4,118	9,559	6,255	3,182	665
Pollock	150	614	3,019	3,862	2,707	59	93	1,681	6,721	10,627	3,988	785
Rock Sole	59	813	3,720	5,480	8,003	5,159	684	6,369	5,760	4,655	990	322
Flathead Sole	85	662	1,075	1,218	621	5	51	1,214	3,370	3,844	1,636	283
Arrowtooth Flounder	14	68	124	121	22	6	28	333	1,849	3,724	1,601	246
Other Flatfish	1	19	130	504	1,974	1,978	121	32	7	3	3	2

Source: AKFIN.

Incidental catch composition in the yellowfin sole target fishery is not consistent by month, nor is it consistent in the same month from year to year. Especially for incidental catch species that are also hard capped, this can result in a management challenge as vessels try to predict which incidental catch species will be needed to prosecute the yellowfin sole fishery later into the year. Table 8 demonstrates interannual variability by month in the incidental catch composition of rock sole in the yellowfin target fishery. For example, note that in August and September 2010, rock sole catch was higher than in the following year. As rock sole can be difficult to target later in the year, fishermen who curtailed their rock sole fishing early in the year in order to have sufficient quota share available for yellowfin sole fishing in the later months, may have been left with stranded rock sole quota share.

Table 8 Rock sole as a proportion of total groundfish in the yellowfin sole target fishery, by month, 2008 through 2012.

	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
2008	4%	7%	6%	3%	9%	4%	19%	4%	5%	4%	3%	3%	5%
2009	*	2%	5%	5%	4%	4%	21%	11%	6%	4%	1%		6%
2010	2%	6%	11%	7%	4%	8%	13%	17%	13%	6%	2%	*	7%
2011		2%	3%	4%	7%	12%	11%	12%	5%	4%	2%	2%	5%
2012	1%	*	10%	9%	8%	5%	*	9%	3%	6%	1%	5%	5%

* confidential; Source: AKFIN.

Table 9 provides Amendment 80's utilization of Pacific cod, halibut PSC, and red king crab PSC, since the program's inception in 2008. The first two of these species have been constraining at times for the Amendment 80 sector. With the implementation of the program, Amendment 80 cooperatives have prioritized becoming more efficient with their halibut PSC allowance, and have substantially decreased their rate of halibut PSC per mt of groundfish. Pacific cod are also caught in all target flatfish fisheries, and since 2008, the sector's allocation of cod has proven to be more constraining than halibut PSC on target flatfish fisheries, as is evident from the higher utilization rates.

A further constraint may come from red king crab PSC limits in Zone 1, which affect the rock sole fishery. In 2012, the red king crab PSC limit for all groundfish fisheries was lowered, due to the crab stock meeting a lower biomass threshold. Based on red king crab interception in 2011, this lower limit could have been constraining; however, vessels were able to avoid red king crab, and PSC usage ended up being substantially lower in 2012. Note, there is also a regulatory requirement that no more than 25% of the total BSAI trawl red king crab PSC limit may be taken by non-pelagic trawl vessels in the Red King Crab Savings Subarea; Table 9 also illustrates combined Amendment 80 catch in the Red King Crab Savings Subarea. While triggering the limit did close the area prior to the implementation of Amendment 80, this limit has not been constraining in recent years.

Table 9 Catch of Pacific cod and halibut and red king crab prohibited species catch (PSC), 2008 through 2012, for the Amendment 80 sector.

Species	Year	Amendment 80 allowance	Amendment 80: Best Use Cooperative ¹ / Alaska Seafood Cooperative ²		Amendment 80: limited access ³ / Alaska Groundfish Cooperative ⁴		Combined Amendment 80	
		mt	Catch	% of cooperative's allocation ⁵	Catch	% of ltd access/ cooperative's allocation ⁵	Catch	Catch as % of combined Amd 80 year-end TAC
Pacific cod	2008	20,429	13,518	79%	*	*	*	*
	2009	24,125	19,637	95%	2,025	58%	21,662	90%
	2010	24,028	20,023	99%	4,005	121%	24,028	100%
	2011	27,277	21,143	91%	3,599	89%	24,742	91%
	2012	33,232	23,917	85%	4,074	81%	27,991	84%
Halibut PSC	2008	2,525	1,293	70%	*	*	*	*
	2009	2,475	1,496	83%	577	85%	2,073	84%
	2010	2,765	1,668	80%	587	87%	2,255	82%
	2011	2,375	1,323	77%	488	73%	1,811	76%
	2012	2,325	1,501	87%	444	73%	1,945	84%
Red king crab (RKC) PSC (BSAI)	2008	109,915	48,960	62%	29,460	94%	78,420	71%
	2009	104,427	50,406	68%	9,023	30%	59,429	57%
	2010	146,920	48,624	41%	5,693	20%	54,317	37%
	2011	130,432	24,557	26%	6,407	18%	30,964	24%
	2012	43,293	13,378	49%	10,785	68%	24,163	56%
RKC PSC within the Red King Crab Savings Subarea ⁶	2008	49,250					26,528	54%
	2009	49,250					11,513	60%
	2010	49,250					14,620	30%
	2011	49,250					10,238	21%
	2012	24,250					5,345	22%

¹ 2008-2009; ² 2010-2011; ³ 2008-2010; ⁴ 2011. Essentially, the same vessels are represented in each column.

⁵ Catch as a proportion of the cooperative's final allocation at the end of the year; may include reallocations from the ICA or BSAI trawl limited access sector, and/or transfers between Amendment 80 cooperatives.

⁶ The red king crab PSC allowance in the Red King Crab Savings Subarea applies to all non-pelagic trawl sectors, not just Amendment 80.

* confidential data

Source: NMFS

Table 10 provides halibut mortality rates in the different flatfish target fisheries, for the combined years 2008 through 2012, by month. Note that it may be helpful to evaluate this table in conjunction with Figure 5, which illustrates the relative patterns of these target fisheries throughout the year; many of the instances of high halibut PSC mortality equate to time periods where there is relatively little effort occurring in that target fishery. Referring to the previously mentioned rock sole example, it can be noted that halibut PSC mortality in the rock sole target fishery is generally higher later in the year, when fishermen are also having difficulty targeting rock sole, than earlier when the fish are aggregated for spawning. It may also be that fishermen ended the year with stranded rock sole because it was not possible to target rock sole without excessive halibut PSC.

Table 10 Halibut mortality rates, by month, in flatfish target fisheries, for combined years 2008 through 2012.

Species	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Flathead Sole	0.004	0.005	0.013	0.014	0.014	0.014	0.007	0.004	0.004	0.008	0.016	
Rock Sole	0.008	0.008	0.005	0.007	0.017	0.010	0.010	0.012	0.010	0.037	0.032	
Yellowfin Sole	0.003	0.005	0.006	0.003	0.003	0.005	0.019	0.007	0.004	0.007	0.013	0.020
Arrowtooth Flounder			0.046	0.026	0.013	0.014	0.007	0.007	0.010	0.006	0.012	

Source: AKFIN.

4.1.4 Dependency on Flatfish

The three target flatfish contribute a significant proportion of the total gross revenue of the Amendment 80 sector. Table 11 identifies the gross revenue contributed by each species, from 2006 to 2011, and the proportion the three species represent of total BSAI and GOA groundfish gross revenue for the sector. Note, gross revenue information is specific to the individual target species, and does not include gross revenue from incidental catch species harvested in the flathead sole, rock sole, or yellowfin sole target fisheries. The three species have represented just over a third of total gross revenue in the last three years.

Table 11 Contribution of flathead sole, rock sole, and yellowfin sole gross revenue to total BSAI and GOA groundfish gross revenue for Amendment 80 vessels (in millions \$).

Year	Flathead sole	Rock sole	Yellowfin sole	Total BSAI and GOA groundfish gross revenue	3 species as % of total gross revenue
2006	15.49	29.95	69.85	274.41	42%
2007	13.70	24.86	77.00	296.17	39%
2008	18.25	37.62	82.90	319.41	43%
2009	10.60	27.05	57.07	274.24	35%
2010	12.93	37.63	66.70	305.06	38%
2011	8.61	48.18	98.84	437.85	36%

4.1.5 Products and Markets

Relative value is different for flathead sole, rock sole, and yellowfin sole. Table 12 provides the price per pound of allocated flatfish species, and those species caught incidentally in flatfish targets. Note, the table does not distinguish pricing between rock sole with roe, and other rock sole. A January 2012 estimate, averaging head and gut prices across fish sizes, identifies rock sole with roe as the most valuable target flatfish, at approximately \$1.29/lb, with rock sole at \$0.70/lb¹¹.

Table 12 Price per pound of flatfish target species and major incidental catch species, 2008 to 2011.

Species		2008	2009	2010	2011
Allocated flatfish	Flathead Sole	0.78	0.60	0.69	0.90
	Rock Sole	0.77	0.62	0.61	0.77
	Yellowfin Sole	0.56	0.50	0.54	0.64
Major incidental catch species in flatfish targets	Alaska Plaice	0.41	0.44	0.46	0.51
	Arrowtooth Flounder	0.49	0.48	0.48	0.72
	Other Flatfish	1.02	1.11	0.96	1.30
	Pacific Cod	1.57	0.84	1.07	1.34
	Pollock	0.67	0.64	0.61	0.73

Primary and secondary products produced by the Amendment 80 sector are described in detail in previous analyses, notably the Amendment 80 analysis (NPFMC 2007). Most flatfish, by volume, are also headed and gutted, in some instances with the roe left intact, when present. A large percentage of flatfish are frozen whole, while a small percentage, primarily yellowfin sole, are made into kirimi, a steak-like product. A large majority of the primary processed output of this fleet is shipped to Asia for reprocessing, while a small portion of the output remains in the U.S., going directly to domestic markets. In flatfish markets, the size (grade) of the fish is extremely important to the product flow. In general, there are four or five grades of flatfish with each grade having a specific market. A distinguishable market also exists for rock sole with roe, primarily in Japan.

While these production trends can be discerned, on the whole, it is difficult to assess the distribution of the sector's production among consumer markets, as much of the reprocessed fish enters the world

¹¹ John Gauvin, personal communication, January 12, 2012.

market. As a consequence, effects of production of the fleet on consumer markets are far reaching and difficult to estimate.

4.2 CDQ Sector

In accordance with the Magnuson-Stevens Act, the CDQ Program is established:

- (i) to provide eligible western Alaska villages with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands Management Area;
- (ii) to support economic development in western Alaska;
- (iii) to alleviate poverty and provide economic and social benefits for residents of western Alaska; and
- (iv) to achieve sustainable and diversified local economies in western Alaska.

The CDQ Program receives apportionments of the annual catch limits for a variety of commercially valuable species in the Bering Sea and Aleutian Islands management area (BSAI), which are in turn allocated among six different non-profit managing organizations representing different affiliations of communities (CDQ groups). CDQ groups use the revenue derived from the harvest of their fisheries allocations as a basis both for funding economic development activities and for providing employment opportunities. Thus, the successful harvest of CDQ Program allocations is integral to achieving the goals of the program. The fisheries management regulations governing the CDQ fisheries are integrated into the regulations governing the non-CDQ fisheries for groundfish, halibut, and crab. The National Marine Fisheries Service (NMFS) and the State of Alaska (State) administer the CDQ Program.

The original fishery management objectives for the groundfish, halibut, and crab CDQ fisheries include, in general, limiting the catch of all species to the amount allocated to the program and not allowing catch made under the program to accrue against non-CDQ portions of total allowable catch (TAC) limits or prohibited species catch (PSC) limits. These objectives also included managing target and non-target species allocations made to the CDQ groups with the same level of strict quota accountability, and holding each CDQ group responsible not to exceed any of its groundfish CDQ allocations.

The CDQ Program was designed to improve the social and economic conditions in western Alaska communities by facilitating their economic participation in the BSAI fisheries. The large-scale commercial fisheries of the BSAI developed in the eastern Bering Sea without significant participation from rural western Alaska communities. These fisheries are capital-intensive and require large investments in vessels, infrastructure, processing capacity, and specialized gear. The CDQ Program was developed to redistribute some of the BSAI fisheries' economic benefits to adjacent communities by allocating a portion of commercially important BSAI species to such communities as fixed shares, or quota, of groundfish, halibut, and crab. The percentage of each annual BSAI catch limit allocated to the CDQ Program varies by both species and management area. These allocations, in turn, provide an opportunity for residents of these communities to both participate in and benefit from the BSAI fisheries.

Currently, 65 communities participate in the CDQ Program. Approximately 27,000 people reside in CDQ communities. These communities have formed six non-profit corporations (CDQ groups) to manage and administer the CDQ allocations, investments, and economic development projects. The six CDQ groups are as follows:

- Aleutian Pribilof Island Community Development Association
- Bristol Bay Economic Development Corporation
- Central Bering Sea Fishermen's Association
- Coastal Villages Region Fund

- Norton Sound Economic Development Corporation
- Yukon Delta Fisheries Development Association

Annual CDQ allocations provide a revenue stream for CDQ groups through various channels, including the direct catch and sale of some species, leasing quota to various harvesting partners, and income from a variety of investments. In 2011, the six CDQ groups earned nearly \$311.5 million in revenue and had operating expenses of about \$248.8 million; net assets increased in 2011 by nearly \$63 million. About 25 percent of revenues came from CDQ royalties. Direct income exceeded royalty income for the first time in 2004. That pattern has continued since that time, with direct income ranging from 55 percent to 83 percent annually (Blandford, pers. comm.¹²).

One of the most tangible direct benefits of the CDQ Program has been employment opportunities for western Alaska village residents. CDQ groups have had some successes in securing career track employment for many residents of qualifying communities, and have opened opportunities for non-CDQ Alaskan residents, as well. Jobs generated by the CDQ program included work aboard a wide range of fishing vessels, internships with the business partners or government agencies, employment at processing plants, and administrative positions. In 2011, the CDQ groups made over \$151 million in fisheries-related investments and paid over \$45.5 million in payroll to about 2,400 persons. CDQ processors, fish-buying stations, and other fisheries businesses made ex-vessel payments of over \$32.2 million to more than 1,360 permit holders. The Western Alaska Community Development Association estimates that there were an additional 2,000 crew positions associated with those permits. The CDQ groups contributed almost \$7.3 million to community infrastructure and over \$17.7 million in other community benefit projects. The groups granted over 725 scholarships, and additional training opportunities for 865 eligible residents (Blandford, pers. comm.).

The fishery resources allocated under the CDQ Program are under Federal jurisdiction. The State is primarily involved in the day-to-day administration and oversight of the economic development aspects of the program, reviewing quota allocations for each CDQ group on a ten-year basis, and the management of the CDQ crab fisheries. NMFS is primarily responsible for groundfish and halibut CDQ fisheries management.

4.2.1 Prosecution of flatfish fisheries

The CDQ program is allocated 10.7% of the target flatfish species. Under the MSA (as revised by Section 416(a) of the Coast Guard and Maritime Transportation Act of 2006), the primary portion of each CDQ reserve (10 percent of the TAC) must be allocated among the six CDQ groups, based on the percentage allocations that were in effect on March 1, 2006. The balance of each reserve (0.7 percent of the TAC) is allocated among CDQ groups based on the percentage allocations agreed on by the Western Alaska Community Development Association Board of Directors, serving in its capacity as the Community Development Quota (CDQ) Program Panel (16 U.S.C. 1855(i)(1)(G)). Table 13 identifies the final allocation percentages and flatfish allocation amounts by CDQ group for 2012, taking into account amounts allocated under both processes. Relative proportions to each group vary by species. For example, three of the six CDQ groups are each allocated approximately a quarter of the CDQ program's apportionment of yellowfin sole, while the other three groups all share the remaining amount. For flathead sole, the allocations to each group are more comparable, with only one group allocated a substantially smaller amount. For purposes of this analysis, it is assumed that the CDQ ABC surplus proposed under Alternatives 2 and 3 would be allocated to each CDQ group using the same allocations in use for flathead sole, rock sole, and yellowfin sole TAC.

¹² Aggie M. Blandford, Executive Director, Western Alaska Community Development Association. Email on January 13, 2013.

Table 13 2012 CDQ allocation percentages and allocations for flatfish and incidentally caught species, by CDQ group.

Species	CDQ program reserve (mt)		CDQ groups					
			APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
Flathead sole	3,652	%	20.1%	21.1%	8.9%	15.0%	15.0%	20.1%
		mt	732	770	324	547	546	732
Rock sole	9,309	%	24.1%	23.0%	8.0%	11.0%	11.0%	23.1%
		mt	2,240	2,141	741	1,018	1,020	2,147
Yellowfin sole	21,614	%	27.7%	23.9%	8.0%	6.4%	7.3%	26.7%
		mt	5,990	5,171	1,730	1,373	1,575	5,775
Pacific cod	27,927	%	15.5%	20.9%	8.9%	17.9%	17.9%	19.0%
		mt	4,314	5,847	2,475	5,006	4,989	5,296
Halibut PSC	393	%	22%	22%	9%	12%	12%	23%
		mt	86	86	35	47	47	90
Red king crab PSC	10,379	%	24%	21%	8%	12%	12%	23%
		mt	2,491	2,180	830	1,245	1,245	2,387
Arrowtooth Flounder	2,675	%	22%	22%	9%	13%	12%	22%
		mt	589	589	241	348	321	589

Note, allocation percentages may not sum due to rounding. Source: NMFS.

Table 6 identifies the CDQ program’s utilization of their flatfish quotas for 2008 through 2012. In the first years of the Amendment 80 program, the CDQ program as a whole utilized only a small proportion of its flatfish quota share. In 2011 and 2012, however, the program harvested 78% and 65% of its yellowfin sole quota share, respectively, and in 2012, harvested 66% of its rock sole quota share. Prior to 2011, the CDQ groups relied primarily on (what would come to be known as) Amendment 80 vessels to harvest their quota share, especially for yellowfin sole and rock sole (Table 14). Beginning in 2011, some CDQ groups have contracted outside of Amendment 80 vessels to harvest their yellowfin sole and rock sole.

Table 14 Proportion of CDQ flatfish catch harvested by Amendment 80 vessels, 2008 through 2012.

Species	2008	2009	2010	2011	2012
Flathead sole	49%	57%	73%	41%	34%
Rock sole	84%	74%	96%	69%	51%
Yellowfin sole	99%	100%	99%	65%	52%

Source: compiled by AKFIN.

The CDQ groups vary individually in the degree to which they harvest their Amendment 80 flatfish species. This may result from a number of different factors. Each group prioritizes their CDQ portfolio differently, and CDQ groups receive apportionments of many other BSAI groundfish target species in addition to the Amendment 80 species. In general, the CDQ groups have a single contract with a partner company to harvest all Amendment 80 species, which include not just flatfish, but also Atka mackerel and rockfish, so it is also possible that within the contract, the group prioritizes other Amendment 80 species over flatfish harvest.

4.3 BSAI trawl limited access sector

While flathead sole and rock sole are entirely allocated to the Amendment 80 sector, yellowfin sole may be targeted by vessels in the BSAI trawl limited access sector. Between 9 and 16 vessels have participated in the sector annually, since 2008, including both catcher processors and harvesting vessels delivering to vessels acting as motherships. As identified above, some Amendment 80 vessels act as motherships, receiving catch from vessels fishing in the BSAI limited trawl access sector. In some cases, the same company may have vessels fishing in both sectors.

Table 6 shows utilization of the yellowfin sole TAC by the sector in 2008 through 2012. In the first three years of the program, the sector harvested less than half of its target allocation; however, this proportion increased in 2011 and 2012, to 75% and 79%, respectively.

Under the provisions of the Amendment 80 program, yellowfin sole TAC and prohibited species allowances can be reallocated from the BSAI trawl limited access sector to the Amendment 80 cooperatives during the course of the year. Some amount of yellowfin sole was reallocated in every year of the program, except 2012. In 2008 and 2009, 6,000 mt of yellowfin sole was reallocated; in 2010, 20,000 mt, and in 2011, 2,000 mt of yellowfin sole was reallocated. Crab PSC allowances were also reallocated in 2010 and 2011.

5 Potential Effects of the Alternatives

5.1 Alternative 1

The Council has identified improving optimum yield in the BSAI groundfish fishery as a need for this action, as flatfish TACs are consistently underharvested, due to various constraints (Section 2). Under the status quo, and in the years since the implementation of Amendment 80 in 2008, the amount of unharvested TAC in the BSAI has been consistently high (Table 15)¹³. Prior to the Amendment 80 program, the flatfish TACs were set consistently below ABC (Figure 3), largely because halibut PSC limits constrained the fishery from catching more flatfish. The fishery was managed as a limited access fishery, and 15% of the annual TAC from the Amendment 80 species (and other, non-allocated groundfish) were allocated at the start of the fishing year to a reserve. From 1998 to 2008, for the six Amendment 80 species, 7.5% of the reserve was allocated to the CDQ Program and 7.5% was allocated to the nonspecified reserve. After 2008, for the six Amendment 80 species, the reserve received 10.7% of the annual TAC, and all of it was allocated to the CDQ Program. The nonspecified reserve, which still exists for other groundfish species, is designed in the FMP as a necessary management buffer to ensure that groundfish TACs are not exceeded. The TAC in the nonspecified reserve is not designated by stock or stock complex, and can be apportioned to the fisheries that contributed to the reserve during the fishing year, in amounts and by species that are determined appropriate by NMFS, as long as apportionment will not result in overfishing. Consequently, prior to the implementation of Amendment 80, the nonspecified reserve allowed NMFS to provide additional harvest opportunities for target fisheries, including flatfish, resulting in some flexibility for vessels participating in these multispecies fisheries, if incidental catch composition or other conditions changed throughout the fishing year.

¹³ Note, in three of these years, 2008 through 2010, pollock biomass was low, and the aggregate BSAI TAC was set below 2 million mt (Table 15). Even in the last two years, however, when combined pollock and Pacific cod biomasses have been high once more (Table 16), the unharvested TAC is higher than in some of the earlier years.

Table 15 BSAI TAC, catch, and unharvested TAC, 2002 through 2012.

Year	BSAI Total TAC	BSAI Initial TAC plus CDQ allocation ¹	BSAI Catch	Unharvested BSAI TAC, plus nonspecified reserve remaining
2002	2,000,000	1,793,115	1,761,866	238,134
2003	2,000,000	1,806,915	1,794,847	205,153
2004	2,000,000	1,999,998	1,979,143	20,857
2005	2,000,000	1,999,998	1,981,109	18,891
2006	2,000,000	1,995,768	1,976,553	23,447
2007	2,000,000	1,969,270	1,856,733	143,267 ²
2008	1,838,345	1,815,038	1,540,610	297,735
2009	1,681,586	1,659,440	1,335,434	346,152
2010	1,677,154	1,655,356	1,351,699	325,455
2011	2,000,000	1,995,796	1,818,065	181,935
2012	2,000,000	1,994,584	1,851,716	148,284

¹ Note, these figures represent the sum of ITAC and CDQ allocations. Not included in these figures is any amount of the annual species TAC that was initially allocated to the nonspecified reserve, and not subsequently reallocated to a particular species.

² 2007 was an anomalous year, in which the Amendment 80 sector was precluded from yellowfin sole fishing by halibut limitations, and the AFA sector was unable to harvest their full pollock allocations.

Source: NMFS

With the implementation of Amendment 80 in 2008, groundfish harvest and retention by the sector have increased (Table 5, Table 16). The program created the opportunity for cooperatives to manage hard caps for the six target groundfish species and four prohibited species designated under the program. At that time, the nonspecified reserve ceased to apply to Amendment 80-allocated groundfish target species. The reserve was no longer necessary, because the program established exclusive harvest privileges that would be carefully monitored, and so contribution to a nonspecified reserve was no longer required to ensure harvests would be maintained within the TAC¹⁴. The need for a management buffer was thus transferred from the agency to the cooperatives, and consequently, the Amendment 80 sector felt the need to increase TACs of their hard capped species (Figure 3, Table 16) compared to their historical catch, in order to ensure that unpredictable incidental catch constraints would not jeopardize overall harvest.

Table 16 Flathead sole, rock sole, and yellowfin sole TACs, and pollock and Pacific cod TACs, as a proportion of BSAI TAC, 2002 through 2012.

Year	Flathead sole, rock sole, yellowfin sole				Pollock and Pacific cod			
	Combined TACs	TACs as % of BSAI TAC	Catch	Catch as % of their TACs	Combined TACs	TACs as % of BSAI TAC	Catch	Catch as % of their TACs
2002	140,250	8%	132,427	94%	1,685,000	84%	1,677,171	100%
2003	125,588	7%	123,556	98%	1,699,260	85%	1,538,281	91%
2004	135,120	7%	141,582	105%	1,707,500	85%	1,692,704	99%
2005	140,310	7%	147,856	105%	1,684,500	84%	1,688,657	100%
2006	144,950	7%	153,596	106%	1,674,768	84%	1,680,667	100%
2007	204,425	10%	177,252	87%	1,564,720	78%	1,528,617	98%
2008	350,000	19%	224,709	64%	1,170,720	64%	1,161,445	99%
2009	360,000	22%	175,787	49%	991,540	59%	986,590	100%
2010	369,000	22%	191,973	52%	981,780	59%	982,243	100%
2011	322,548	16%	225,354	70%	1,479,950	74%	1,419,351	96%
2012	323,134	16%	234,667	73%	1,461,000	73%	1,456,496	100%

The BSAI optimum yield upper limit of 2 million mt is constraining, especially in years when pollock, and to a lesser extent Pacific cod, biomasses are high. For example, in 2012, the sum of individual groundfish species' ABCs was 2.5 million mt, 25% more than the maximum permitted optimum yield. When BSAI pollock and Pacific cod biomasses are high, there is increasing pressure to maximize the

¹⁴ Amendment 80 Program Proposed Rule (May 30, 2007; 72 FR 30061).

TAC for these species during the annual harvest specification process. This could result in increased pressure to limit the TAC for flathead sole, rock sole, and yellowfin sole to ensure the total BSAI groundfish TAC does not exceed the two million mt OY limit. In general, pollock and Pacific cod TACs are almost fully utilized (Table 16). In those years when biomass of pollock and Pacific cod is high, TACs for these species, in addition to all other groundfish species, are set below ABC as part of the necessary balancing to constrain TACs within the 2 million mt limit. If, at the same time, flatfish TACs are being set artificially high, as a necessary mechanism to address uncertainty about catch conditions in the coming year, and yet BSAI TAC remains unharvested, optimum yield of the groundfish fisheries may not be achieved.

Inherent to the Amendment 80 program are tools that are intended to afford flexibility in cooperative management. These include the ability to transfer allocations among vessels within cooperatives, and, since 2011 (now that two cooperatives exist in the program), to transfer between cooperatives. At the sector level, all three of the flatfish targets remain underutilized (Table 6), although one cooperative has fully utilized its initial quota share of yellowfin sole since 2011, and rock sole was largely utilized in 2012. Anecdotal evidence from industry suggests that there is a learning curve to fishing under the cooperative structure, and so it is to be expected that the cooperatives will continue to use the available tools to improve their efficiency and utilization (as illustrated in Table 5). Indeed, in 2012, the number of transfers between cooperatives increased.

There are limitations, however, to the tools that are available within the program. There are many incidental catch constraints affecting the target flatfish fisheries. Often, if an incidental catch species is constraining, it is due to the fact that it has a lower TAC or PSC amount, and therefore it is constraining for all participants. As alluded to above, for many years before Amendment 80 was implemented, PSC limits for halibut were the major constraint on the harvest of flatfish in the Bering Sea. Since the implementation of the Amendment 80 program, and the end of the race for fish for vessels within a cooperative, vessels have improved their ability to avoid halibut. Even with the stepwise reduction in halibut PSC limits allowed to the sector, the cooperatives have remained within or below their PSC limits since the implementation of the program (Table 6).

Since 2008, however, a major constraint has been the sector's allocation of Pacific cod. In BSAI FMP Amendment 85, the Council allocated the sector a proportion of the annual Pacific cod TAC that may have underrepresented recent usage patterns by Amendment 80 vessels. Consequently, the management of Pacific cod quota share to support target flatfish fisheries is an important issue for the Amendment 80 cooperatives (Table 6). In 2012 and 2013, the Pacific cod TAC is higher than it has been in past years, and may have allowed for increased opportunities for participation in flatfish fisheries (e.g., the rock sole roe fishery). On the other hand, a higher biomass also means that more Pacific cod are likely to be encountered, using up the additional quota share.

To some extent, these incidental catch factors can be considered during fishery planning before the start of the year, and taken into account in the harvest specifications process. However, the catch composition rates of individual species in a multispecies fishery can be unpredictable from season to season, and from year to year (see discussion in Section 4.1.3). The seasonal timing of the various flatfish fisheries, and uncertainties concerning catch composition in later fisheries, may make it difficult to negotiate transfers until later in the year, when vessels can better predict whether they will fish up to their allocations. As described in Figure 5, however, later in the year, the harvest opportunities may have already been restricted. For example, vessels may choose to stop fishing in the valuable rock sole roe fishery in the early part of the year (winter), in order to preserve rock sole quota share to prosecute yellowfin sole fisheries in the late summer and into the fall. If rock sole incidental catch is lower than expected in the fall fisheries, there may no longer be the opportunity to target rock sole in order to fully utilize the remaining quota share.

Additionally, environmental conditions, such as the timing of sea ice retreat, can also create constraints that are difficult to predict pre-season. The location of flatfish aggregations in accessible fishing grounds, particularly those that have low halibut PSC, is affected by the timing of the Bering Sea ice retreat, and it may be difficult to predict, prior to the beginning of the fishing year, which target fish is likely to be successfully harvested in areas of low incidental catch or PSC. Water temperature, and warm versus cold years, also affect the distribution of flatfish species and halibut. In recent years, conditions have not favored flathead sole aggregations in areas with lower incidental catch or PSC rates of constraining species, such as halibut, and it may be difficult to predict pre-season when fishing for that target species is likely to be successful.

In summary, under the status quo, the implementation of the Amendment 80 program has precipitated a situation where there is an incentive to set artificially high TACs for the species for which participants are hard capped, in order to account for an environment in which the sector is operating under multiple and unpredictable catch constraints. In some instances, this situation may inhibit the achievement of optimum yield.

5.2 Alternatives 2 and 3

Alternatives 2 and 3 propose an approach to increase harvest in the flathead sole, rock sole, and yellowfin sole target fisheries, by allowing Amendment 80 cooperatives and CDQ groups the ability to adjust their quota shares of these species inseason. Under the proposed approaches, each Amendment 80 entity or CDQ group would have access to an allotted portion of the ABC surplus (the difference between ABC and TAC) for each species, which could be exchanged by surrendering existing TAC from one of the three flatfish species. Alternative 3 differs from Alternative 2 only in that the Council would have the ability to reduce the ABC surplus by some specified amount for socioeconomic and/or biological considerations. The resulting ABC reserve would be available to eligible entities exactly as described in Alternative 2. As a result, the discussion of the impacts of these two alternatives is identical, except that Alternative 3 potentially provides reduced flexibility to the eligible entities, while preserving the Council's ability to recommend maximum harvestable amounts of flathead sole, rock sole, and yellowfin sole.

Maximizing harvest

Alternatives 2 and 3 are intended to provide increased flexibility for the Amendment 80 cooperatives and the CDQ groups to harvest their flatfish allocations. Historically, the fleet has had difficulty fully utilizing the flatfish resource, however, since the implementation of Amendment 80 in 2008, catch rates have improved (Table 5). To the extent that additional constraints in targeting flatfish can be resolved through inseason flexibility in the choice of a flatfish target, the alternatives could be of benefit for maximizing flatfish TAC utilization. In addition, Alternatives 2 and 3 would give individuals within a cooperative greater flexibility to use their allocation of each flatfish species, when they have used the amount available to them under the cooperative agreement (and others have not). These instances will not be apparent in cooperative totals, since they reveal only catches aggregated for the cooperative.

The benefits of the increased flexibility approach arise only when the ABC for the species differs from its TAC. For flathead sole and rock sole, TACs have been below ABCs for many years, but in most years, the Council sets the yellowfin sole TAC close to the ABC. Table 17 provides an example of how catch potential could have been increased for each flatfish species, under the proposed flexibility approach, using 2013 allocations. **Note, not all of the flatfish fisheries could have been maximized simultaneously.** The ABC surplus and ABC reserve approaches allow the Amendment 80 cooperatives and the CDQ groups to adjust their relative allocations for the three flatfish target species, within their individual constraints of their total quota allocation of the three species combined. It does not increase the

overall amount of quota that is available to each entity, for flathead sole, rock sole, and yellowfin sole combined. Increasing the quota of one species necessarily reduces the available quota of another species.

Table 17 Increased catch potential under proposed approach, by sector, based on 2013 values (mt).

	Flathead sole		Rock sole		Yellowfin sole	
	Actual allocation in 2013	Additional catch potential through ABC reserve	Actual allocation in 2013	Additional catch potential through ABC reserve	Actual allocation in 2013	Additional catch potential through ABC reserve
Amendment 80						
Alaska Seafood Cooperative	20,506	32,482	48,691	78,122	81,776	4,112
Alaska Groundfish Cooperative	4,976	7,883	19,000	30,484	60,313	3,032
CDQ	3,652	4,837	9,309	13,013	21,614	856

As can be seen in Table 17, for example, under Alternative 2, the Alaska Seafood Cooperative would have had the opportunity to harvest approximately 4,000 mt additional yellowfin sole in 2013, or almost twice their current TACs of flathead sole or rockfish sole, if it had been willing to exchange an appropriate amount of a different flatfish species. It is not possible to predict exactly how fishing patterns will change as a result of this alternative. However, this additional access might have allowed vessels to continue fishing in the valuable early season rock sole fishery, knowing that a buffer was available in case of unpredictable incidental catch situations, for example in the fall yellowfin sole fishery. As discussed under Alternative 1, the harvest specifications process and pre-season incidental catch planning, may not be able to relieve constraints that arise midseason, in response to changes in incidental catch conditions. The flexibility to exchange quota among target species allows the fleet to shift between targets when unexpected changes occur. So if, for example, an unexpected increase in incidental catch occurs, the fleet will have the opportunity to move to another target species with a lower incidental catch or PSC rate.

The ability to respond inseason may also benefit the fleet with respect to changing environmental and/or market conditions. For example, flathead sole is a more valuable flatfish species (Section 4.1.5), and if environmental conditions result in a situation where targeting flathead sole is successful, the fleet would be able to respond. Other market changes may also be assimilated midseason.

CDQ sector

The CDQ groups would have the same opportunity as the Amendment 80 cooperatives to access the ABC surplus, and consequently would also be able to benefit from the flexibility in choice of target flatfish afforded by Alternatives 2 and 3 (Alternative 2 is illustrated in Table 17). Allocations of the ABC surplus to individual CDQ groups would be much smaller, however, which may limit the flexibility afforded. Also, the CDQ program as a whole is not yet approaching full utilization of any of the three target flatfish species, however, so any benefits of this flexibility may not be apparent until the program comes closer to fully utilizing its existing allocations, as the groups could first utilize their ability to transfer quota share among themselves. Nonetheless, through cooperation among the groups and with leasing partners, even small amounts of ABC reserve may be beneficial to an individual group that is fully utilizing its allocation.

The CDQ program has different constraints than Amendment 80. The program has a much wider species portfolio, managing CDQ in many groundfish target fisheries, not just for Amendment 80 species. In some cases this may prove more constraining, as there are more hard caps to manage, and across multiple target fisheries. The Pacific cod constraint, however, is not as acute for CDQ groups. While a CDQ group may have contracts with different operators for harvesting their target Pacific cod quota share and their Amendment 80 species (including provision for incidental catch of Pacific cod), they still have some

ability to buffer unanticipated overharvest in the Amendment 80 fisheries within their larger Pacific cod allocation.

At the program level, the CDQ groups as a whole have had greater difficulty in fully utilizing their Amendment 80 target species since the implementation of Amendment 80, particularly in 2008 to 2010 (Table 6)¹⁵. This may be due to the Amendment 80 sector adapting to changing fishing patterns as a result of the new program. Over the last five years, the Amendment 80 sector has become increasingly more efficient (Table 5), and this trend is likely to continue, for example as companies consider replacing vessels. Anecdotal evidence suggests that leasing CDQ species is desirable¹⁶, and as Amendment 80 vessels increase their efficiency, they will continue to seek other fishing opportunities, such as CDQ harvest. Also, in the past, the CDQ groups leased their flatfish quota share to Amendment 80 vessels to harvest, however since 2011, other partners have also entered the market, which may lead to increased competition for CDQ leases.

Impacts on other fishery sectors

One way in which other BSAI groundfish fishery participants may benefit from the increased flexibility proposed under Alternatives 2 and 3 is by a relief of pressure on the annual TAC negotiations. As discussed under Alternative 1, the Amendment 80 sector, in managing their multiple hard caps, has to factor in considerable uncertainty in order to ensure that they can successfully prosecute their multispecies fisheries. If the sector has access to an additional tool, there may be more room for compromise with respect to balancing TACs under the 2 million mt optimum yield limit, especially in years where the pollock and/or Pacific cod biomasses are high. In years where pollock and cod biomasses are set below ABC as part of compromises to achieve the 2 million mt limit, the additional flexibility afforded to flatfish fishery participants could result both in increased flatfish, as well as increased pollock and cod, utilization.

It is possible that these alternatives may change interactions with the BSAI trawl limited access sector with respect to TAC negotiations on yellowfin sole. As illustrated in Figure 1, the yellowfin sole target fishery is allocated among the CDQ program, the Amendment 80 sector, and the BSAI trawl limited access sector, in prescribed ways. Both the CDQ groups and the Amendment 80 cooperatives would have the opportunity to increase their initial allocation of yellowfin sole, by exchanging rock sole or flathead sole quota, under Alternatives 2 and 3, if there was an ABC surplus for yellowfin sole. The BSAI trawl limited access sector, however, would be limited by their allocation based on the initial TAC. This situation only applies to yellowfin sole, as the other two species are exclusively allocated to the CDQ program and the Amendment 80 sector¹⁷. The tension may be more acute in years when AFA vessels are sideboarded for participation in the yellowfin sole directed fishery; this has not occurred since the implementation of Amendment 80, but the sideboard would again be instituted if the TAC for yellowfin sole is set below 125,000 mt.

The interaction could work in either direction. Amendment 80 participants may have incentive to lobby for a lower yellowfin sole TAC, knowing that the BSAI trawl limited access sector will be limited by their proportion of that lower TAC, while Amendment 80 cooperatives can exchange quota share for a larger TAC. At the same time, the BSAI trawl limited access sector may equally lobby for a maximum yellowfin sole TAC, knowing that if the Amendment 80 sector is limited in other flatfish species quota share to prosecute that fishery, they can convert yellowfin sole quota share accordingly. Note that

¹⁵ Note, the experience of individual groups may vary, but these data are confidential.

¹⁶ Jason Anderson, Alaska Seafood Cooperative, personal communication, 1/22/2013; Everette Anderson, Aleutian Pribilof Islands Community Development Association, personal communication, 1/22/2013.

¹⁷ Note, if there were an Amendment 80 limited access sector, similar drawbacks might also apply, as that sector would also be limited to the initial quota allocations. At the current time, it is not considered likely that any Amendment 80 vessels will choose to leave the cooperative and fish in the limited access sector.

yellowfin sole is a valuable species to the Amendment 80 sector, as illustrated in Figure 5, which would reduce their incentive to game the TAC negotiations for a lower TAC. Amendment 80 companies also have vessels participating in the BSAI trawl limited access sector, so may have an interest in having that sector retain access to yellowfin sole. In order for gaming to be successful, the Amendment 80 sector would also need to advocate not only for a lower yellowfin sole TAC, but higher flathead sole or rock sole TACs, in order to have the requisite quota share to exchange. Finally, the Council makes final recommendations on TAC setting, and it is likely that any attempts at gaming by either sector would be apparent to the Council, or brought out in public testimony. In reality, the Council has habitually set the yellowfin sole TAC close to or at the ABC in most years (Figure 3, Table 6). Additionally, to date, the BSAI limited trawl access sector has not fully utilized their yellowfin sole allocation, and in all Amendment 80 program years prior to 2012, yellowfin sole TAC from the BSAI trawl limited access sector has been reallocated to the Amendment 80 sector (Section 4.3).

Impacts on crew or communities

Alternatives 2 and 3 may result in some increased fishing activity by Amendment 80 vessels, as increased flexibility allows vessels to continue fishing longer, or to fish for more valuable targets. Potentially, if a vessel is harvesting a greater amount of fish and resulting product forms have increased value, some of that additional value could be received by crew, if a vessel is operating under a revenue sharing agreement. Additionally, communities where owners reside could benefit from increased profitability of the fisheries. Of the 21 Amendment 80 vessels, 3 list their homeport in the Aleutians, 2 in Kodiak, 13 in Washington, and 3 in Maine (NPFMC 2012). To the extent that fishing operations are extended, this may also provide some benefit to the fishing communities that represent the locations where vessels offload or take on supplies. Changes in benefits to the community could occur, but the magnitude of the change from this alternative is expected to be relatively small. Indirectly, some benefit could also accrue to CDQ communities, if the additional flexibility results in increased profitability for CDQ groups and translates to funding to support economic development in western Alaska, or other CDQ program goals.

Environmental impacts

To the extent that Alternatives 2 and 3 would allow the Amendment 80 sector to fully harvest their flatfish allocations, there may be an increase in incidental catch associated with an increase in effort. All groundfish species, however, are already managed under sustainable annual catch limits. Alternatives 2 and 3 would have no effect on stock assessments or on annual catch limit accounting. Slight changes in fishing patterns that affect groundfish target or incidental catch species would continue to be accounted for in future stock assessments.

In terms of PSC, the sector is also capped in its use of prohibited species, as there are specific PSC limits for the sector's use of halibut and crab. While the flexibility afforded in these alternatives may result in some seasonal changes in fishing patterns, as fishermen react to changing incidental catch and environmental conditions, it is likely that the fleet will continue to be concerned about minimizing halibut PSC encounters, and will use their increased flexibility to actively target fisheries with lower halibut encounters. Halibut has long been a constraint for these fisheries, and the cooperatives report annually to the Council on their efforts to avoid halibut PSC. In 2012, the red king crab PSC limit was reduced, and as the limit threatened to be constraining, fishermen were successful in avoiding red king crab PSC. The threat of exceeding PSC hard caps, and thus ending fishing opportunities, will continue to be a primary incentive for PSC avoidance in this fleet; the proposed alternatives provide additional flexibility to enable the fleet to manage themselves effectively within multiple hard caps.

The stock assessment for the flathead sole notes that it may be possible in the near future to consider developing species-specific components for ABC and OFL for this complex. In the fishery, the term "flathead sole" will generally refer to a complex of two species, flathead sole and Bering flounder, both

Hippoglossoides species (Stockhausen et al. 2012). The two species are very similar morphologically, but differ in characteristics and spatial distribution. Bering flounder typically represents less than 3% of the combined biomass of the two species in annual groundfish surveys. Unless other provision is made, it is assumed that the flexibility afforded under Alternatives 2 and 3 would continue to apply to both species managed as a complex, as long as they continue to be managed under a single TAC.

Management impacts

The approaches proposed in Alternatives 2 and 3 would add a level of complexity both to NMFS management and the annual harvest specifications process. Initially, there would be changes required to the catch accounting system, as additional accounts would need to be developed to track ABC reserves, and to allow exchanges. As the category functions similarly to existing transfers, however, such changes should be feasible. On an annual basis, the Council and NMFS would likely need to acknowledge, as part of the harvest specifications process, that the TAC that is set for the three flatfish species could increase, although the overall constraint of the 2 million mt optimum yield limit would still be maintained. Additionally, some effort may be required on the part of NMFS to monitor and track the changes to individual species TACs that may result from exchanges with the ABC reserves.

The agency has noted that allowing the total of individual allocations to equal ABC will reduce the available buffer against accidentally exceeding ABC. Entities with exclusive catch and use privileges (e.g., cooperatives and CDQ groups) are prohibited from exceeding their allocations by regulation, so additional uncertainty would be limited to exceeding the apportionments for the incidental catch allowance, the BSAI trawl limited access sector, or an Amendment 80 limited access sector if it existed. If necessary, under this approach, the agency may set a more conservative ICA for these species. The ICA can be reallocated to Amendment 80 cooperatives, however, so this should not substantially affect the attainment of optimum yield.

No enforcement or safety issues have been identified as a result of implementing this alternative.

5.3 Option 1

If an inseason adjustment and Federal Register notice is required for each exchange, then having some limit on the number of exchanges per year would reduce the potential administrative burden of Alternatives 2 and 3 for NMFS. A maximum of three exchanges per entity seems a reasonable number. This would result in a maximum of six total exchanges for the Amendment 80 sector (given the existence of two cooperatives), and potentially an additional eighteen for the CDQ groups. Inseason adjustments are already used frequently by the agency to reallocate Pacific cod among sectors, for example, or to allocate TAC in the non-specified reserve to a particular target species.

Even if an inseason adjustment and Federal Register notice is not required for each exchange, there may be a benefit of having a maximum limit on the number of exchanges that an entity may make. Limiting the number of exchanges may reduce the possibility of confusion from fluctuating TAC amounts throughout the year.

While limiting the number of exchanges does reduce the flexibility available to the Amendment 80 and CDQ sectors, a limit of three exchanges should provide sufficient opportunity for the sectors, consistent with the purpose of this action. Three exchanges would allow the sectors to make exchanges in the late spring and fall months, once fishing conditions and incidental catch composition in the spring and fall yellowfin sole fisheries become apparent, while still leaving an exchange in reserve to be used if conditions change unexpectedly.

5.4 Options 2 and 3

It is speculative whether there is likely to be an adverse impact on the BSAI trawl limited access sector as a result of Alternatives 2 and 3 (see discussion above). The sector would not be directly affected by the alternatives, but the implementation of either alternative could change the character of annual TAC negotiations, and it is unclear which sector would ultimately benefit. Note, however, that the Council has habitually set yellowfin sole TAC close to or at ABC, so any effect is likely to be small. Additionally, in four of the five years of the program, yellowfin sole TAC has been reallocated from the BSAI trawl limited access sector to the Amendment 80 sector (Section 4.3).

Nonetheless, the Council has identified two possible options that could mitigate any adverse effect on the BSAI trawl limited access sector. Under Option 2, the ABC surplus would only be created for flathead sole and rock sole, however, entities could exchange their yellowfin sole quota share to ‘create’ rock sole or flathead sole TAC. This would eliminate any possible adverse effect on the BSAI trawl limited access sector, as there would be no incentive for the Amendment 80 sector to advocate for a lower yellowfin sole TAC than what they required. By removing yellowfin sole from a full exchange capability, however, this would also add an additional constraint on the Amendment 80 sector compared to Alternatives 2 and 3 without Option 2, and reduce the flexibility afforded by Alternatives 2 and 3. Yellowfin sole is the most versatile Amendment 80 flatfish fishery, at present, and the ability to exchange excess quota share of other flatfish species for yellowfin sole TAC, particularly towards the end of the year when yellowfin sole is the primary flatfish target, could be an important element of the flexibility envisioned in Alternatives 2 and 3.

Under Option 3, the Council would limit the amount of additional yellowfin sole that could be accessed or ‘created’ through ABC surplus exchange, by entity. Each entity could access no more than an amount to be specified, within the range of 5,000 mt to 25,000 mt. Table 18 illustrates what the potential ABC surplus might have been, by entity, if Alternative 2 (or Alternative 3 without a Council buffer) had been in effect in 2008 through 2013. For the 6 years of the program, based on the difference between the ABC and the TAC set by the Council in those years, the CDQ groups’ combined allocation of ABC surplus has been less than 5,000 mt, therefore the groups would never have been limited by the range included in Option 3. The Amendment 80 cooperatives would have been limited by the low end of the range in 3 of the 6 years, and would never have been limited by the upper end of the range. If the low end of the range were adopted, the maximum of 10,000 mt of yellowfin sole could have been ‘created’ in the Amendment 80 sector, by ABC reserve exchange, in any one year. To the extent that the limit set in Option 3 is constraining for Amendment 80 cooperatives, it reduces the flexibility afforded by Alternatives 2 and 3, but still provides more flexibility than Option 2.

If the TAC had been set at the maximum ABC in all 6 years of the program, the BSAI trawl limited access sector would have received an additional 17,200 mt of yellowfin sole in 2011, and 3,200 or 9,200 mt in 2013 and 2008, respectively (Table 18). As identified above, however, the BSAI trawl limited access sector has not caught its yellowfin sole allocation in most of the years of the program.

Table 18 Retrospective application of the ABC surplus for yellowfin sole, and its apportionments to entities, in 2008 through 2013; additional yellowfin sole TAC that would have been apportioned to BSAI trawl limited access sector (BSTLA) if TAC had equaled ABC in those years.

Year	Potential yellowfin sole ABC surplus	CDQ ABC surplus	Alaska Seafood Cooperative ABC surplus	Alaska Groundfish Cooperative ABC surplus	Additional BSTLA yellowfin sole if TAC=ABC
2008	23,000	2,461	11,821	8,718	9,200
2009	0	-	-	-	-
2010	0	-	-	-	-
2011	43,000	4,601	22,100	16,299	17,200
2012	1,000	107	514	379	400
2013	8,000	856	4,112	3,032	3,200

5.5 Potential Net Benefits to the Nation

Overall, this action is likely to have a modest positive effect on net benefits realized by the Nation. Alternatives 2 and 3 provide a clear regulatory framework for adjusting constraints that may affect flatfish harvest opportunities. To the extent that the additional flexibility afforded under Alternatives 2 and 3 allows harvesters to maximize harvest, there may be some consumer benefits realized from the proposed action, although any consumer surplus accruing to non-U.S. consumers will not contribute to improvements in net National benefits. As reported elsewhere, a substantial portion of output from this fishery is exported for re-processing and consumption.

6 Magnuson-Stevens Act Considerations

This section evaluates this action against the National Standards and Fishery Impact Statement requirements in the Magnuson-Stevens Act.

6.1 National Standards

Below are the ten National Standards as contained in the Magnuson-Stevens Act, and a brief discussion of the consistency of the alternatives with each of those National Standards, as applicable.

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

The alternatives considered in this action would not affect the sustainability of groundfish in the BSAI, since the target species will continue to be managed within their acceptable biological catches (ABC). Under Alternatives 2 and 3, an opportunity is created to improve optimum yield for the BSAI groundfish fishery, by creating a mechanism to maximize harvest of flatfish species.

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

This analysis is based on the most current, comprehensive data available, recognizing that some information (such as operating costs) is unavailable.

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.

This action makes no change to how groundfish stocks are assessed or managed in the BSAI.

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, therefore the proposed alternatives treat all fishermen the same regardless of residency. The proposed alternatives would be implemented without discrimination among participants. No fishing privileges are allocated under this action, and this action will not result in excessive shares.

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.

Alternatives 2 and 3 have the potential to increase efficiency in the utilization of fishery resource, by providing flexibility to maximize harvest of flatfish species.

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

None of the proposed alternatives are expected to affect the availability of, and variability in, the groundfish resources in the BSAI in future years. All harvest will continue to be managed under, and limited by, the ABCs for each species.

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

This action imposes no additional costs on industry, and minimal costs on management for compliance, and does not duplicate any other management action.

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.

This action is not expected to have adverse impacts on communities or affect community sustainability, as discussed in Section 5.2. None of the action alternatives would extinguish harvest opportunities for vessels with a high degree of economic dependence upon the flatfish fisheries. The Amendment 80 fleet does not have a large impact on coastal communities, and if anything, the increased flexibility should prolong fishing opportunities rather than curtail them. For the CDQ sector, any increase in flatfish harvest that increases profitability would support economic development in western Alaska, by the nature of the program.

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.

Measures to help minimize bycatch are built into the Amendment 80 program by Council design, for example through reductions in prohibited species catch (PSC) allocations. Alternatives 2 and 3 may provide increased fishing opportunities to maximize harvest of flatfish species, which may have attendant bycatch, however this alternative would not alter existing measures currently in place to minimize bycatch.

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

None of the alternatives adversely affect the safety of human life at sea.

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

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for, (1) participants in the fisheries and fishing communities affected by the plan amendment; (2) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (3) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The RIR prepared for this plan amendment constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the RIR. The effects on participants in the fisheries and fishing communities, and safety of human life at sea, are analyzed in Section 5.

The proposed action affects the BSAI groundfish fisheries in the EEZ off Alaska, which are under the jurisdiction of the North Pacific Fishery Management Council. Impacts on participants in fisheries conducted in the GOA, under the Council's jurisdiction, are addressed in the analysis. Impacts on participants in fisheries conducted in adjacent areas, under the jurisdiction of other Councils, are not anticipated as a result of this action.

7 Initial Regulatory Flexibility Analysis

7.1 Introduction

This Initial Regulatory Flexibility Analysis (IRFA) addresses the statutory requirements of the Regulatory Flexibility Act (RFA) of 1980, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 601-612). This IRFA evaluates the potential adverse economic impacts on small entities directly regulated by the proposed action.

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 significant adverse economic 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. When an agency publishes a proposed rule, it must either 'certify' that the action will not have a significant adverse economic impact on a substantial number of small entities, and support that certification with the 'factual basis' upon which the decision is based; or it must prepare and make available for public review an IRFA. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis.

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

7.2 IRFA Requirements

Until the North Pacific Fishery Management Council (Council) makes a final decision on a preferred alternative, a definitive assessment of the proposed management alternatives cannot be conducted. In order to allow the agency to make a certification decision, or to satisfy the requirements of an IRFA of the preferred alternative, this section addresses the requirements for an IRFA. Under 5 U.S.C., section 603(b) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant federal rules that may duplicate, overlap, or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
 1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
 2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
 3. The use of performance rather than design standards;
 4. An exemption from coverage of the rule, or any part thereof, for such small entities.

In preparing an IRFA, an agency may provide either a quantifiable or numerical description of the effects of a proposed action (and alternatives to the proposed action), or more general descriptive statements, if quantification is not practicable or reliable.

7.3 Definition of a Small Entity

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

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

The SBA has established size criteria for all major industry sectors in the United States, including fish harvesting and fish processing businesses. Effective January 5, 2006, a business involved in fish harvesting is a small business if it is independently owned and operated, not dominant in its field of operation (including its affiliates), and if it has combined annual gross receipts not in excess of \$4.0 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$4.0 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

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

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

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners, controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as 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 not-for-profit enterprise that is independently owned and operated, and is not dominant in its field.

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

7.4 Reason for Considering the Proposed Action

This analysis identifies a mechanism to increase flexibility in the use of three target flatfish species, within the confines of existing conservation thresholds. Flatfish TACs are consistently underharvested, due to various economic, regulatory, and environmental constraints. Under the Magnuson-Stevens Act and the Council's BSAI FMP, there is a need to promote conservation while providing for optimum yield for the BSAI groundfish fishery. The purpose of this action is to identify a flexible approach that creates additional harvest opportunities to maximize total allowable catches, but still (1) maintain catch below acceptable biological catch limits and (2) ensure that the 2 million mt maximum limit of the BSAI groundfish optimum yield range will not be exceeded.

7.5 Objectives of Proposed Action and its Legal Basis

Under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), the Secretary of Commerce (NMFS Alaska Regional Office) and the North Pacific Fishery Management Council have the responsibility to prepare fishery management plans and associated regulations for the marine resources found to require conservation and management. NMFS is charged with carrying out the federal mandates of the Department of Commerce with regard to marine fish, including the publication of federal regulations. The Alaska Regional Office of NMFS, and Alaska Fisheries Science Center, research, draft, and support the management actions recommended by the Council. The Bering Sea and Aleutian Islands (BSAI) groundfish fisheries are managed under the Fishery Management Plan for Groundfish of the BSAI Management Area. The proposed action represents amendments to the fishery management plan, as well as amendments to associated federal regulations.

The principal objective of the action is to identify a flexible approach creating additional harvest opportunities for three target flatfish species, to maximize catch within the requirements of conservation, consistent with National Standard 1 of the Magnuson-Stevens Act.

7.6 Number and Description of Directly Regulated Small Entities

The fisheries directly regulated through this proposed action are participants in the Amendment 80 cooperatives, or the CDQ groups, which are allocated direct harvesting privileges for the three target flatfish species, flathead sole, rock sole, and yellowfin sole. For the participants in the Amendment 80 cooperatives, all contractually and operationally affiliated with each other. Consequently, these impacted entities are considered "large entities" for the purpose of the RFA." The CDQ groups, on the other hand, are considered small entities for purposes of the RFA.

7.7 Recordkeeping and Reporting Requirements

Recordkeeping and reporting requirements are not expected to change substantially as a result of the proposed action. The use of the ABC exchange mechanism is entirely voluntary on the part of the affected entities. If an entity chooses to make an exchange, it will need to follow a procedure similar to that currently in place for intercooperative transfers.

7.8 Federal Rules that may Duplicate, Overlap, or Conflict with Proposed Action

This section will be completed once the Council selects a preferred alternative.

7.9 Impacts of the Action on Small Entities

This section will be completed once the Council selects a preferred alternative.

7.10 Description of Significant Alternatives to the Proposed Action that Minimize Economic Impacts on Small Entities

This section will be completed once the Council selects a preferred alternative.

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9 References

- NPFMC. 2007. Secretarial Review Draft, Environmental Assessment / Regulatory Impact Review / Initial Regulatory Flexibility Analysis for Proposed Amendment 80 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area: Allocation of Non-Pollock Groundfish and Development of a Cooperative Program for the H&G Trawl Catcher Processor Sector. NPFMC, Anchorage, Alaska. April 16, 2007.
- NPFMC. 2011. North Pacific Fishery Management Council. 2011. Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area. NPFMC, Anchorage, Alaska. November 2011.
- NPFMC. 2012. Fishing Fleet Profiles 2011 Addendum. NPFMC, Anchorage, Alaska. October 2012.
<http://www.alaskafisheries.noaa.gov/npfmc/PDFdocuments/resources/FleetProfilesAdd1112.pdf>.
- Queirolo, L. E. 2011. Conducting Economic Impact Analyses for NOAA Fisheries Service. (Revised in response to Presidential Executive Order 13563). National Marine Fisheries Service, P. O. Box 21668, Juneau, AK 99802. February 23, 2011.
- Stockhausen, W.T., D. Nichol, and W. Palsson. 2012. Assessment of the Flathead Sole Stock in the Bering Sea and Aleutian Islands. *In* Bering Sea and Aleutian Islands Stock Assessment and Fishery Evaluation Report. Prepared for the North Pacific Fishery Management Council, December 2012.
<http://www.afsc.noaa.gov/REFM/Docs/2012/BSAflathead.pdf>.