Bering Sea Flatfish Harvest Specifications Flexibility

Discussion paper for February 2012 Council meeting

1 Overview

In December 2010, the Council requested a review of using non-specified reserves or alternative measures to increase flexibility in the harvest of flatfish (yellowfin sole, rock sole, and flathead sole) in the Bering Sea and Aleutian Islands Management Area (BSAI) by the Amendment 80 sector (i.e., non-American Fisheries Act trawl catcher/processors). A discussion paper was presented in February 2011, which examined a possible method for providing Amendment 80 cooperatives with additional harvest opportunities for flathead sole, rock sole, and yellowfin sole without increasing the aggregate total allowable catch assigned to those species. After reviewing the report, the Council requested an expanded discussion paper to address legal, practical, and policy implications of the proposed action, including consultation with NOAA General Counsel, NMFS management, and stock assessment scientists. The Council also requested the expanded discussion paper include possible impacts on prohibited species bycatch, and examine the possibility of including the CDQ sector.

The current discussion paper reflects further discussions with NMFS management about how such flexibility, for both Amendment 80 cooperatives and the CDQ groups, might be practicably achieved within the existing management structure. Section 2 provides some background on the Amendment 80 sector, and the harvest specifications process, while Section 3 identifies the assumptions that were used to identify alternative management measures. Section 4 discusses an approach that would create an aggregate flatfish TAC for yellowfin sole, rock sole, and flathead sole, and also create a new category of quotas to ensure that even with the aggregate TAC, the maximum permissible biological catch allowable for an individual species is not exceeded. Section 5 discusses what the value of the proposed approach might be, and associated policy considerations.

The approach that is discussed in this paper would require an FMP amendment and regulatory changes, which would need to be implemented independent of the annual harvest specification process, and at the beginning of a fishing year. The proposed change could not be implemented in time for the beginning of the 2013 fishing year.

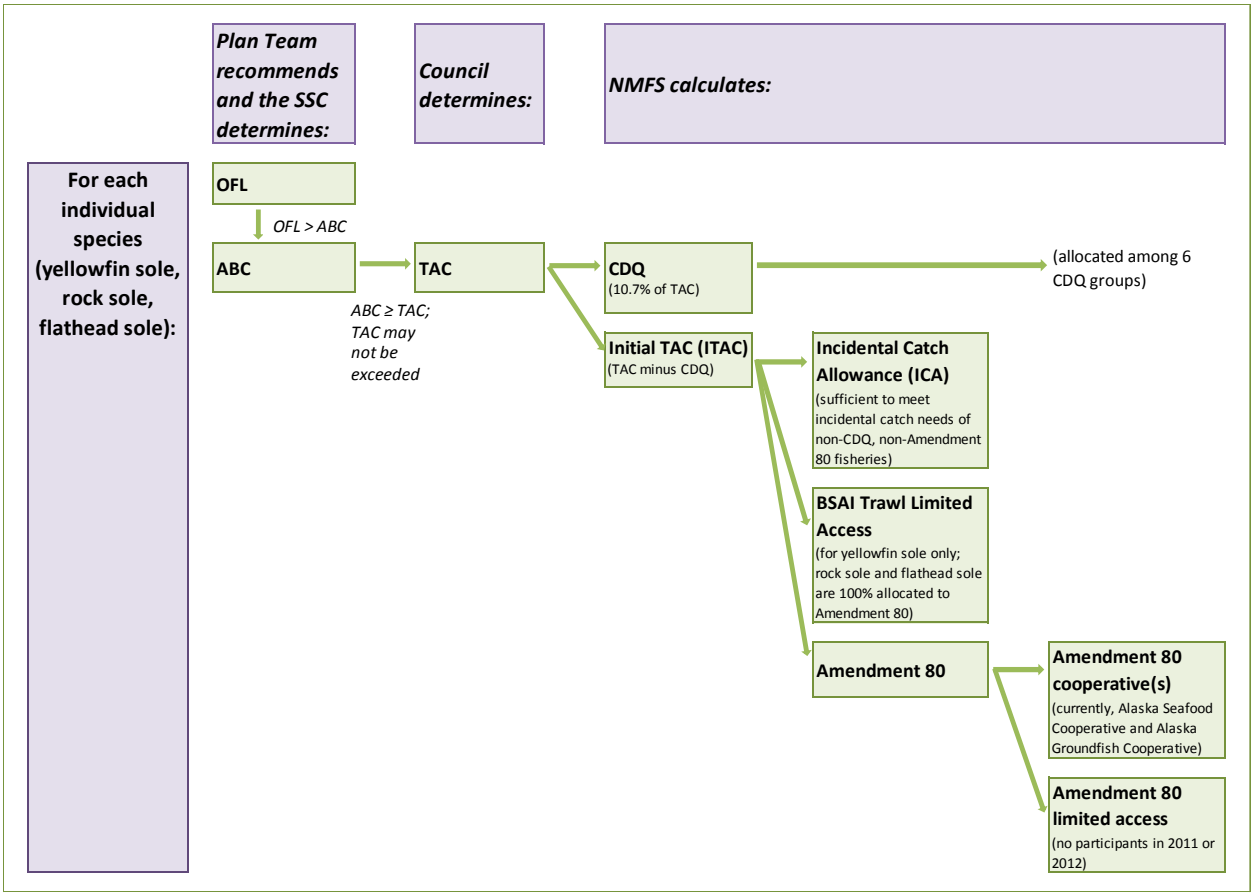
2 Background

The Fishery Management Plan for Groundfish of the BSAI Management Area (FMP) establishes requirements for setting an overfishing level (OFL), an acceptable biological catch (ABC), and a total allowable catch (TAC) 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.[1] 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 Fishery Conservation and Management Act (MSA).[2] For groundfish of the BSAI, including flathead sole, rock sole, and yellowfin sole, the ACL is equal to the ABC.[3] Typically, the TACs for flathead sole and rock sole are set well

[1] See regulations at 50 CFR 679.20(a)(3)
[2] 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).
[3] See section 3.2.3.3.2 of the FMP, "The ACL is equal to the ABC for each stock and stock complex in the target species category."

below the ABC. Historically, the yellowfin sole TAC has been set at the ABC, but the Council recommended that TAC be set below the ABC in the 2011/2012 harvest specifications[4]. For 2012/2013 harvest specifications, TAC was again set almost at the ABC. [5]

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



Statute limits the optimum yield (OY) for groundfish species in the BSAI to two million metric tons (mt)[6]. The Council sets the combined TACs at less than or equal to two million mt to ensure the BSAI OY limit is not exceeded. When BSAI pollock and Pacific cod biomasses are high, there is increasing pressure to maximize the 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.

Rock sole and flathead 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 fisheries. 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.

[4] http://www.fakr.noaa.gov/npfmc/PDFdocuments/SPECS/CouncilSpecs1210.pdf
[5] http://www.fakr.noaa.gov/npfmc/PDFdocuments/SPECS/BSAI%20Specs_Final-1211.pdf
[6] 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."

NMFS reallocates any portion of the TAC not projected to be harvested 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 cannot be exceeded; NMFS retains management authority of the Amendment 80 limited access fishery.[7] Since 2011, all participants in the sector have been members of a cooperative.

Typically, not all of the three flatfish TACs have been fully harvested (Table 1), due to market limitations and limitations associated with allocations of species harvested incidentally in the directed flatfish fisheries, such as Pacific cod and halibut, or timing of the fisheries. The Amendment 80 fleet usually does not successfully target rock sole or flathead sole after August, but yellowfin sole is targeted through the end of the year. However, it is possible that Amendment 80 cooperatives could fully harvest one or more of its flatfish allocations through improved coordination and operational efficiencies gained when fisheries are managed under an exclusive harvest privilege, or catch share.[8]

[7] 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 is detailed in the proposed rule for the Amendment 80 Program (May 30, 2007; 72 FR 30061), and described in the harvest specifications (e.g., See proposed 2011-2012 harvest specifications (December 8, 2010; 75 FR 76372).

[8] The proposed rule for the Amendment 80 Program details the potential benefits of catch share management for these fisheries (May 30, 2007; 72 FR 30061).

Table 1 ABC, TAC, and catch, by sector, of BSAI yellowfin sole, rock sole, and flathead sole, 2008-2012, and catch of Pacific cod and halibut prohibited species catch (PSC) over the same time period.

Species and year	ABC	TAC	Catch							
			Amendment 80: Best Use Cooperative[1]/ Alaska Seafood Cooperative[2]		**Amendment 80:** limited access[3]/ Alaska Groundfish Cooperative[4]		**BSAI trawl limited access**		**CDQ Program** (divided among 6 CDQ groups)	
			Catch	% of cooperative's TAC[5]	Catch	% of ltd access/ cooperative's TAC[5]	Catch	% of limited access' TAC[5]	Catch	% of CDQ sector's TAC
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%	10,394	27%	1,741	8%
2010	219,000	219,000	74,022	67%	21,003	35%	19,485	46%	3,053	13%
2011	239,000	196,000	85,418	95%	21,487	42%	25,375	74%	16,308	78%
2012	203,000	202,000								
Rock sole										
2008	301,000	75,000	34,982	74%	*	*			1,917	24%
2009	296,000	90,000	33,668	59%	3,923	21%			893	9%
2010	240,000	90,000	44,558	76%	4,693	27%			1,337	14%
2011	224,000	85,000	42,388	76%	5,071	33%			3,306	36%
2012	208,000	87,000								
Flathead sole										
2008	71,700	50,000	16,931	47%	*	*			500	9%
2009	71,400	60,000	12,031	28%	1,893	33%			508	8%
2010	69,200	60,000	13,913	32%	611	11%			943	15%
2011	69,300	41,548	6,964	23%	461	20%			674	15%
2012	70,400	34,134								
Pacific cod										
2008			13,518	79%	*	*			500	9%
2009			19,637	95%	2,025	58%			508	8%
2010			20,023	99%	4,005	121%			943	15%
2011			21,143	91%	3,599	89%			674	15%
Halibut PSC										
2008			1,293	70%	*	*			500	9%
2009			1,496	83%	577	85%			508	8%
2010			1,668	80%	587	87%			943	15%
2011			1,323	77%	488	73%			674	15%

[1] 2008-2009; [2] 2010-2011; [3] 2008-2010; [4] 2011
[5] Catch as a proportion of the sector's final quota at the end of the year; may include rollovers, and/or transfers among cooperatives.
* confidential data
Source: NMFS

Management measures that went into effect in 2011, to protect the Endangered Species Act-listed Western population of the Steller sea lion, have constrained the Aleutian Islands Atka mackerel and Pacific cod fisheries that are typically targeted by the Amendment 80 sector.[9] These constraints could result in an increasing shift of fishing effort by Amendment 80 cooperatives from Atka mackerel and Pacific cod to flathead sole, rock sole, and yellowfin sole.

3 Management assumptions

This discussion paper brings certain basic assumptions to the consideration of changing the way in which flatfish may be harvested in the BSAI. This paper is not intended to provide a comprehensive overview of potential flatfish management approaches. It is presumed that the Council intends for any change in management to meet the following requirements:

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

- Ensure that the OFL and ABC for a target stock are not exceeded.
- Ensure that TAC 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 outlined in this paper, no change is envisioned to the current process for establishing individual OFLs and ABCs 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 SSC.

The discussion 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.

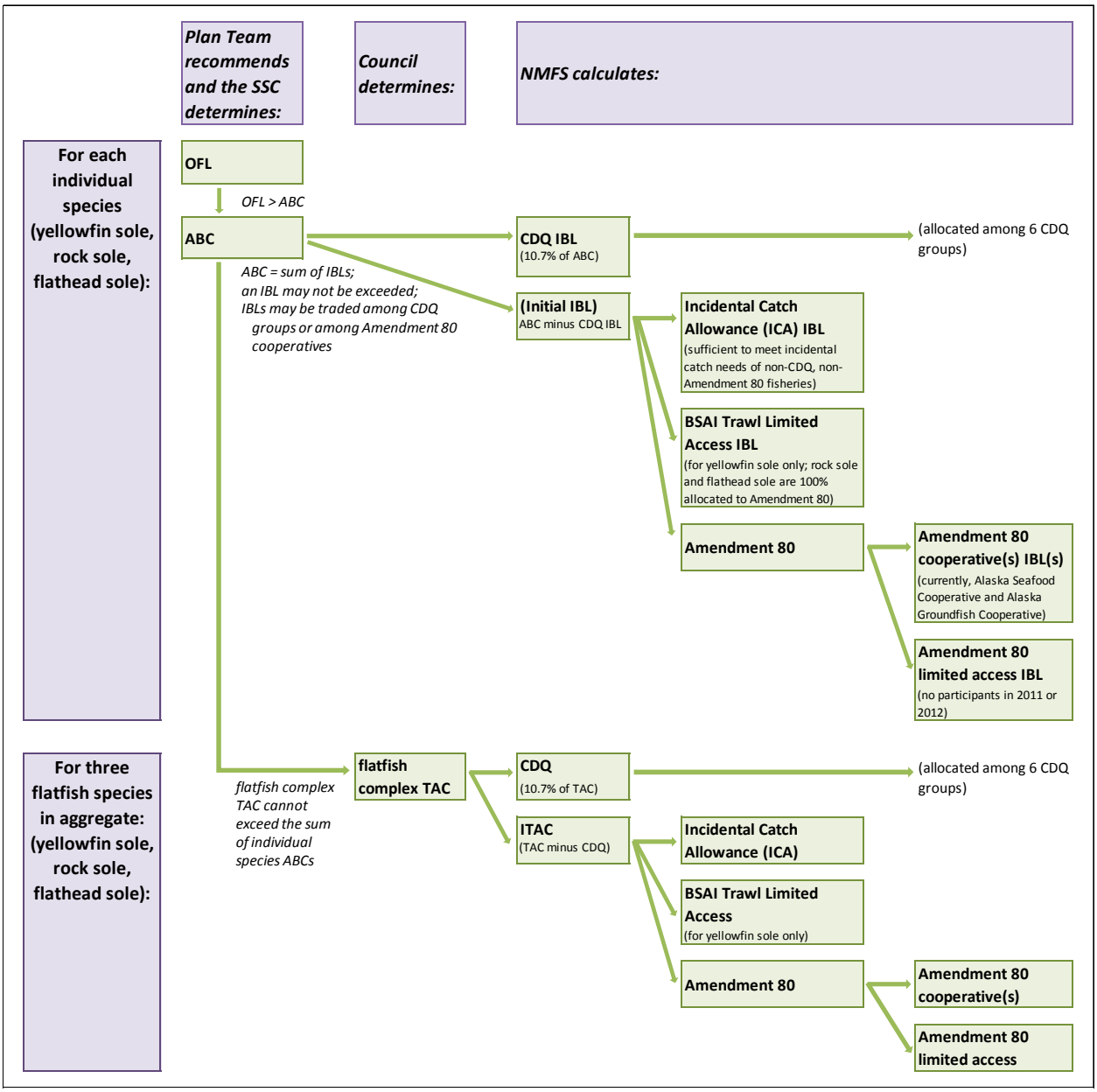
4 Practical approach to accommodate flatfish harvest flexibility: aggregate flatfish TAC with new 'individual biological limit' quota category

The purpose of this approach is to allow Amendment 80 vessels and CDQ groups to fish a new, aggregate "flatfish complex" as part of their Amendment 80 CQ or CDQ allocation, in order that they might maximize their harvest of yellowfin sole, rock sole, and flathead sole. At the same time, a new type of quota category would be created for yellowfin sole, rock sole, and flathead sole: the "individual biological limit", or IBL. The purpose of creating the IBL is to ensure that the ABCs for these individual species are not exceeded.

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. 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 the proposed approach, instead of setting TACs individually for the three flatfish species, the Council would set an aggregate TAC for the "flatfish complex" (Figure 2). The TAC would not be allowed to exceed the sum of the ABCs for the three species within the complex: yellowfin sole, rock sole, and flathead sole. The TAC could be set at less than the sum of ABCs, and would be considered by the Council within the context of other TACs, under the 2 million mt BSAI OY limit. User groups could harvest as much of any individual species within the flatfish complex as long as they (a) do not exceed their sector's allocation of the flatfish complex, and (b) meet the conditions for the flatfish IBLs described next.

Figure 2 Proposed revisions to process for establishing OFL, ABC, TAC, and fishery allocations for yellowfin sole, rock sole, and flathead sole. The IBLs (Individual Biological Limits) are a new qutoa category that would be created under this approach.



To ensure that the ABC for each species within the flatfish complex would not be exceeded, a new IBL category would be established in the harvest specifications process for each species within the flatfish complex (Figure 2). The IBLs would be apportioned to individual user groups, and the sum of IBLs for each species would be equal to the ABC for each species. IBLs would be apportioned from the ABC using the same formulas as are currently used to set TACs for species within the flatfish complex. The IBL categories for each species would be: CDQ IBL (10.7% of ABC, divided among the different groups); an incidental catch allowance (ICA) set by NMFS; an IBL for the BSAI trawl limited access sector (for yellowfin sole only; see below); and IBLs for the Amendment 80 sector (for each cooperative plus one for the limited access sector).

For Amendment 80 cooperatives and CDQ groups, both the individual species IBL allocations and the flatfish complex CQ and CDQ allocations would be hard capped. Exceeding either allocation would result in an enforcement action. For Amendment 80 cooperatives, both the "flatfish complex" quota and the individual species IBLs would be transferable among cooperatives. For the CDQ sector, both the "flatfish complex" quota and the individual species IBLs would be transferable among CDQ groups. The transferability of the individual species IBLs within the "flatfish complex" TAC distinguishes them from traditional quota transfers currently used in rationalized North Pacific fisheries. Since IBLs would be based on the ABC and not the TAC, they enable the user groups to potentially harvest more of a particular species within the flatfish complex than they could with individual species TACs that typically are much lower than the species' ABC.

For the Amendment 80 limited access sector and the BSAI trawl limited access sector, the "flatfish complex" allocation and the IBL allocations would not be hard capped, and it would be the responsibility of NMFS to issue inseason closures to prevent these allocations and limits from being exceeded. NMFS could issue closures for individual IBLs or for the "flatfish complex".

The Amendment 80 limited access sector would be assigned an aggregate "flatfish complex" TAC, and IBL amounts. However, because the BSAI trawl limited access sector is prohibited from directed fishing for flathead sole and rock sole, the BSAI trawl limited access "flatfish complex" TAC would only be based on yellowfin sole. Any incidental rock sole or flathead sole catch would be assessed against their respective IBL and "flatfish complex" ICAs. Projected unused "flatfish complex" TAC and IBL could be reallocated to the Amendment 80 sector, similar to the current management regime.

The "flatfish complex" TAC allocation and the IBL allocations for each species in the complex may limit each other. The total "flatfish complex" TAC could never exceed the sum of the IBLs, and neither the aggregate IBLs nor the total TAC could exceed the aggregate ABC. An individual species' aggregate IBL can never exceed the individual species ABC. However, the "flatfish complex" TAC could exceed an individual species' IBL and ABC. In this instance, the IBL is limiting, and prevents annual catch limits from being violated. Harvest flexibility increases with the difference between the sum of the IBLs and the "flatfish complex" TAC.

Table 2 through Table 5 provide an illustration of the changes in the annual harvest specifications tables that would result from using an aggregate "flatfish complex" TAC and establishing flatfish IBLs. The example uses values from the 2011 harvest specifications process. Because there was no Amendment 80 limited access sector in 2011, the table does not include an allocation to that sector. Table 2 shows the existing 2011 ABC, TAC, and allocations of the three flatfish species.

Table 2 2011 ABC, TAC, and allocations of flathead sole, rock sole, and yellowfin sole (amounts in mt)

	Flathead sole	Rock sole	Yellowfin sole
ABC	69,300	224,000	239,000
TAC	41,548	85,000	196,000
Sector			
CDQ allocation	4,446	9,095	20,972
ICA	5,000	5,000	2,000
BSAI Trawl Limited Access allocation	n/a	n/a	34,153
Amendment 80 allocation	**32,102**	**70,905**	**138,875**
Alaska Groundfish Cooperative allocation	6,269	19,902	58,948
Alaska Seafood Cooperative allocation	25,833	51,003	79,926

Table 3 illustrates that an OFL and ABC would be established for the three flatfish species individually, but the TAC would be established for the aggregated complex. The CDQ reserve (10.7%) would be calculated from the TAC, and remaining Initial TAC (ITAC) would be used to apportion an incidental

catch allowance (ICA), and allocations to the BSAI trawl limited access sector and Amendment 80 entities (Table 4). Table 5 illustrates the IBLs that would be created for the individual flatfish species, for each sector. For purposes of comparison only, Table 5 also compares the 2011 flatfish complex TAC values that would have occurred under the proposed approach, with the summed IBLs for the three flatfish species. In practice, the IBLs would never be summed across species, as their purpose is to prevent individual species ABCs from being exceeded.

Table 3 Proposed approach: 2011 OFL, ABC, TAC, ITAC, and CDQ reserve allocation of yellowfin sole, rock sole, and flathead sole in the BSAI *(Harvest Specification Table 1)*

Species	Area	2011				
		OFL	ABC	TAC	ITAC	CDQ
Yellowfin sole	BSAI	262,000	239,000	n/a	n/a	n/a
Rock sole	BSAI	248,000	224,000	n/a	n/a	n/a
Flathead sole	BSAI	83,300	69,300	n/a	n/a	n/a
Flatfish Complex	BSAI	n/a	n/a	322,548	288,035	34,513

Table 4 Proposed approach: 2011 CDQ, Amendment 80, and BSAI Trawl Limited Access flatfish complex allocations *(Harvest Specification Table 7a)*

	Flatfish Complex TAC
TAC	322,548
ABC	n/a
Sector	
CDQ allocation	34,513
ICA	12,000
BSAI Trawl Limited Access allocation	34,153
Amendment 80	**241,882**
Alaska Groundfish Cooperative CQ	85,119
Alaska Seafood Cooperative CQ	156,762

Table 5 Proposed approach: 2011 Individual Biological Limit (IBL) for CDQ, Amendment 80, and BSAI Trawl Limited Access flatfish species *(new Harvest Specification table)*, and, for purposes of comparison only, total IBL for the three flatfish species versus the flatfish complex TAC

				For purposes of comparison only:	
	Flathead sole IBL	Rock sole IBL	Yellowfin sole IBL	*Total IBL for three flatfish species*	Flatfish Complex TAC
TAC	n/a	n/a	n/a		322,548
ABC	69,300	224,000	239,000	*532,300*	n/a
Sector					
CDQ	7,415	23,968	25,573	*56,956*	34,513
ICA	5,000	5,000	2,000	*12,000*	12,000
BSAI Trawl Limited Access	n/a	n/a	34,153	*34,153*	34,153
Amendment 80	**56,885**	**195,032**	**177,274**	***429,191***	**241,882**
Alaska Groundfish Cooperative	11,109	54,743	75,247	141,099	85,119
Alaska Seafood Cooperative	45,776	140,289	102,026	288,091	156,762

4.1 Adapting formulas that are based on single species allocations

Under the status quo, regulations define how the TAC for each flatfish species is allocated. One of the challenges to establishing an aggregate flatfish complex TAC is to modify these formulaic allocations to the proposed approach. There are three instances where formulas based on single flatfish species allocations would be affected:

- Allocation of yellowfin sole between the Amendment 80 sector and the BSAI trawl limited access sector

- Allocation of yellowfin sole, rock sole, and flathead sole to an Amendment 80 cooperative or limited access fishery, based on the quota share holdings of participants
- Allocation of yellowfin sole, rock sole, and flathead sole among the CDQ groups

The allocation of yellowfin sole between the Amendment 80 sector and the BSAI trawl limited access sector is prescribed in the establishment of the Amendment 80 program. A detailed formula allocates yellowfin sole between the two sectors[10], based on the size of the ITAC. If the Council is no longer setting a TAC specifically for yellowfin sole, the Council would need to define a replacement mechanism for determining the way in which the allocation is made between the sectors.

Without completely revisiting the allocation determined under Amendment 80, there are at least three ways in which the formula might be adapted under the proposed approach. First, the Council could choose instead to base the allocation on the ABC. With this option, the Council could specify that instead of using the yellowfin sole ITAC as the basis for calculating the sector apportionments, the basis should be the IBL equivalent, namely the yellowfin sole ABC minus the CDQ IBL. The value resulting from this calculation is already the value for the BSAI trawl limited access sector IBL; under this option, it would also be the value used for the "flatfish complex" TAC for the BSAI trawl limited access sector. This would be a fairly straightforward translation, so that the existing formula can still be used for the allocation. The consequence, however, of using this option is that in instances when the Council would have set the yellowfin sole TAC at lower than the yellowfin sole ABC (such as 2011), the BSAI limited trawl access sector will be allocated a higher proportion of the yellowfin sole directed harvest than would otherwise have occurred. On the other hand, in this instance, the Amendment 80 sector will also have the opportunity to harvest more yellowfin sole than the TAC would have permitted, as they will have the flexibility to use some of the TAC that would otherwise have been allocated to flathead sole or rock sole to harvest yellowfin sole. An illustration is provided in Table 6, using 2011 values as an example, of how the percentage allocation would have occurred under this option. Note, in years where the Council would otherwise have set the yellowfin sole TAC at ABC, there would be no change from status quo.

Table 6 Example of allocation mechanisms for aggregate "flatfish complex" TAC between the BSAI trawl limited access and Amendment 80 sectors, using 2011 values

	Allocation calculated using individual species' ABCs		Allocation calculated using 2011 TACs	
BSAI trawl limited access[1]	28%	77,085	12%	34,153
Amendment 80 sector	72%	198,950	88%	241,882

[1] Note, although the TAC is for the aggregate "flatfish complex", the BSAI trawl limited access sector is only allocated yellowfin sole. Incidental catch of rock sole and flathead sole by this sector is attributed to the "flatfish complex" ICA.

A second option for how to allocate between the two sectors is to have the Council determine single species TACs for the flatfish species during the annual harvest specifications process, for the purpose of calculating such formulas. The Council would, however, adopt a summed, aggregate TAC for the flatfish complex as the final harvest specification. The advantage of this mechanism is that the Council would then be identifying a specific value for yellowfin sole, from which a proxy ITAC could be calculated, and used for allocation. The disadvantage is that this would create another complexity in the annual harvest specifications process, and would likely confuse some stakeholders. In addition, this approach could contribute to tension between industry stakeholders during the specification process.

A third option would be to use the Council's five years of Amendment 80 allocations (2008 to 2012) to develop a fixed percentage of the "flatfish complex" that would be allocated to each sector. For example, the Council could determine that the mean percentage of the combined flatfish quota shares allocated to

[10] See Table 34, 50 CFR 679

each sector in the last five years would become a fixed proportional allocation between the sectors. Note, the BSAI trawl limited access sector is only allocated yellowfin sole, while the Amendment 80 sector is allocated all three flatfish species. This would, however, be a substantial departure from the allocation structure set up in the Amendment 80 Program.

The other two instances that are affected by the proposed aggregation of the flatfish TACs are the assignment of quota shares among the CDQ groups, and among the Amendment 80 cooperatives or limited access fishery. In both instances, individual quota share allocations are based on percentage allocations that are different across the three species. For example, while a qualifying Amendment 80 permit may be eligible for 3% of Amendment 80 yellowfin sole quota, the permit may be eligible for 15% of rock sole quota, and 1% of flathead sole quota. As with the allocation to the BSAI trawl limited access fishery, a mechanism is needed to allow for this calculation to occur under an aggregate "flatfish complex" TAC.

Similar options as are described above could apply in this instance as well:

- Apply the allocation formula to the individual species' annual ABCs
- Have the Council identify single species TACs for the three flatfish species for the purpose of calculating formulas, and then sum them to adopt an aggregate "flatfish complex" TAC
- Use the mean percentage of combined flatfish quota shares allocated to each entity over the years 2008 to 2012 to determine a fixed percentage of "flatfish complex" that would be the basis of the allocation formula

An illustration is provided in Table 7, using 2011 values as an example, of how the percentage allocation would have differed under the first two mechanisms, for the Amendment 80 cooperatives. The mean percentage option has not been calculated for this discussion paper.

Table 7 Example of allocation mechanisms for aggregate "flatfish complex" TAC among the Amendment 80 cooperatives, using 2011 values

	Allocation calculated using individual species' ABCs		Allocation calculated using 2011 TACs	
Alaska Seafood Cooperative	67%	162,061	65%	131,329
Alaska Groundfish Cooperative	33%	79,821	35%	55,980

5 Value of the proposed approach

The proposal is intended to provide increased flexibility for the Amendment 80 cooperatives and the CDQ groups to harvest their flatfish allocations. Since 2008 (the Program's inception), the Amendment 80 sector has not fully utilized any of their existing allocations of flatfish (with the exception of yellowfin sole by one cooperative in 2011). This has historically been the situation for this fleet, and the implementation of the Amendment 80 program has succeeded at improving utilization of the flatfish resource. To the extent that additional constraints in targeting flatfish can be resolved through inseason flexibility in the choice of a flatfish target, the proposed approach could be of benefit for maximizing flatfish TAC utilization. In addition, the action will give individuals within the sector 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 catches aggregated for the cooperative.

The benefits of the increased flexibility approach only come into effect when there is a differential between the ABC for the species and the Council's TAC. For flathead sole and rock sole, a differential has existed for many years, but in most years, the Council sets the yellowfin sole TAC at the ABC (2011

being the notable exception). The amount of the differential could provide the flexibility for vessels to target one species over another. Yellowfin sole is a particularly versatile fishery, in that vessels can successfully target yellowfin sole through the end of the calendar year, therefore the ability to maximize yellowfin sole catch in a year where the Council does not set the TAC at the ABC, would benefit flatfish participants. Table 8 provides an example of how catch potential could have been increased for each flatfish species, under the proposed flexibility approach, using 2011 allocations. Note, not all of the flatfish fisheries could have been maximized simultaneously. The aggregate flatfish complex TAC approach allows the Amendment 80 cooperatives and the CDQ groups to select which flatfish species to target with their aggregate TAC, within the constraints of their allocations of individual species IBLs; but it does not increase the overall amount of TAC that is available for the combined fisheries. Therefore, in this example, increasing the catch of one species would necessarily trade off with the ability to catch the full allocation of another.

Table 8 Increased catch potential under proposed approach, by sector, based on 2011 values

	Yellowfin sole			Rock sole			Flathead sole		
	Actual allocation in 2011	IBL under proposed approach	Additional catch potential	Actual allocation in 2011	IBL under proposed approach	Additional catch potential	Actual allocation in 2011	IBL under proposed approach	Additional catch potential
Amendment 80									
Alaska Seafood Cooperative	79,926	102,026	**22,100**	51,003	140,289	**89,286**	25,833	45,776	**19,943**
Alaska Groundfish Cooperative	58,948	75,247	**16,299**	19,902	54,743	**34,841**	6,269	11,109	**4,840**
CDQ	20,972	25,573	**4,601**	9,095	23,968	**14,873**	4,446	7,415	**2,969**

There are many constraints affecting the target flatfish fisheries, not least of which is incidental catch. For many years before Amendment 80 was implemented, prohibited species catch (PSC) limits for halibut bycatch were a 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. On the other hand, the sector's allocation of Pacific cod (which additionally has been at a lower biomass from 2008 to 2011) has become more constraining (Table 1), although in 2009 and 2012 the Amendment 80 sector received reallocations of Pacific cod from the trawl catcher vessel sector. This year, the Pacific cod TAC is higher, and should allow for increased opportunities for participation in other flatfish fisheries (e.g., the rock sole roe fishery).

To some extent, these incidental catch factors can be taken into account in setting flatfish TACs, during industry negotiations and Council deliberations to balance the BSAI TACs within the 2 million mt cap. However, individual species catch rates in a multispecies fishery vary year to year, and the fishery is operating under multiple hard cap allocations of target and prohibited species. In this situation, it may be beneficial for the fleet to have access to other alternatives midseason, while prosecuting the fisheries, if bycatch conditions change. For example, this year the fisheries will also be operating under lower red king crab PSC limits in Zone 1, which affects the rock sole fishery. Based on last year's bycatch rates this PSC limit may be constraining, although not based on previous years. In future years, the proposed approach could potentially provide the cooperatives and CDQ groups the flexibility to adjust to such a situation by switching target fishery, rather than leaving TAC stranded in the rock sole fishery.

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 prohibited species catch, 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 are likely to be successfully harvested in areas of low incidental catch. In recent years, conditions have not favored flathead sole aggregations, and it may be difficult to predict pre-season when fishing for

that target species is likely to be successful. Market conditions are also an important factor. There is considerable difference in the relative value of the three flatfish. A January 2012 estimate, averaging head and gut prices across fish sizes, identifies rock sole with roe as the most valuable target fish, at approximately $1.29/lb; flathead sole is valued at $0.92/lb, rock sole at $0.70/lb, and yellowfin sole at $0.66/lb[11].

It is also possible that the Amendment 80 cooperatives have not exhausted their ability to use the tools inherent in the Amendment 80 program to afford themselves flexibility. At the sector level, all three of the flatfish targets remain underutilized. While transfers were made between the cooperatives in 2011, for yellowfin sole and flathead sole, there may still be opportunities within the structure of the program to increase cooperation, and to transfer and trade allocations so that fish can be harvested more efficiently. However, because of the seasonal timing of the various flatfish fisheries, flexibility may be more important earlier in the calendar year, while it may not be as easy to negotiate transfers until later in the year, when vessels can better predict whether they will fish up to their allocations.

To the extent that this proposal would allow the Amendment 80 sector to fully harvest their flatfish allocations, there may be an increase in incidental catch associated with the increase in effort. In terms of PSC, however, the sector is already capped in its use of prohibited species, as there are specific PSC limits for the sector's use of halibut and crab.

Logistically, the proposed approach would have no effect on stock assessments or on annual catch limit accounting. The new approach does add a level of complexity, both to NMFS management and the annual harvest specifications process. There would be changes required to the catch accounting system, however, as additional quota categories would need to be developed to track catch against quota categories, and to allow transfers of the new "IBL" quota category. As the category functions similarly to a TAC, however, such changes should be feasible. It would also increase the number of categories which inseason management would have to monitor, which adds to their workload. Managing inseason closures in the limited access sectors to accommodate an aggregate "flatfish complex" TAC and IBLs would be slightly more difficult. FMP and regulatory amendments would be required to make these changes.

The Amendment 80 cooperatives and the CDQ groups would need to modify their operating agreements to facilitate management of the new flatfish complex TAC and IBLs. Cooperatives would likely allocated both IBLs and the flatfish complex TAC to individual companies or vessels, and establish these as hard caps within the cooperative. Vessels would need to have both IBL quota for an individual species, and aggregate flatfish complex quota to harvest any given species. Vessels that were short on either IBL or TAC could transfer within the cooperative, or the cooperative could arrange a transfer with another Amendment 80 cooperative.

On a policy note, the proposed approach to flatfish management described in this paper represents a significant departure from the well-established policy of setting a species-specific TAC when adequate biological information exists. While the Council may find that there is justification in making this change for the Bering Sea flatfish complex, given the constraints of the 2 million mt cap, the protection afforded against exceeding the ABCs, and the high level of observer coverage present in the fisheries in question, the Council should carefully consider the precedent that could be established in moving away from species-specific TACs.

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

6 Other approaches considered and rejected

The Council's original motion 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 transfer 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 add impractical complexity to the annual harvest specifications process.

7 Council action

At this meeting, the Council may decide whether this concept should be further explored, either in an analysis or through an expanded discussion paper. Should the Council wish to proceed with an analysis, a problem statement and alternatives would be required.

The approach that is discussed in this paper would require an FMP amendment and regulatory changes, which would need to be implemented independent of the annual harvest specification process, and at the beginning of a fishing year. The proposed change could not be implemented in time for the beginning of the 2013 fishing year.