

**PUBLIC REVIEW DRAFT**

ENVIRONMENTAL ASSESSMENT / REGULATORY IMPACT REVIEW /  
INITIAL REGULATORY FLEXIBILITY ANALYSIS

for

**Allocation of Non-Pollock Groundfish  
and Development of a Cooperative Program  
for the Non-AFA Trawl Catcher Processor Sector**

Proposed **AMENDMENT 80** to the  
Fishery Management Plan for Groundfish  
of the Bering Sea and Aleutian Islands Management Area

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## EXECUTIVE SUMMARY

The North Pacific Fishery Management Council (Council) has long recognized the need to reduce bycatch, minimize waste, and improve utilization of fish resources to the extent practicable in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, communities, and the nation as a whole. Since at least 1995, the Non-AFA Trawl CP sector has had the highest discard rate in the Bering Sea and Aleutian Islands (BSAI) groundfish fisheries. Although the overall retention level in that sector has increased in the last decade, it is still well below other BSAI sectors. The Non-AFA Trawl CP sector primarily participates in multi-species fisheries that operates under a “race for fish”, where vessels attempt to maximize their harvest in as little time as possible, in order to claim a larger share of the available quota. Because vessels are competing with each other for shares of the total quota, an individual vessel may be penalized for undertaking actions to reduce incidental catch, such as searching for cleaner fishing grounds. To provide the sector with a tool to increase economic efficiency when reducing incidental catch and minimizing waste, the Council in October 2002, initiated Amendment 80, an action that would eliminate the race for fish among members of the sector that wanted to join a cooperative.

Amendment 80 would provide specific groundfish allocations to Non-AFA Trawl CP sector and allow the formation of cooperatives. Sector allocations and associated cooperatives would allow participants to focus less on harvest maximization and more on optimizing their harvest. This in turn could allow reduction of incidental catch, improve retention, and improve utilization, while still improving the economic health of the harvesting and processing, all of which address the problem statement for Amendment 80.

Four strawman alternatives are considered to compare the impacts of the proposed program components, a status quo alternative (Alternative 1) and three alternatives that would allow the formation of multiple (Alternatives 2 and 4) or single (Alternative 3) cooperatives. The alternatives evaluated in this analysis are summarized in the table below.

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Primary Target Species to be Allocated</b>	None	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch
<b>Allocation to Sector</b>	None	<p><u>Allocation:</u> Sector's retained catch over all retained catch, 1998-2002</p> <p><u>Management:</u> Hard cap</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 30% to sector and 70% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Sector's retained catch over all total catch, 1995-2003</p> <p><u>Management:</u> Soft cap; rollover to sector</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 100,000 mt threshold to be divided 70% to sector and 30% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Yellowfin sole 82.5%, rock sole 97%, flathead sole 98%, EAI/BS and CAI Atka mackerel 98% reduced to 90% over a 4-year period at 5% per year starting in second year. WAI Atka mackerel 100%. EAI and CAI AI POP 95% reduced to 90% the second year. WAI POP 98%.</p> <p><u>Management:</u> Hard cap for sector and an ICA for fixed gear sectors and trawl limited access fishery; rollover of allocated species and PSC to H&amp;G sector, halibut PSC rollover discounted 5%</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 60% to H&amp;G sector and 40% to the general limited access fishery; allow rollovers to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards in the threshold fishery</p>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Allocation of Prohibited Species</b>	PSC allocated by target fishery and shared among all trawl vessels	Sector allowance based on average historic PSC usage in directed fishery for allocated primary species plus Pacific cod, 1998-2002	Sector allowance based on: a) average PSC usage, by fishery, of all trawl in each PSC fishery group for allocated primary species plus Pacific cod, 1995-2003 b) apply sector proportion as determined above c) reduce by 5%	Two halibut PSC options 1) H&G sector allowance based on average historic usage of PSC from 2000-2004. Reduce calculated halibut PSC allowance to 80% of apportionment amount phased in at 5% per year starting in the second year. 2) Allocate PSC based on sector's percentage allocations of Amendment 80 species multiplied by trawl PSC amounts apportioned to target species staying within 2,200 mt minimum and 2,450 mt maximum.  Crab PSC apportionment amounts are 37.52% red king crab, 61.44% <i>C. opilio</i> , 52.64% for Zone 1 <i>C. bairdi</i> , and 29.59% for Zone 2 <i>C. bairdi</i> . Reduce crab PSC allocations to 80% of apportionment amount phased in at 5% per year starting in second year.
<b>Sector Eligibility</b>	determined by Congress	Determined by Congress	determined by Congress	determined by Congress
<b>Cooperative formation</b>	None	<i>Threshold:</i> 15% minimum of eligible participants and must be comprised of at least two separate entities	<i>Threshold:</i> 67% minimum of eligible vessels and must be comprised of at least three separate entities	<i>Threshold:</i> 30% minimum of eligible vessels and must be comprised of at least three separate entities

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Cooperative allocation</b>	None	<p><i>Allocation:</i> based on retain catch history, 1998-2002</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>	<p><i>Allocation:</i> based on total catch history, 1995-2003 drop 3</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>	<p><i>Allocation:</i> based on total catch history, 1998-2004 drop 2</p> <p>For Atka mackerel each vessel would receive its historic catch for all areas combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>
<b>Excessive share limits</b>	None	No limit on consolidation	No single person can hold no more than 50% of the catch history of an allocated species	<p>No single person can hold more than 30% of the catch history of an allocated either on an aggregate basis Initial allocation grandfathered</p> <p>No vessel may harvest more than 10% of the entire sector allocation. Initial allocation grandfathered</p>

	Alternative 1 (Status Quo)	Alternative 2	Alternative 3	Alternative 4
<b>Sideboards</b>	None	<p><u>For sector:</u> established based on participation in other fisheries, 1998-2002; for GOA halibut PSC based on usage by area, 1998-2002; only vessels that have GOA wide weekly participation in the flatfish fisheries over the threshold during the qualifying period would be eligible to participate in the GOA flatfish fisheries</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><u>For sector:</u> established based on participation in other fisheries, 1995-2003; for GOA halibut PSC based usage by area, 1995-2003</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><b>BSAI</b> None</p> <p><b>GOA</b></p> <ol style="list-style-type: none"> <li>1) Eligible to participate in the GOA flatfish fisheries based on 10 weeks of participation in flatfish fishery using 1998-2004.</li> <li>2) Sector vessels that have fished 80% of their weeks in the GOA from 2000 to 2003 will be exempt from GOA halibut sideboards</li> <li>3) Gulf-wide halibut sideboards calculated based on actual usage for each target fishery within each area for the Non-AFA Trawl CP sector using 1998-2004</li> <li>4) GOA pollock, Pacific cod, and directed rockfish sideboards for the Non-AFA Trawl CP sector based on retained catch of the sector as a percent of retain catch of all sectors from 1998-2004</li> <li>5) CGOA rockfish demonstration program takes precedence.</li> <li>6) Sideboards apply to vessels and LLPs used to generate harvest shares</li> <li>7) GOA rationalization program when complete will supersede Amendment 80 sideboards</li> <li>8) Sideboards for PSC and GOA would be allocated between cooperative and non-cooperative vessel/licenses based on same formula as Component 10</li> <li>9) Each cooperative will receive its GOA sideboards</li> </ol>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>CDQ</b>	7.5% of groundfish and prohibited species (except herring) allocated to CDQ multispecies fishery	10% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	15% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	10% of allocated species and secondary species caught (except Pcod) taken incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation

## Regulatory Impact Review

### Effects on Harvest Participant and Fishing Practices

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

Maintaining the status quo is expected to result in the continuation of existing fishing practices and patterns. Participants in the Non-AFA Trawl CP sector will likely continue to focus the majority of their fishing effort on several flatfish species, Atka mackerel, AI Pacific Ocean perch and Pacific cod in the BSAI. Some vessels in the sector will also participate in GOA fisheries. Under this alternative, trawl participants will continue to race for fish. Trawl fisheries will continue to be prematurely closed due to constraining halibut PSC allowances. Sector discard rates will likely improve, but overall the retention rates will continue to lag behind the rest of the BSAI sectors. Contributing to the improved retention rates is the impending groundfish retention standard (GRS) action. Amendment 79, if approved by the Secretary of Commerce, would phase in the GRS over a four-year period. Originally approved by the Council in June 2003, the GRS was to begin in 2005 with a starting GRS rate of 65 percent. Over the subsequent four-year period, the GRS would gradually increase, culminating at 85 percent in the fourth year. The action would only require Non-AFA Trawl CP vessels greater than or equal to 125 ft. LOA to comply with the GRS. Non-AFA Trawl CP vessels less than or equal 125 ft. LOA would be exempt from the GRS. To monitor and enforce the GRS, sector vessels greater than or equal to 125' LOA would be required to measure all catch on flow scales and all hauls must be observed. Many of the vessels already have flow scales onboard, but seven vessels need to install the scales. All sixteen vessels greater than 125 ft. LOA would also be required to carry an extra observer. Where feasible, GRS could reduce economic returns from fisheries to members of the sector.

#### Alternative 2

Under Alternative 2, the allocation percentages to the Non-AFA Trawl CP sector are expected to be sufficient to keep the sector's groundfish catch levels about the same as their historic catch (see Table ES-1). However, the remaining portion of groundfish reserved for the general limited access fishery would be substantially less than historic harvests and may disadvantage members of other sectors, particularly non-AFA catcher vessels. The remaining amount of groundfish reserved for the trawl limited access fishery is less than the combined AFA Trawl CP and CV sideboards for each of the species. Between 1995 and 1997, vessels whose catch history was assigned to the AFA Trawl CP and CV sectors participated in the fisheries allocated to the Non-AFA Trawl CP sector in larger numbers.

**Table ES - 1 Allocations of Amendment 80 species under Alternative 2**

Allocated Species	Alternative 2	
	Non-AFA Trawl CP sector	Trawl limited access fishery
	Allocation percent	Allocation percent
<b>Atka mackerel</b>	99.7%	0.3%
<b>Flathead sole</b>	96.8%	3.2%
<b>AI POP</b>	100%	0.0%
<b>Rock sole</b>	95.4%	4.6%
<b>Yellowfin sole</b>	88.5%	11.5%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

Under this alternative, the yellowfin sole threshold program could provide the opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when BSAI pollock TAC declines relative to yellowfin sole. In that circumstance, 30 percent of the TAC over 125,000 mt would be assigned to the Non-AFA Trawl CP sector. The remaining 70 percent of the TAC would be apportioned to the trawl vessels that are not a part of the Non-AFA Trawl CP sector. Allocating 70 percent of the TAC, above the 125,000 mt level, would provide expanded harvesting opportunities for these sectors. Table ES-2 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels.

**Table ES - 2 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 2.**

<b>TAC</b>	<b>125,000</b>	<b>140,000</b>	<b>150,000</b>	<b>160,000</b>	<b>170,000</b>
CDQ allocation (10%)	12,500	14,000	15,000	16,000	17,000
ICA (Assumed 5%)	5,625	6,300	6,750	7,200	7,650
<b>ITAC</b>	<b>106,875</b>	<b>119,700</b>	<b>128,250</b>	<b>136,800</b>	<b>145,350</b>
Non-threshold Trawl limited access allocation	12,291	13,766	14,749	15,732	16,715
Non-threshold Non-AFA Trawl CP Sector allocation	94,584	105,935	113,501	121,068	128,635
Threshold allocation to trawl limited access			2,275	8,260	14,245
Threshold allocation to Non-AFA Trawl CP sector			975	3,540	6,105
<b>Total allocation for trawl limited access</b>	<b>12,291</b>	<b>13,766</b>	<b>17,024</b>	<b>23,992</b>	<b>30,960</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>94,584</b>	<b>105,935</b>	<b>115,776</b>	<b>124,608</b>	<b>134,470</b>

The PSC allocation to the Non-AFA Trawl CP sector under Alternative 2 would likely be sufficient to harvest their entire allocation of groundfish. However, the remaining halibut PSC for all other trawlers could be insufficient to harvest the allocation of groundfish to the general limited access fishery. Given the historically usage of halibut PSC from 1995 to 1998, there is the potential for the remaining trawl sectors to fall short of the necessary halibut PSC needed to harvest the remaining groundfish, if, for example, the Pacific cod TAC were to increase relative to pollock TAC. Table ES-3 provides the PSC allocation under Alternative.

**Table ES - 3 PSC allocations for Alternative 2 based on PSC usage by the Non-AFA Trawl CP sector from 1998 to 2002**

<b>PSC Species</b>	<b>Percent of PSC usage using average of annual percents</b>
Halibut	77.43%
Red king crab	90.37%
<i>C. opilio</i>	94.37%
Zone 1 <i>C. bairdi</i>	90.41%
Zone 2 <i>C. bairdi</i>	94.56%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

Under Alternative 2, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

Based on the eligibility requirements under this alternative, there appear to be 26 vessels that qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

Under Alternative 2, 15 percent of the qualified vessels would be needed to form a cooperative. In addition, at least three unique entities (using the 10 percent AFA rule) are required for cooperative formation. Since under Alternative 2 there are likely to be 26 qualified vessels, at least four of these vessels would be needed to form a cooperative. If each of the cooperatives had the minimum required four qualified vessels, six cooperatives would be formed in the Non-AFA Trawl CP sector. This provision should help to ensure that each vessel is given the opportunity to join a cooperative. Alternatively, the “odd-person-out” may have less of a voice in deciding the terms of the cooperative agreement. It seems less likely that the “odd-person-out” would be worse off under this alternative than Alternative 3 cooperative structure, which allows only a single cooperative to form. Under this action, each participant would have the option to join any of six potential cooperatives, so it is more likely to find a cooperative that would help them meet their objectives. Participants who elect not to join a cooperative would participate outside a cooperative but within the sector’s limited access fishery.

Under Alternative 2, allocation of the primary species and PSC allowances between cooperatives and the sector's limited access fishery is based on the retained catch of the allocated species of the eligible license holders included in each cooperative and in the non-cooperative pool for the years 1998-2002, with no years of catch history excluded. Since it is not possible to determine which vessels will join a cooperative(s) very little can be said about the distribution of the sector's TAC between cooperatives and the sector's limited access fishery.

Using retained catch during the years 1998-2002 with no drop years, the number of vessels that would be below with minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Due to confidentiality requirements, a more detailed description of the minimum allocation is not possible.

Unlike the other four allocated species, the allocation of Atka mackerel under Alternative 2 would be based on total catch for the years 1998-2002. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history will receive 1.937 percent of the BSAI Atka mackerel of which 1.505 percent would come from EAI/BS and .432 percent would come from the CAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 12.6 percent of the EAI/BS TAC and 0.8 percent of the CAI. After deducting the allocation to the non-mackerel vessels, the remaining 98 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's Atka mackerel allocation.

Consolidation in the Non-AFA Trawl CP sector under Alternative 2 would not be constrained. There would be no limit on the percentage of the Non-AFA Trawl CP sector allocation that an eligible participant can own or use. In general, number of vessels in the fishery could be reduced to the minimum number need to harvest the entire allocation. Cost savings associated with a more optimal fleet size is expected to increase the producer surplus generated by the fleet.

Alternative 2 would implement specific GOA harvest caps on the Non-AFA Trawl CP sector for the species that are not allocated. Sideboard caps would be set using the sector's retained catch of BSAI groundfish species from 1998-2002 in all fisheries relative to the retained catch of all vessels. Those percentages are reported in Table ES-4. Sideboard caps would not be established for BSAI species. GOA groundfish harvests by the Non-AFA Trawl CP sector would be limited by requiring vessels to have fished 10 weeks during the 1998-2002 period. The 13 vessels that fished more than 10 weeks in the GOA flatfish fisheries during the qualifying period would be allowed to fish GOA flatfish without additional restrictions beyond the current management measures. The other eight vessels that have historically fished flatfish in the GOA, but had limited participation, would be prohibited from directed fishing for GOA flatfish in the future.

**Table ES - 4 GOA sideboard estimates and average historic catch**

Species	Alternative 2		
	Sideboard %	2005 ITAC (mt)	Estimated Sideboard (mt)
<b>Pollock</b>			
Pollock 610	0.3%	30,380	91
Pollock 620	0.1%	34,404	34
Pollock 630	0.1%	18,718	19
Pollock 640	0.1%	1,688	2

Species	Alternative 2		
	Sideboard %	2005 ITAC (mt)	Estimated Sideboard (mt)
<b>Central Gulf</b>			
Pacific Ocean Perch	RDP	8,535	RDP
Pelagic Shelf Rockfish	RDP	3,067	RDP
Northern Rockfish	RDP	4,283	RDP
Pacific Cod	5.4%	25,086	1,355
<b>Western Gulf</b>			
Pacific Ocean Perch	99.3%	2,567	2,549
Pelagic Shelf Rockfish	64.8%	377	244
Northern Rockfish	100.0%	808	808
Pacific Cod	2.0%	15,687	314
<b>West Yakutat</b>			
Pacific Ocean Perch	94.5%	841	795
Pacific Cod	3.6%	0	0
Pelagic Shelf Rockfish	86.4%	211	182

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the catch of all vessels in the GOA

Note: Only vessels with a sufficient number of weeks fished in GOA flatfish fisheries may participate in a directed flatfish fishery.

RDP - Indicates that species will be managed under the Rockfish Demonstration Program

Sideboards would also be set for GOA halibut PSC based on actual usage relative to the other sectors from 1998-2002. The tons and percentage of the GOA halibut PSC allotment to Deep and Shallow water species groups are reported in Table ES-5. The amounts of halibut estimated for Alternative 2 are less than the fleet has traditionally taken in the GOA.

**Table ES - 5 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				Total
	1	2	3	4	
	<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>				
Alt 2	50.94 (2.55%)	228.05 (11.40%)	243.29 (12.16%)	60.84 (4.09%)	583.12 (29.16%)
	<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>				
Alt 2	18.75 (0.94%)	43.68 (2.18%)	43.59 (2.18%)	58.03 (2.90%)	164.05 (8.20%)

Source: NPFMC summary of NMFS weekly PSC reports.

Note: Data for 2004 was not included in this report. A trawl PSC allotment of 2,000 mt was assumed.

The Non-AFA Trawl CP sector should have the opportunity to harvest their historic percentages of BSAI groundfish species, given the sideboard options selected. These caps do not give the sector the rights to those fish, but instead are limits on their catch. Other sectors could legally harvest portions of the sideboard limits before the Non-AFA Trawl CP sector catches them. Basing the caps on retained catch, results in larger caps, in most cases, relative to using total catch.

Future GOA groundfish harvests cannot be predicted, without additional information on the number of participants that will be allowed to fish in the future. The GOA PSC caps, however, should enable the sector to harvest historic levels of groundfish. GOA halibut PSC catches were not assigned to a specific area, since NMFS does not manage PSC by area in the GOA. Finally, the analysts assumed that any catches by the sector under the Rockfish Pilot program would be deducted from the sideboard cap amounts.

Given the Alternative 2 methods of calculating the BSAI sideboard caps, it is expected that the Non-AFA Trawl CP sector could harvest their historic percentages of various fisheries and still provide sufficient protection for other sectors. Insufficient information is available to make that determination for the GOA. However, given that most fisheries in the GOA are closed due to halibut bycatch and not TAC, the halibut PSC caps should provide adequate protection for most species.

With regards to the meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternatives 2 than under Alternative 1. Under Alternative 2 sector participants that join a cooperative can pool their individual annual GRS rates across the cooperative. Under Alternative 1, the GRS would be enforced on a vessel by vessel basis. Under Alternative 2, vessels in a cooperative would average their individual annual retention rates, which could help to reduce increased operation costs for those vessels limited by the GRS. Overall, given the flexibility of this alternative, each cooperative will minimize the cost of meeting the GRS to the extent possible.

### **Alternative 3**

Under Alternative 3, the allocation of groundfish species and PSC species would be insufficient to maintain the Non-AFA Trawl CP sector's historic harvest levels (except maybe yellowfin sole). In addition, large portions of the remaining Amendment 80 species would be directed to the general limited access fishery where it would likely remain unharvested without substantial increases in harvest by participants in the fishery. The Non-AFA Trawl CV sector has traditionally not harvested rock sole to level allocated under this alternative. The alternative does include a provision to rollover any portion of the general limited access fishery allocation that is projected to go unused by a given date. However, the timing of some of the fisheries and lack of PSC that would be necessary to harvest the rollover decrease the benefits relative to a direct allocation as in Alternative 2. Table ES-6 shows groundfish allocation percentages for Alternative 3.

**Table ES - 6 Allocations of Amendment 80 species under Alternative 3**

Allocated Species	Alternative 3	
	Non-AFA Trawl CP sector	General limited access fishery
	Allocation percent	Allocation percent
<b>Atka mackerel</b>	84.3%	14.6%
<b>Flathead sole</b>	63.1%	37.4%
<b>AI POP</b>	85.4%	13.8%
<b>Rock sole</b>	37.0%	63.9%
<b>Yellowfin sole</b>	59.8%	42.1%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

Under this alternative, relative to Alternative 2, the yellowfin sole threshold program would be less likely to provide an opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when pollock TAC declines relative to yellowfin sole. The primary reason is the allocation of the ITAC above the threshold would favor the Non-AFA Trawl CP sector and would diminish the yellowfin sole allocation to the general limited access fishery when ITAC exceeded the 100,000 mt threshold from 48 percent to 30 percent. Yellowfin sole ITAC above the threshold would be distributed 70 percent to the Non-AFA Trawl CP sector and 30 percent to all other trawlers. Constraining the success of the threshold program, under this alternative, is the lack of halibut PSC. Like Alternative 2, this alternative does not include reallocation of halibut PSC as part of the rollover provisions, so sectors will have to rely on their initial halibut allowance to harvest any groundfish that is rolled over to them. Table ES-7 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels under Alternative 3.

Although it cannot be determined with any certainty, the PSC allocation percentages under this alternative could result in an allocation to the Non-AFA Trawl CP sector that may be insufficient for harvesting their entire allocation of the target species, if the sector cannot reduce its PSC catch rates substantially from current levels. In contrast, the remaining portion of halibut PSC reserved for all other trawlers should be sufficient to harvest the remaining portion of unallocated groundfish. Alternative 3 also includes a reduction in the calculated PSC apportionments to the Non-AFA Trawl CP sector by an additional 5 percent. Table ES-8 provides the PSC allocation under Alternative 3.

Like Alternative 2, 26 vessels appear to qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

**Table ES - 7 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 3.**

<b>TAC</b>	<b>100,000</b>	<b>110,000</b>	<b>120,000</b>	<b>130,000</b>	<b>140,000</b>
CDQ allocation (10%)	10,000	11,000	12,000	13,000	14,000
ICA (Assumed 5%)	4,500	4,950	5,400	5,850	6,300
<b>ITAC</b>	<b>85,500</b>	<b>94,050</b>	<b>102,600</b>	<b>111,150</b>	<b>119,700</b>
Non-threshold Trawl limited access allocation	34,371	37,808	63,645	44,682	48,119
Non-threshold Non-AFA Trawl CP Sector allocation	51,129	56,242	61,355	66,468	71,581
Threshold allocation to trawl limited access			780	3,345	5,910
Threshold allocation to Non-AFA Trawl CP sector			1,820	7,805	13,790
<b>Total allocation for trawl limited access</b>	<b>34,371</b>	<b>37,808</b>	<b>64,425</b>	<b>48,027</b>	<b>54,029</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>51,129</b>	<b>56,242</b>	<b>63,175</b>	<b>74,273</b>	<b>85,371</b>

**Table ES - 8 PSC allocations for Alternative 3 based on percentages from allocated Amendment 80 species multiplied by the total trawl PSC usage from 1995 to 2002**

<b>PSC Species</b>	<b>Percent of PSC usage using average of annual percents</b>
Halibut	35.59%
Red king crab	34.98%
<i>C. opilio</i>	44.51%
Zone 1 <i>C. bairdi</i>	31.94%
Zone 2 <i>C. bairdi</i>	47.22%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

Under Alternative 3, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

To form a cooperative under this alternative, 67 percent of the eligible vessels would be required. If the calculation is based on vessels, and 26 vessels are in the sector, then 17 vessels would be required to meet the 67 percent threshold. Those qualified participants who elect not to join a cooperative would participate outside the cooperative but within the sector (sector limited access fishery).

Under Alternative 3, the allocation of the primary target species and PSC allowance between the cooperative and the sector limited access fishery would be based on the total catch of the allocated species to the eligible license holders include in each pool for the years 1995 to 2003. Each license holder must drop its three lowest years of total catch for each of the allocated species. Given that is not possible to determine with certainty which vessels will join the cooperative very little can be said about the impacts of this alternative will have on the distribution of catch, other than it will vary somewhat compared to Alternative 2.

Using total catch during the years 1995-2003 drop 3 years, the number of vessels that would be below the minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be zero.

The allocation of Atka mackerel under Alternative 3 would be based on total catch for the years 1995-2003, drop 3 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history (non-mackerel vessels) will receive 3.48 percent of the BSAI Atka mackerel of which 1.87 percent would be from the EAI/BS, 1.38 percent would be from the CAI, and .23 percent from the WAI. Applying to the 2005 TAC, the non-mackerel vessels would receive 15.7 percent of the EAI/BS TAC and 2.5 percent of the CAI TAC. After deducting the allocations to the non-mackerel

vessels, the remaining 97 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's Atka mackerel allocation.

Consolidation would be limited under Alternative 3. Although numbers of persons over the cap cannot be reported for the Atka mackerel and AI POP fisheries to protect confidential data, no companies are over the cap for yellowfin sole, rock sole, and flathead sole. In general, the changes in the economic impacts of a 50 percent cap versus no cap are small. In either case, the number of vessels in the fishery could be reduced to the minimum number need to harvest the entire allocation.

The sideboard caps under Alternative 3 would be based on the total catch of the Non-AFA Trawl CP sector relative to the total catch of all sectors. Using total catch, as compared to retained catch, tends to reduce the size of the sideboard caps for the Non-AFA Trawl CP sector. Smaller caps will reduce the amount of revenue that the Non-AFA Trawl CP sector can generate. However, they will provide more fish for other sectors to harvest. Whether the other sectors will increase their participation and retention in fisheries other than Pacific cod and select other fisheries is unknown.

Sideboard caps will be set for both GOA groundfish and halibut fisheries under this alternative. Groundfish sideboard caps will have the greatest impact on species that close due to the TAC being harvested (see Tables ES-9, ES-10, and ES-11). These species are typically Pacific Ocean Perch, Pelagic shelf rockfish, northern rockfish, and Pacific cod. Other species are typically closed as a result of halibut PSC constraints.

**Table ES - 9 GOA sideboard estimates and average historic catch**

Species	Alternative 3		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Pollock</b>			
Pollock 610	0.2%	61	120
Pollock 620	0.1%	34	100
Pollock 630	0.1%	19	
Pollock 640	0.1%	2	
<b>Central Gulf</b>			
Arrowtooth Flounder	15.2%	3,795	7,750
Deep Water Flatfish	10.0%	335	252
Shallow Water Flatfish	2.9%	377	173
Flathead Sole	24.4%	1,222	369
Rex Sole	78.7%	5,777	2,317
Pacific Ocean Perch	RDP	RDP	4,179
Rougheye Rockfish	50.1%	279	495
Shortracker Rockfish	50.1%	162	
Thornyhead Rockfish	39.1%	395	210
Pelagic Shelf Rockfish	RDP	RDP	1,620
Northern Rockfish	RDP	RDP	1,156
Other Rockfish	0.8%	2	233
Pacific Cod	4.0%	1,003	2,024
Sablefish	23.1%	335	524

Species	Alternative 3		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Western Gulf</b>			
Arrowtooth Flounder	40.3%	3,224	4,218
Deep Water Flatfish	4.3%	14	9
Shallow Water Flatfish	39.7%	1,787	143
Flathead Sole	57.6%	1,152	314
Rex Sole	88.1%	1,480	572
Pacific Ocean Perch	85.0%	2,182	1,456
Rougheye Rockfish	63.5%	119	161
Shortracker Rockfish	63.5%	98	
Thornyhead Rockfish	39.7%	163	116
Pelagic Shelf Rockfish	55.5%	209	135
Northern Rockfish	72.3%	584	443
Other Rockfish	4.8%	2	23
Pacific Cod	1.9%	298	553
Sablefish	41.1%	209	116
<b>West Yakutat</b>			
Deep Water Flatfish	29.9%	634	34
Rex Sole	64.8%	868	35
Flathead Sole	46.6%	1,398	8
Shallow Water Flatfish	0.1%	2	0
Arrowtooth Flounder	73.0%	1,825	18
Sablefish	49.2%	151	80
Pacific Ocean Perch	93.5%	786	784
Other Rockfish	50.0%	65	20
Pelagic Shelf Rockfish	90.3%	191	116
<b>Entire Gulf</b>			
Atka Mackerel	71.7%	430	178
Other Species	2.1%	291	853

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/TU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the GOA, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Given that this alternative would decrease the Non-AFA Trawl CP sector's halibut PSC cap by about 36 mt compared to Alternative 2 and 50 mt under Alternative 4, they are expected to be worse off under this alternative compared to the other two alternatives being considered. Other participants in the GOA fisheries would fair better under this alternative.

**Table ES - 10 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				Total
	1	2	3	4	
	<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>				
Alt 3	57.47 (2.87%)	189.28 (9.46%)	218.64 (10.93%)	98.17 (4.91%)	563.56 (28.18%)
	<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>				
Alt 3	20.59 (1.03%)	41.87 (2.09%)	36.77 (1.84%)	48.13 (2.41%)	147.35 (7.37%)

Source: NPFMC summary of NMFS weekly PSC reports.

Note: Data for 2004 was not included in this report. A trawl PSC allotment of 2,000 mt was assumed.

BSAI sideboard caps are set only for Alternative 3. The sideboard amounts are shown in the table below. Members of industry in and the Council have indicated that the primary BSAI directed fisheries are already or are in the process of being rationalized. Therefore, the impact of excluding BSAI sideboard caps is expected to be relatively small. Implementing the caps shown in the following table is expected to provide minimal amounts of protection for vessels outside the Non-AFA Trawl CP sector.

**Table ES - 11 BSAI Sideboard estimates and average historic catch**

Species	Alt. 3			Average Catch of Non-AFA Trawl CPs (95-03)
	2005 ITAC (mt)	Sideboard %	Estimated Sideboard (mt)	
<b>Bering Sea</b>				
Other Rockfish	391	51.37%	201	138
Pacific Ocean Perch	1,190	11.46%	136	231
Sablefish (Trawl)	1,037	73.83%	766	221
Greenland Turbot	2,295	16.99%	390	1,077
<b>Aleutian Islands</b>				
Other Rockfish	502	35.73%	179	315
Sablefish (Trawl)	557	62.61%	349	22
Greenland Turbot	680	19.38%	132	165
<b>Bering Sea &amp; Aleutians</b>				
Arrowtooth Flounder	10,200	20.13%	2,053	9,351
Northern Rockfish	4,625	4.25%	197	4,026
Other Flatfish	2,975	11.90%	354	2,138
Alaska Plaice	6,800	11.90%	809	
Other Species	24,650	2.25%	554	8,892
Pacific Cod - Trawl CP	44,779	*	*	25,257
Shorthead Rockfish	552	38.13%	210	368
Rougheye Rockfish	207	38.13%	79	

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the BSAI, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

In meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternatives 3 than under Alternative 1, but less so than under Alternatives 2 and 4. Under Alternative 3, sector participants that join the cooperative can pool their annual vessel GRS rates across the cooperative. By averaging individual vessel retention rates across the cooperative, this could help to reduce operation costs for those vessels limited by the GRS. However, unlike Alternatives 2 and 4, which allow multiple cooperatives to form, Alternative 3 would allow only one cooperative. As a result, there is a chance that some members of the sector will not join the cooperative thus reducing the benefits of GRS pooling. Overall, participants in the cooperative will seek to minimize their cost of meeting the GRS to the extent possible.

#### **Alternative 4**

In April 2006, the Council selected preliminary preferred allocation percentages for the Non-AFA Trawl CP sector. Allocation percentages selected were 82.5 percent for yellowfin sole, 97 percent for rock sole, and 98 percent flathead sole. For Atka mackerel and AI POP, the Council selected an approach that would phase in the final allocation percentages over a period of years. For the Atka mackerel that period would be four years and for AI POP it would be two years. The allocation percentages for Atka mackerel would start at 98 percent for EAI/BS and CAI and then be reduced 2 percent every year for four years culminating at a 90 percent allocation. For WAI, the Non-AFA Trawl CP sector would be allocated 100 percent of the Atka mackerel. For EAI and CAI AI POP, the allocation would start at 95 percent the first and decrease to 90 percent the second year. For WAI POP, the allocation to the sector would be 98 percent.

Table ES-12 shows the 2005 allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery for each of the allocated species under Alternative 4. Under this alternative, the allocations of yellowfin sole, rock sole, and flathead sole are similar to the allocations under Alternative 2 in that the allocations are expected to be sufficient to keep the Non-AFA Trawl CP sector's groundfish catch levels about the same as their historic catch. Atka mackerel and AI POP would be slightly less than Alternative 2 at the end of the phase in reduction. The percentages used for the Atka mackerel and AI POP allocations in the table are the final allocation percents. In reviewing the allocation amounts to the trawl limited

access fishery in this alternative, it is likely there would be insufficient amounts of Amendment 80 species for a directed fishery with the exception of yellowfin sole. In general, this is indicative of the historical catch history of the trawl limited access participants since before the implementation of the AFA in 2000.

**Table ES - 12 Allocations of Amendment 80 species under Alternative 4**

	Yellowfin sole	Rock sole	Flathead sole	POP*			Atka Mackerel*		
				EAI	CAI	WAI	EAI/BS	CAI	WAI
<b>2005 TAC</b>	<b>90,686</b>	<b>41,500</b>	<b>19,500</b>	<b>3,080</b>	<b>3,035</b>	<b>5,085</b>	<b>7,500</b>	<b>35,500</b>	<b>20,000</b>
CDQ allocation (10%)	9,069	4,150	1,950	308	304	509	750	3,550	2,000
AFA CV Sideboard limit	5,281	1,274	886	21	7	0	22	3	0
AFA CP Sideboard limit	18,772	1,382	632	55	3	18	0	3,674	3,600
Jig allocation (1% of Atka mackerel for EAI/BS)	-	-	-	-	-	-	68	-	-
ICA (Assumed 5%)	4,081	1,868	878	139	137	229	334	1,598	900
<b>2005 ITAC</b>	<b>77,537</b>	<b>35,483</b>	<b>16,673</b>	<b>2,633</b>	<b>2,595</b>	<b>4,348</b>	<b>6,348</b>	<b>30,353</b>	<b>17,100</b>
Trawl limited access allocation	13,569	1,064	333	263	259	0	635	3,035	342
Non-AFA Trawl CP Sector allocation	63,968	34,418	16,339	2,370	2,335	4,348	5,714	27,317	16,758

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

\* The percentages used for the Atka mackerel and AI POP allocations are the final allocation percents

Table ES-12 also provides CDQ allocation amounts under the preliminary preferred alternative, AFA sideboard limits for the allocated species, and the ICA. The Council in April 2006, clarified that the ICA is intended for the both the fixed gear sectors and the trawl limited access fishery to account for incidental catch. The Council also clarified that the ICA will be determined prior to allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery. The Council also clarified in April 2006 that the sideboard limits for the AFA sectors would be determined after the CDQ allocations. Based on clarification, it would appear that the sideboards have no effect because the sideboard is greater than the allocation to the trawl limited access fisheries for most of the species. The only exception would be the AI POP and EAI/BS Atka mackerel. In these cases, the sideboard is less than allocation to the trawl limited access fishery. The primary reason for the ineffectiveness of the sideboard limit under this action is due to the Non-AFA Trawl CP sector receiving allocations of these species. One of the primary purposes of the AFA sideboards was to prevent the AFA sectors from expanding beyond their historic catch history in these fisheries and potentially harming the Non-AFA Trawl CP sector.

Alternative 4 includes a rollover provision like Alternative 3, but the alternative also includes PSC rollovers. Under this provision, NOAA Fisheries would review the fisheries for the purpose of rollovers of both Amendment 80 species and PSC on May 1 and August 1.

Under this alternative, the yellowfin sole threshold program could provide some increased opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when BSAI pollock TAC declines relative to yellowfin sole depending on the allocation percentage below the threshold. In this alternative, 60 percent of the TAC over 125,000 mt would be assigned to the Non-AFA Trawl CP sector. The remaining 40 percent of the TAC would be apportioned to the trawl vessels that are not a part of the Non-AFA Trawl CP sector. Table ES-13 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels under Alternative 4.

**Table ES - 13 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations at different TAC levels for Alternative 4.**

<b>TAC</b>	<b>125,000</b>	<b>140,000</b>	<b>150,000</b>	<b>160,000</b>	<b>170,000</b>
CDQ allocation (10%)	12,500	14,000	15,000	16,000	17,000
ICA (Assumed 5%)	5,625	6,300	6,750	7,200	7,650
<b>ITAC</b>	<b>106,875</b>	<b>119,700</b>	<b>128,250</b>	<b>136,800</b>	<b>145,350</b>
Non-threshold Trawl limited access allocation	18,703	20,948	21,876	23,940	25,436
Non-threshold Non-AFA Trawl CP Sector allocation	88,172	98,753	103,124	112,860	119,914
Threshold allocation to trawl limited access			1,300	4,720	8,140
Threshold allocation to Non-AFA Trawl CP sector			1,950	7,080	12,210
<b>Total allocation for trawl limited access</b>	<b>18,703</b>	<b>20,948</b>	<b>23,176</b>	<b>28,660</b>	<b>33,576</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>88,172</b>	<b>98,753</b>	<b>105,074</b>	<b>119,940</b>	<b>132,124</b>

The effects of halibut PSC allowance under Alternative 4 are a little more difficult to determine given the Council has two options under consideration: 1) allocate halibut PSC based on historical usage of PSC in all fisheries by the Non-AFA Trawl CP sector for year combinations 2002-2004 (Suboption 6.1.1) with a reduction of the initial limit to 80 percent, which would be phased at 5 percent per year for four years starting in the second year of the program; 2) allocate halibut PSC based on the sector's percentage allocations of the Amendment 80 species multiplied by the trawl PSC amounts apportioned to the Amendment 80 species annually (Suboption 6.1.4) with minimum and maximum amounts for the Non-AFA Trawl CP sector and the trawl limited access fishery. For the Non-AFA Trawl CP sector, the minimum halibut PSC limit would be 2,153.5 mt and the maximum limit would be 2,403.5 mt. For the trawl general limited access fishery, the minimum halibut PSC limit would be 903.5 mt and the maximum limit would be 1,153.5 mt.<sup>1</sup>

Under Suboption 6.1.1 the halibut PSC apportioned to the Non-AFA Trawl CP sector would be 80 percent with the remaining 20 percent apportioned to the trawl limited access fishery. Applying these percentages to the 3,307 mt trawl halibut apportionment would result in 2,646 mt for the Non-AFA Trawl CP sector and 661 mt of halibut to the trawl limited access fishery. Reducing the 2,646 mt by 20 percent would result in the Non-AFA Trawl CP sector having 2,117 mt for use in directed fishing, while the remaining 529 mt of halibut would stay in the water.

Under Suboption 6.1.4 using Council selected percentages, the April 2006 Pacific cod allocation to the Non-AFA Trawl CP sector, and 2005 TAC, the allocation to the Non-AFA Trawl CP sector would be 2,158 mt since the calculated PSC apportionment is slightly above the 2,153.5 mt minimum allocation. This assumes a 90 percent allocation for both AI POP and Atka mackerel across all subareas combined to the Non-AFA Trawl CP sector<sup>2</sup>. The remaining 1,149 mt would be apportioned to the trawl limited access fishery. One of the potential advantages of Suboption 6.1.4 compared to Suboption 6.1.1 is that PSC apportionment will be adjusted annually as the TAC of the Amendment 80 species changes relative to one another. To some degree this approach better reflects the dynamic nature of the North Pacific fishery. However, one of the disadvantages of Suboption 6.1.4 compared to Suboption 6.1.1 is there is little room for the Council to take advantage of any potential PSC savings resulting from cooperatives while at the same time staying above the minimum apportionment for the Non-AFA Trawl CP sector (2,153.5 mt).

<sup>1</sup> Under the preliminary preferred alternative, the portion of PSC reserved for the CDQ program will increase from 7.5 percent to 10 percent resulting in a reduction in the trawl halibut PSC from 3,400 mt to 3,307 mt. The minimum and maximum allocation amounts were adjusted evenly to account for the reduction in trawl halibut PSC.

<sup>2</sup> Both AI POP and Atka mackerel allocations between sectors will be phased in over time. For EAI and CAI POP, the allocation would be 95 percent the first year and 90 percent the second year. For WAI, the allocation would be 98 percent. For EAI/BS and CAI Atka mackerel, the allocation would be 98 percent the first year, decreasing in 2 percent increments over a four year period to 90 percent. For WAI, 100 percent of the Atka mackerel would be allocated to the Non-AFA Trawl CP sector.

Since the maximum allocation to the Non-AFA Trawl CP sector under this option is 2,403.5 mt, most of the potential PSC saving is shifted to the trawl limited access fishery.

For crab PSC under Alternative 4, the Council selected percentages based on results from the analysis (see far right column in Table 3-43). The following are the crab PSC limits selected by the Council under this alternative for the Non-AFA Trawl CP sector:

Red king crab	37.52%
<i>C. opilio</i>	61.44%
Zone 1 <i>C. bairdi</i>	52.64%
Zone 2 <i>C. bairdi</i>	29.59%

In addition, the crab PSC limit to the Non-AFA Trawl CP sector would be reduced to 80 percent of the initial allocation. This reduction would be phased in gradually at 5 percent per year starting in the second year of the program for a total of four years to phase in the PSC limit reduction.

Under Alternative 4, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

Based on the eligibility requirements under this alternative, 26 vessels appear to qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

Under Alternative 4, 30 percent of the eligible vessels would be needed to form a cooperative. In addition, at least three unique entities are required for cooperative formation (using the 10 percent AFA rule). Since under Alternative 4 there are likely to be 26 qualified vessels, at least seven vessels would be needed to form a cooperative. If each of the cooperatives had the minimum required (seven vessels), three cooperatives would be formed in the Non-AFA Trawl CP sector.

For Alternative 4, the allocation of the Amendment 80 species and PSC allowance between the cooperatives and the sector limited access fishery would be based on total catch of the allocated species of cooperative participants and the pool of sector limit access fishery participants using years 1998-2004 dropping the two lowest annual catches. This alternative also includes the minimum allocation provision for vessels with no harvests after 1997.

Using total catch during the years 1998-2004 drop 2 years, the number of vessels that would be below the minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Similar to Alternative 2, confidentiality requirements limit the amount information that can be released.

The Atka mackerel allocation under Alternative 4 would be based on total catch for the years 1998-2004 drop 2 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history will receive 6 percent of the BSAI Atka mackerel of which 4.6 percent would come from EAI/BS; 1.2 percent would come from the CAI; and the remaining .2 percent would come from the WAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 38.6 percent of the EAI/BS TAC, 2.1 percent of the CAI TAC, and 0.6 percent of the WAI. After deducting the allocation to the non-mackerel vessels, the remaining 94 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's BSAI Atka mackerel allocation.

Consolidation would be limited under Alternative 4. At least one company was over the 30 percent cap under this alternative. The exact number cannot be reported to protect confidential data. This information in general indicates that the sector can undergo some consolidation under this alternative. Allowing the

fleet to consolidate should enable the remaining companies to operate more efficiently. Improvements will be due to the cost savings that result from retiring vessels that are the least efficient.

In addition to the ownership caps, the Council also included a 10 percent vessel use cap in Alternative 4. A vessel use cap would limit the percentage of the Non-AFA Trawl CP sectors allocation of the five species that a vessel could harvest ensuring that a minimum number of vessels remain in the fishery. At the 10 percent level 1 to 4 vessels would be affected. While this does not indicate the number of vessels that would be affected by vessel use caps in the future, it does show that selecting a 10 percent use cap could prohibit vessels from harvesting their historic percentage of the sector's catch. The alternative includes a grandfather provision for those vessels that have harvested over the 10 percent cap. If a vessel is assigned an amount of the sector's allocation above the use cap, the vessel would be grandfathered allowing it to harvest the percentage of the sector's allocation equal to their initial allocation. However, these vessels would be unable to harvest any portion of another vessel's allocation, in addition to their own.

Limiting the harvest of vessels over the cap may prohibit some of the most economically efficient harvesters from catching as much of the sector allocation as they would without use caps. Limiting their harvest could restrict efficiency improvements. If less efficient vessels are required to harvest more of the sector's allocation, net benefits to the Nation could be lower and the compensation to vessels wishing to exit the fishery will be lower.

Sideboard limits within Alternative 4 would implement the program outlined in Table ES-14 below. No sideboard limits would be established for the BSAI. Any sideboard limits imposed in the GOA would apply to the vessels in the Non-AFA Trawl CP sector, as well as the LLPs associated with those vessels.

**Table ES - 14 Summary of GOA sideboards for Alternative 4**

Annual Sideboard Limit	All C/P Cooperatives	All C/P Limited Access
<b>Catch limits ... See 12.4.4</b> Western GOA Pollock, Pacific cod, POP, Pelagic Shelf, and Northern Rockfish	All C/P Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a sideboard limit in that area and season	All C/P Non Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a Sideboard limit in that area and season
Central GOA Pollock, Pacific cod	Sideboard limit cap (% set by Council at time of motion) = % of TAC.	Sideboard limit cap (% set by Council at time of motion) = % of TAC.
West Yakutat Pollock, Pacific cod, POP, and Pelagic Shelf Rockfish.	Co-op Sideboard limit = Catch History of all Amendment 80 co-operative vessels during 1998-2004 $/ \text{Catch History of All Amendment 80 C/Ps during 1998-2004} \times \text{sideboard limit cap.}$ Sideboard limits would be divided among cooperatives based on the amount of sideboard history assigned to the vessels that join each cooperative.	Limited Access Sideboard limit = $\text{Catch History of all Amendment 80 limited access vessels during Component 10 years}$ $/ \text{Catch History of All Amendment 80 C/Ps during Component 10 years} \times \text{sideboard limit cap.}$

<p><b>See 12.4.5</b> Central GOA POP, Pelagic Shelf, and Northern Rockfish</p>	<p>Does not apply as long as Rockfish Pilot Program is in place, otherwise, compute the CGOA rockfish sideboard limit using the same method as described above.</p>	<p>Does not apply as long as Rockfish Pilot Program is in place, otherwise, compute the CGOA rockfish sideboard limit using the same method as described above.</p>
<p><b>See 12.4.3 Halibut mortality limits ...</b> GOA-wide (1) Shallow-water limit, &amp; (2) Deep-water limit  See Table ES-15 below:</p>	<p>All C/P Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a halibut PSC limit for each seasonal trawl apportionment for the two complexes.  <b>Seasonal apportionment already set by Council in Table ES-15 below.</b>  (1) Once the shallow-water cap is met, all directed fishing for all species in the shallow-water complex is closed in the GOA;  (2) Once the deep-water cap is met, all directed fishing for all species in the deep-water complex is closed in the GOA</p>	<p>All C/P Non Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a halibut PSC limit for each seasonal trawl apportionment for the two complexes.  <b>Seasonal apportionment already set by Council in Table ES-15 below.</b>  (1) Once the shallow-water cap is met, all directed fishing for all species in the shallow-water complex is closed in the GOA;  (2) Once the deep-water cap is met, all directed fishing for all species in the deep-water complex is closed in the GOA.</p>
<p><b>Inferred from See 12.4.1 Prohibited Directed Flatfish Fishing ...</b> All directed GOA flatfish fisheries</p>	<p>If a vessel gave rise to an LLP with catch history <b>less</b> than or equal to 10 weeks in directed flatfish fishing in any GOA flatfish fishery (not 10 weeks/area) during the years selected under component 10 then that vessel and any LLP licenses used on the vessel that generated history for that vessel (<b>See 12.4.6</b>) will be prohibited from directed fishing in all GOA flatfish fisheries.</p>	
<p><b>Inferred from 12.4.1 Flatfish Sideboard Limit ...</b> All directed GOA flatfish fisheries.</p>	<p>If a vessel gave rise to an LLP with catch history <b>more</b> than 10 weeks in directed flatfish fishing in any GOA flatfish fishery (not 10 weeks/area) during 1998-2004 then that vessel and LLP associated with that vessel (<b>See 12.4.6</b>) will <u>not</u> be subject to a directed fishing sideboard limit for that flatfish fishery in that area and that season. A total of 13 Non-AFA Trawl CP vessels would be allowed to continue fishing in the GOA flatfish fisheries.</p>	
<p><b>See 12.4.2 Exemption from GOA halibut and flatfish sideboard limits in West Yakutat, Central GOA, and Western GOA</b></p>	<p>If a vessel has fished 80% of their weeks fished in the GOA from 2000-2003 in GOA flatfish fisheries, that vessel will be exempt from Amendment 80 halibut sideboards in the GOA and may participate fully in the GOA open-access flatfish fisheries. The history of this vessel will not contribute to the non-AFA Trawl CP sideboards and its catch will not be subtracted from these sideboards. <b>One vessel met this exemption's requirements.</b></p>	

GOA sideboard percentages for the following species and areas are included under Alternative 4 (see Table ES-15). The sideboards are designed to limit participation in the pollock, Pacific cod, and directed rockfish species not allocated under the Rockfish Pilot Program. The pollock and Pacific cod sideboards

will constrain the harvest of these species by limiting vessel's incentives to join the inshore component of the GOA fleet. Rockfish sideboard limits are less restrictive, but could provide some protections to the other GOA vessels operating in pelagic shelf rockfish fisheries.

**Table ES - 15 GOA sideboard estimates and average historic catch**

Species	Alternative 4		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Pollock</b>			
Pollock 610	0.3%	91	120
Pollock 620	0.2%	34	100
Pollock 630	0.2%	19	
Pollock 640	0.2%	4	
<b>Central Gulf</b>			
Pacific Ocean Perch	RDP	RDP	4,179
Pelagic Shelf Rockfish	RDP	RDP	1,620
Northern Rockfish	RDP	RDP	1,156
Pacific Cod	4.4%	1,355	2,024
<b>Western Gulf</b>			
Pacific Ocean Perch	99.4%	2,549	1,456
Pelagic Shelf Rockfish	76.4%	288	135
Northern Rockfish	100.0%	808	443
Pacific Cod	2.0%	314	553
<b>West Yakutat</b>			
Pacific Cod	3.4%	*	*
Pacific Ocean Perch	96.1%	808	784
Pelagic Shelf Rockfish	89.6%	182	116

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the GOA, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Note: n/a - Indicates that no sideboard is implemented. Only vessels with a sufficient number of weeks fished in GOA flatfish fisheries may participate in a directed flatfish fishery.

RDP - Indicates that species will be managed under the Rockfish Demonstration Program

Finally, GOA halibut PSC caps would be set based on historic usage of halibut PSC. Table ES-16 shows the percentages of the Deep and Shallow water halibut allotments by quarter that would be issued under this alternative. A total of 760.5 mt of halibut would be assigned to the Non-AFA Trawl CP sector. This is a larger sideboard limit than proposed under Alternatives 2 (747 mt) or Alternative 3 (711 mt). Therefore, Alternative 4 would provide the Non-AFA Trawl CP sector the greatest opportunity to participate in the GOA flatfish fisheries. These fisheries typically close due to halibut mortality caps being reached. The difference in catch and revenue that will result from the various caps cannot be estimated with certainty. The magnitude of the difference will depend on halibut bycatch rates which may change.

**Table ES - 16 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				Total
	1	2	3	4	
<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>					
Alt 4	56.82 (2.84%)	238.49 (11.92%)	231.91 (11.60%)	81.87 (4.09%)	609.09 (30.45%)
<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>					
Alt 4	16.93 (0.85%)	38.47 (1.92%)	41.19 (2.06%)	54.79 (2.74%)	151.38 (7.57%)

With regards to meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternative 4 than under Alternative 1. Like the previous two alternatives, sector participants that join a cooperative can pool their individual annual GRS rates across the cooperative thereby helping to reduce operation costs for those vessels limited by the GRS. Overall, given the flexibility of this alternative, each cooperative will minimize the cost of meeting the GRS to the extent possible.

### **Effects on Catcher Processor Efficiency**

Production efficiency of the Non-AFA Trawl CP sector under the status quo is limited to some degree by the race for fish under the current LLP fishery and GRS. Sector participants are compelled to race for groundfish with other sector participants, as well as other participants in other sectors throughout the period the fisheries are open. Generally, participants in the Non-AFA Trawl CP sector are equipped to produce whole and head and gut frozen products. Production of these products is likely to continue, if the status quo is maintained. Participants in the Non-AFA Trawl CP must comply with GRS, which could limit production efficiency. With higher retention rates required for vessels greater than 125 ft, sector participants are constrained in production efficiency.

Under Alternatives 2 and 4 more than Alternative 3, the Non-AFA Trawl CP sector is likely to realize some gains in production efficiency capturing greater rents from the allocated fisheries despite having to comply with GRS. Under Alternatives 2 and 4, most eligible participants in the Non-AFA Trawl CP sector are likely to join a cooperative, since operations in the limited access fishery are likely to be less efficient (and less profitable) and it will be easier to meet the cooperative formation requirements. However, there is some potential under Alternative 3 that some eligible participants may elect not to join a cooperative.

### **Effects on the CDQ Program**

Alternatives 2, 3, and 4 would increase CDQ percentage allocations for both primary target and incidental catch species. Under Alternatives 2 and 4, CDQ percentage allocations for each of the primary target species identified in Component 1 and associated secondary species taken incidental in the primary trawl target fisheries would increase to 10 percent. Under Alternative 3, the percentage allocations for both target and incidental catch species would increase to 15 percent. The PSQ percentage allocations would increase proportionately under each alternative, as well. Under Alternatives 2 and 4, the PSQ percentage allocation would increase to 10 percent, and under Alternative 3 would increase to 15 percent. Currently, the CDQ Program receives 7.5 percent of each groundfish TAC and PSC limit as CDQ and PSQ reserves. These reserves are further allocated among six CDQ managing organizations (CDQ groups). CDQ groups plan and conduct fishing operations for their CDQ allocations, and then receive royalties from the harvest of their CDQ. This revenue is used to provide a means for starting and supporting commercial fisheries business activities in CDQ communities in western Alaska.

CDQ groups have had varied, but increasing, success in harvesting their existing CDQ allocations for primary target species. In the last several years, CDQ groups have harvested the majority of their yellowfin sole, Atka mackerel, and Pacific Ocean perch allocations. They have not been very successful at harvesting their rock sole and flathead sole CDQ allocations. The increased CDQ percentage allocations for primary target species considered under Alternative 2, Alternative 3, and Alternative 4 could allow CDQ groups to receive larger CDQ allocations, if the TACs for these species remained constant or increased. If fully harvested, this could provide additional CDQ royalties to CDQ groups. Harvesting any increased allocations of target species probably would result in increased catch of incidental catch species and prohibited species in the CDQ fisheries. The increases to CDQ and PSQ percentage allocations for incidental catch species proposed under Alternatives 2, 3, and 4 are meant to allow the CDQ Program to have adequate CDQ reserves to account for the additional catch of incidental and prohibited species that could occur along with the catch of increased allocations of primary target species. The actual benefits that each CDQ group would receive from increased primary species allocations cannot be estimated given currently available information. The relatively small size of these

quotas, variability in the amount of each primary species harvested in past years, and lack of specific information about CDQ royalty rates makes it difficult to estimate the future CDQ Program benefits associated with increasing CDQ percentage allocations for primary target species.

### **Effects on Consumers**

Although production of the sector is typically high quality, some quality improvements could be achieved as cooperative allocations will remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Improvements will be limited to those in a cooperative, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

Production of the Non-AFA Trawl CP sector participants is likely to be similar to current production under Alternatives 2 and 4. The allocations under Alternative 3 could reduce the amount of the flatfish species allocated to the Non-AFA Trawl CP sector. If the portion of the TACs assigned to sectors, other than the Non-AFA trawl CP sector, is not harvested, and the amounts of those fish rolled-over to the Non-AFA Trawl CP sector cannot be harvested due to halibut constraints, the reduced supply could negatively impact consumers through higher prices. Market prices for these species will depend on other world flatfish markets. If substitute products are available at similar prices, consumer impacts would be small. The lack of information on these markets precludes quantitative estimates of the impacts on U.S. consumers.

### **Effects on Environmental/Non-use Benefits**

Public non-use benefits derived from the management of healthy stocks of these species are likely to be maintained, if the current management is perpetuated.

Under Alternatives 2, 3 and 4, NOAA Fisheries will make annual, exclusive cooperative allocations for the five allocated species. The proposed action will require eligible Non-AFA Trawl CP vessels under 125 ft length overall to meet the GRS. These measures should have the effect of reducing bycatch and discards, contributing additional non-use benefits that might arise from productive use of the resource. In addition, if Alternative 3 reduces the harvest of the allocated species below the allowed catch, the unharvested fish will remain in the BSAI ecosystem, which is considered a benefit to the environment.

### **Effects on Management, Monitoring, and Enforcement Costs**

In addition to the monitoring challenges documented under other quota programs, Amendment 80 includes additional catch accounting and compliance challenges specific to this type of dedicated access program. To address these challenges, additional requirements will be needed to manage these sector allocations and allow single or multiple cooperatives to function. Proposed monitoring components for all non-AFA trawl CPs while fishing in the BSAI are described below.

1. All vessels would be required to weigh all catch on NMFS-approved scales and provide an observer work station.
2. All hauls would be available to be observed by NMFS-certified observers.
3. Vessels would be prohibited from having more than one operational line or other conveyance device for the mechanized movement of catch between the scale used to weigh total catch and the location where the observer collects species composition samples.
4. The observer must be able to view all the activities of crew inside the bin locate prior to where the observer collects unsorted catch. The vessel would be required to choose, and have approved at the time of the observer sampling station inspection, one of three options to meet this requirement. These options are:

**Limit Tank Option.** Crew would be prohibited from entering any tank located prior to where the observer collects unsorted catch, unless:

- The flow of fish has been stopped between the tank and the location where the observer collects unsorted catch, and;
- All catch has been cleared from all locations between the tank and the location where the observer collects unsorted catch, and;
- The observer has been given notice that vessel crew must enter the tank, and;
- The observer is given the opportunity to observe activities of the person(s) in the tank.
- The observer has informed vessel personal that he or she has completed all sampling activities.

**Line of sight option.** From the observer sampling station and the location from which the observer collects unsorted catch, an observer must be able to see all areas of the bin where crew could be located. This requirement may be accomplished by creating a viewing port inside the bin, and would be approved by NMFS during the observer sample station inspection.

**Video option.** A vessel may provide and maintain cameras, a monitor, and a digital video recording system for all areas of the bin where crew could be located. The video data must be maintained and made available to NMFS upon request for no less than a 120 day period. This option would also be subject to approval by NMFS at the time of the observer sample station inspection.

5. Unsorted catch would be prohibited from remaining on deck outside of the codend without an observer present, except for fish accidentally spilled from the codend during hauling or dumping.
6. A vessel operator would be required to document the flow of fish within the vessel's factory.
7. Each vessel would be required to provide the opportunity for a pre-cruise meeting.

The costs for the monitoring program include both accounting costs (that are itemized to the extent feasible) and other opportunity costs (that are difficult to quantify). Total costs for scale, sample station, observer requirements, and factory modifications necessary to comply with other proposed requirements for each vessel greater than or equal to 125 ft. range between approximately \$64,045 and \$365,545. Total costs for these categories for each vessel less than 125 ft. range between \$182,225 and \$406,725. Other costs associated with these proposed monitoring requirements could include decreased operating efficiencies or additional crew.

In addition to costs borne by the vessels, increases in the number of observer days and their associated increase in the amount of data collected is expected to raise overall annual costs of the Observer Program. This budgetary increase can be attributed to additional staffing, augmented spending for observer sampling equipment, data entry contracts, and travel associated with inspecting sample stations, and conducting pre-cruise meetings. The Observer Program estimates increased staffing and costs associated with this action to include 3.5 full time equivalent staff positions and approximately \$450,000 annually.

NMFS believes that anticipated benefits of a Non-AFA Trawl CP cooperative as currently outlined, including the expectation of reduced effort and capital inputs through a slower paced fishery substantially depend on these proposed monitoring improvements. A multi-species cooperative, with internal transactions and contracts requires reliable catch accounting to create secure agreements. Because Amendment 80 monitoring requirements would include flow scales, observer stations, observation of every haul, and additional requirements described above; some improvements to management catch accounting may also occur. For example, direct measurement of weight on a flow scale is likely to be more reliable than alternative observer measurements based on volumetrics and density.

### **Effects on Communities**

The fishing communities that are expected to benefit from this proposed action are the locations the vessels offload, take on supplies, and the owners and crew live. Twenty-seven catcher processors appear to be eligible for the Non-AFA Trawl CP sector. Of these vessels, nearly all are based in Seattle. Due to

the large size and diversity of Seattle's economy, community-level impacts are not expected to differ between Alternatives 2, 3 and 4. Significant benefits to other communities that are home to some of the other Non-AFA Trawl CP fleet are not expected. Vessels located in those communities will continue to generate revenue from these fisheries. Changes in benefits to the community could occur, but the magnitude of the change is expected to be relatively small. Impacts on other communities with ties to catcher vessels cannot be quantitatively, but they are expected to be relatively small based on historic participation in the five primary BSAI fisheries and the sideboard caps proposed for other fisheries.

### ***Effects on Net Benefits to the Nation***

Under status quo, producer surplus is expected to remain at current levels until Amendment 79 is implemented. After Amendment 79 is implemented, producer surplus will decline. The amount of the decline is equal to the increased processing and monitoring costs of the vessel. Revenues are assumed to remain constant. However, the potential exists that more inferior products could be produced because of retaining fish that are of a size that are in less demand or of the wrong sex (e.g., rock sole during the roe season). Prices paid by consumers are not expected to increase or decrease because of this action.

### **Alternative 2**

Net benefits to the Nation would likely increase under Alternative 2 relative to Alternative 1. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. Participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the user cap. With fewer vessels, the harvesting costs should also decline. Some additional benefits would also likely accrue from the additional 2.5 allocation for the Amendment 80 species to the CDQ program, which would also benefit from a slower paced fishery.

The alternative would require increased monitoring and enforcement costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches. Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

A producer surplus would likely be generated some net benefits for the Nation under Alternative 2 as a result of pooling individual annual vessel GRS rates. Vessels that join a cooperative would average their individual annual retention rates across all cooperative participants, which would help to reduce operation costs for those vessels limited by the GRS. Overall, each cooperative will seek to minimize the cost of meeting the GRS to the extent possible.

Consumer surplus is expected to increase. The Non-AFA Trawl CP sector will continue to produce mostly frozen round and headed and gutted products primarily. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S. and European consumers, as most of the production from this sector is sold into that market.

### **Alternative 3**

Net benefits to the Nation would likely be smaller under Alternative 3 relative to Alternative 2. It is difficult to compare the changes in Net benefits between Alternatives 1 and 3. The amount of fish the Non-AFA Trawl CP sector can legally harvest under Alternative 3 relative to the status quo, is reduced. However, the benefits of cooperatives are expected to increase the overall efficiency of the fleet. The benefit of a cooperative under this alternative will depend on whether a sufficient number of members of the sector are able to reach agreement and whether persons not in the initial cooperative are able to come to terms with the cooperative. If no cooperative forms, sector efficiency would be similar to that of status quo.

An additional unknown under this alternative is how much of the allocation to the general limited access fishery will be harvested by other sectors, and how efficient will they be when harvesting and processing that catch. The allocation to the general limited access fishery under this alternative exceeds the combined AFA Trawl CP and CV sideboards. Without substantial increases in effort by the Non-AFA Trawl Catcher Vessels, large portions of the allocation to the general limited access fishery would go unharvested. If the other sectors do not harvest their portion of the TAC and large amount of quota are rolled over late in the year, it may be of less value to the Non-AFA Trawl CP fleet than if it was available earlier.

Similar to Alternatives 2 and 4, the Nation would likely see an increase in net benefits from the pooling of individual vessel annual GRS rates while in a cooperative. However, unlike Alternatives 2 and 4, which has the potentially for multiple cooperatives, Alternative 3 allows only one cooperative. As a result, there is a chance that some members of the sector will not join the cooperative thus reducing the benefits of pooling annual vessel GRS across the cooperative. In general, members of the cooperative will seek to minimize the cost of meeting the GRS to the extent possible, thereby creating a producer surplus under this alternative.

Under this alternative, the CDQ Program would be allocated 15 percent of the annual TAC for each of the allocated species. The CDQ program would also receive 15 percent of the TAC for the incidental catch species (with the exception of Pacific cod) taken in the Amendment 80 allocated species. The additional 7.5 percent increase in non-pollock groundfish (except Pacific cod) would likely slow the pace of fishing and processing for participants in the CDQ program, thus potentially reducing expenditures on inputs and increase output slightly. However, the benefits will be reduced if the CDQ program fails to harvest their entire allocation.

Like Alternative 2, this alternative could increase the net benefits to the Nation from the reduction in discards. However, producer surplus will be reduced, from what it could have been due to an increase in vessel monitoring costs.

This alternative is expected to increase consumer surplus. The Non-AFA Trawl CP sector will continue to produce frozen round and headed and gutted products primarily. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S. and European consumers, as most of the production from this sector is sold into that market.

#### **Alternative 4**

Net benefits to the Nation would likely increase under Alternative 4 relative to Alternatives 1, 2, and 3. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. The favorable groundfish allocation for the Amendment 80 species, the allocation of the necessary PSC to harvest the allocation, and the ability to form cooperatives contributes the increase in net benefits to the Nation. These participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the use cap to the extent permitted by the Council. With fewer vessels, the harvesting costs should also decline.

Some additional benefits would also likely accrue from the additional 2.5 percent allocation increase for the Amendment 80 species to the CDQ program. The increased CDQ allocation will slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increase output slightly. If the CDQ program fails to harvest their entire allocation, any amount of allocation left unharvested would tend to reduce the net benefits.

The alternative would also require increased monitoring costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches.

Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

Like in Alternative 2 and 3, produce surplus is likely to decline given that individual vessel retention rates would be averaged across all cooperative participants, helping those vessels with historically low retention rates to lower their operating costs. Collectively, members of each cooperative would seek to minimize their costs of meeting the GRS to the extent possible thereby generating a producer surplus.

Like Alternative 2 and 3, this alternative would likely yield some increase in consumer surplus. Improvements will be limited to those in cooperatives, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Since most participants in the sector are limited in their ability to produce higher processed products, production choice changes are likely to be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

## Environmental Assessment

The Environmental Assessment discusses the environment that would be affected by the alternatives, and then describes the impacts of the alternatives. The following components of the environment are discussed: the primary target species to be allocated under the alternatives, prohibited species, other fish species, benthic habitat and essential fish habitat, marine mammals and seabirds, economic and socioeconomic components, and the ecosystem as a whole.

The current fishery management program, represented by Alternative 1, was analyzed in detail in the *Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement* (NMFS 2004b), the *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (NMFS 2005), and updated in the annual Environmental Assessment of Harvest Specifications for the Years 2005-2006 (NMFS 2004a). These analyses concluded that the groundfish fisheries, in the status quo, are not affecting a significantly adverse impact on the environment.

In most instances, the effects of Alternatives 2, 3 and 4 have been considered together, as there is little difference between these alternatives in terms of their impact on the physical and biological environment. Under these alternatives, a sector allocation is made that will allow the formation of cooperatives. This will likely change fishing patterns, and may distribute fishing for the primary target species over a longer season or more diverse area. Harvest levels for the primary target species will, remain unaffected, as well the existing management measures that distribute the harvest in space and time. As a result, the impact of the alternatives on these species is not assessed to be significant.

Incidental catch patterns may change as a result of Alternatives 2, 3 and 4, as the fisheries endeavor to meet the groundfish retention standard and reduce discards. In addition, an option under the alternatives would require the fisheries to reduce their historic proportion of prohibited species catch. The increased flexibility afforded to the Non-AFA Trawl CP sector under these alternatives should allow the sector to reduce discards. However, prohibited species catch limits and harvest quotas for other incidental catch species will continue to be set at biologically sustainable levels under these alternatives, and regardless of the ability of the sector to reduce its incidental catch, the impact to the sustainability of these incidental species is not assessed to be significant.

As the amount of overall fishing effort under the alternatives is likely to remain the same or decrease, the alternatives are unlikely to result in a change that would significantly impact seabirds or marine mammals that interact with the groundfish fisheries. Similarly, minimal and temporary impacts to benthic habitat and essential fish habitat are unlikely to be aggravated by these alternatives.

The economic and socioeconomic impacts of the alternatives are summarized in the RIR above.

An evaluation of the effects of the groundfish fisheries on the ecosystem is undertaken annually in the *Stock Assessment and Fishery Evaluation* report. Based on the discussions above regarding population-level impacts of Alternatives 2, 3 and 4, and the lack of other impacts to ecosystem attributes, the alternatives are not assessed to have a significant impact on the ecosystem.

The cumulative effects of the proposed alternatives are also evaluated in the Environmental Assessment. The analysis of past actions affecting the Non-AFA Trawl CP sector showed that, since the mid-1980s, adjustments in the regulatory regime have changed the economic conditions of the groundfish fisheries in which these vessels participate. An increasingly restrictive regulatory environment and escalating compliance costs resulted in economical stress for some Non-AFA Trawl CP owners. The increased restrictions were also a primary reason that flatfish became the primary target species for the Non-AFA Trawl CP sector. Because these species are bottom-dwellers, flatfish fisheries are prone to high incidental catches of prohibited species such as halibut and crab. In addition, flatfish fisheries have limited markets—particularly with regard to size and product quality. These characteristics of the flatfish fisheries, in combination with a “race for fish” regime and other factors, led to a relatively high level of economic and regulatory discards in the Non-AFA Trawl CP sector.

In recent years, the Non-AFA Trawl CP fleet has faced increasing pressure to reduce its discard rate. In 2003, the Council established a minimum groundfish retention standard for Non-AFA Trawl CPs greater than 125 ft length overall. The GRS will result in a substantial reduction in the bycatch of the affected vessels. However, a GRS may also result in substantial costs and lost revenues for these vessels because of holding/processing, transporting and transferring fish that are of relatively low value or “unmarketable.” In addition, the GRS measure imposes significant costs on the vessels with increased observer and scale costs.

With the possible exception of the BSAI Pacific cod allocation and rationalization programs, the reasonably foreseeable future actions cited above may have negative effects (to some degree) on the economic performance of Non-AFA Trawl CP sector. The cumulative effects of all actions—past, present, and future—are toward an increasingly restrictive regulatory environment resulting in lower harvests and gross revenues and/or higher operating costs. While some foreseeable future actions may offset these negative effects to some extent, the overall trend points to increasing economic stress for the Non-AFA Trawl CP sector.

The conclusions reached in the direct and indirect effects analysis of the cooperative alternatives indicate that the compliance costs incurred under a GRS may be mitigated by the benefits of participating in a cooperative. The costs of the GRS associated with retaining unwanted fish may be reduced or avoided altogether under a cooperative structure, as vessels can be more selective in what they catch without losing any competitive advantage. In addition, a cooperative structure may allow the sector to manage its PSC allocation in a manner that prevents PSC limits from being exceeded and thereby avoids the lower harvests and revenues associated with fishery closures when PSC limits are reached.

## **Initial Regulatory Flexibility Analysis**

The directly regulated entities in this action include all of the groundfish harvesters in the BSAI and GOA and the processors that take delivery of their catch, plus the CDQ groups and communities. A total of 996 vessels were classified as small entities in 2003 based on the \$3.5 million revenue threshold. Seventy-one vessels were classified as large entities that year. All but one of the 27 vessels in the Non-AFA Trawl CP sector are considered large entities based on the \$4 million threshold applied to all vessels owned by an entity. The owners of some catcher processors have requested that the small entity definition be updated to use the processor definition. Changing the criteria would reclassify most of the sector as small entities. NMFS is currently reviewing that definition, but until the review is complete, the current definition will continue to be used.

A total of 36 processors in the BSAI and GOA have less than 500 employees. These processors, on average, generated about \$0.9 million in revenue from groundfish and had total revenues from all seafood processing of about \$5.2 million. The processors with over 500 employees averaged \$43.5 million in groundfish revenues and \$79.1 from all fish products (NMFS, 2002). The small processors will be protected by imposing sideboard limits. The protections should have a limited impact though, because many of the species are primarily processed at-sea.

All six CDQ groups and the 65 communities associate with those groups are considered small entities. The alternatives considered in this amendment would either maintain their current allocation or increase the amount of specific species they are allocated. The royalty increases are expected to be small relative to total annual revenues by these groups. These groups are dominated by pollock, crab, halibut, and Pacific cod, but the royalty increases would likely help further the mission of improving the lives of residents of rural Western Alaska.

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## List of Acronyms and Abbreviations

%	percent	kg	kilogram(s)
'	minutes	lb(s)	pound(s)
<	less than	LLP	license limitation program
>	greater than	LOA	length overall
ABC	acceptable biological catch	MRA	maximum retainable amount
ADF&G	Alaska Department of Fish and Game	MSA	Magnuson-Stevens Fishery Conservation and Management Act
AFA	American Fisheries Act		
AI	Aleutian Islands	mt	metric ton(s)
BSAI	Bering Sea and Aleutian Islands	N.	North
BSAI Groundfish FMP	Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area	nm	nautical miles
C.F.R.	Code of Federal Regulations	NMFS	National Marine Fisheries Service
CDQ	community development quota	NOAA Fisheries	National Marine Fisheries Service
COBLZ	C. <i>Opilio</i> Bycatch Limitation Zone	NPFMC	North Pacific Fishery Management Council
Council	North Pacific Fishery Management Council	°	degrees
CP	catcher processor vessel	Observer Program	North Pacific Groundfish Observer Program
CV	catcher vessel	POP	Pacific ocean perch
E.	East	PSC	prohibited species catch
EA	Environmental Assessment	PSQ	prohibited species quota
EFH	essential fish habitat	RFA	Regulatory Flexibility Act
EFH EIS	Final Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska	RIR	Regulatory Impact Review
ENSO	El Niño-Southern Oscillation	TAC	total allowable catch
ESA	Endangered Species Act	U.S.	United States
FMP	fishery management plan	U.S.C.	United States Code
ft	foot/feet	VMS	Vessel monitoring system
FY	Federal Year	W.	West
GOA	Gulf of Alaska	EAI	Eastern Aleutian Islands District
Groundfish PSEIS	Final Programmatic Environmental Impact Statement for the Alaska Groundfish Fisheries	CAI	Central Aleutian Islands District
GRS	groundfish retention standard	WAI	Western Aleutian Islands District
ICA	incidental catch allowance	BS	Bering Sea
IFQ	individual fishing quota	APICDA	Aleutian Pribilof Islands Community Development Association
IPHC	International Pacific Halibut Commission	BBEDC	Bristol Bay Economic Development Corporation
IRFA	Initial Regulatory Flexibility Analysis	CBSFA	Central Bering Sea Fishermen's Association
IR/IU	Improved Retention/Improved Utilization Program	CVRF	Coastal Villages Region Fund
ITAC	initial total allowable catch	YDFDA	Yukon Delta Fisheries Development Association
		F/V	Fishing Vessel

# 1 PURPOSE AND NEED

The proposed action is to allocate Bering Sea and Aleutian Islands (BSAI) groundfish and prohibited species catch limits to the Non-American Fisheries Act (AFA) Trawl Catcher Processor (CP) sector, often referred to as the Head and Gut (H&G) sector, and to develop a cooperative structure for the sector. The North Pacific Fishery Management Council (Council) for many years has focused on maintaining a healthy marine ecosystem to ensure the long-term conservation and abundance of the fisheries resources. This action is a step in realizing that goal by facilitating bycatch reductions, waste minimization, and utilization improvements in the BSAI fisheries.

## 1.1 Problem Statement

The Council has long recognized the importance of reducing discards in the North Pacific groundfish fisheries. The Council took action that improved retention and utilization of North Pacific groundfish by implementing Amendment 49 in January 1998. This action requires all vessels fishing for groundfish in the BSAI management area to retain all pollock and Pacific cod beginning January 3, 1998, and retain all rock sole and yellowfin sole beginning January 1, 2003. In addition, the amendment established a 15 percent minimum processing standard, with no limit on product form for pollock and Pacific cod. However, in 2000, it became increasingly clear that the Non-AFA Trawl CP sector would not be able to fully meet these retention requirements by the 2003 deadline. The Council realized that IR/IU for the multi-species fisheries would be more problematic than the pollock or Pacific cod fisheries. In a multi-species fishery, the race for fish can result in unacceptably high numbers of discards. The Council recognizing this issue, initiated action in October 2002, to establish a cooperative program for the Non-AFA Trawl CP sector. A cooperative program would allow participants to manage discards in the aggregate at the cooperative level. Cooperative management has several potential benefits that could impact compliance with the retention standards and bycatch reduction. Cooperatives typically increase communication among members, which should facilitate the exchange of information concerning fishing patterns and practices that affect bycatch and retention rates. Application of retention standards at the cooperative level ensure that overall retention goals are met and allow groups of individuals to develop private contracts defining the terms under which members with relatively high retention rates can derive a benefit from that practice from members with relatively low retention rates. These contracts effectively establish a system of trading of retention shares among cooperative members. Cooperative management also provides the opportunity for members to increase production efficiency in general, easing the cost burden of complying with the retention standard. Converting the fisheries to cooperative management also advances the Council's general goal of developing rationalization programs for the fisheries that it manages. Cooperative management with exclusive allocations to each cooperative allows each cooperative to slow its fishing refocus its effort toward bycatch reduction, without sacrificing its share of the catch. In December 2004, the Council adopted the following Amendment 80 problem statement:

*The Council's primary concern is to maintain a healthy marine ecosystem to ensure the long-term conservation and abundance of the groundfish and crab resources. To this end, the Council is committed to reducing bycatch, minimizing waste, and improving utilization of fish resources to the extent practicable in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, including the CDQ sector, communities, and the nation as a whole, while at the same time continuing to look for ways to further rationalize the fisheries. Focusing on reduction of bycatch and the attendant benefits of cooperatives and CDQ allocations in meeting bycatch reduction objectives are initial steps towards rationalization of the BSAI groundfish fisheries. Bycatch reduction measures for the Non-AFA Trawl Catcher Processor sector is a priority focus in this step toward rationalization given this sector's historical difficulty in achieving acceptable bycatch levels. Allocations to this sector associated with cooperative management of catch and bycatch provide the opportunity for participants in this sector to mitigate the cost, to some degree, associated with bycatch reduction. In addition to*

*reducing bycatch in one sector, assurance should be provided to minimize negative impacts on others.*

## **1.2 Need for Groundfish and Prohibited Species Catch Allocations and Cooperative Program for the Non-AFA Trawl Catcher Processor Sector**

This action is part of a series of actions that the Council has undertaken motivated by the goal of reducing bycatch and increasing utilization of harvests in the BSAI fisheries. This particular action stems from the realization that bycatch reductions and utilization increases may require changes in fishing practices and patterns that require added expenditures and may be inconsistent with the incentives created by the current limited access management. As such, under the current limited access management the retention requirements may present a challenge for certain participants. This action would fundamentally change the management of the fishery resolving these inconsistent incentives, while also providing participants with a management system that allows for improved efficiency by providing an environment in which revenues can be increased and operating costs can be reduced. Depending on the magnitude of these potential efficiency gains and the costs of bycatch reduction, increases in efficiency could be used to cover the costs of bycatch reduction measures or provide additional benefits to participants. Perhaps most importantly, the proposed management would apply retention standards on an aggregate basis to all activities of a cooperative, allowing participants within the cooperative to coordinate fishing and retention practices across the cooperative to meet the retention requirements.

Since at least 1995, the Non-AFA Trawl CP sector has had the lowest retention rate in the BSAI. In 1995, the sector had an overall retention rate of 59 percent. Spurred by regulatory changes to improve retention, six years later, the retention rate had improved to 74 percent, still well below the retention rate of other sectors operating in the BSAI. In the past, the Council has utilized regulations that require better retention by participants. These programs have been successful in reducing discards, but in some cases may have increased production costs to the industry. These bycatch management measures also fail to reconcile inconsistent incentives created by the “race for fish” that arises in a limited access, competitive fishery. In a limited access, competitive fishery, manager’s monitor inseason harvests closing the fishery when the TAC is estimated to be fully harvested. A vessel increases its share of the TAC by increasing its rate of harvests relative to others. This management creates an incentive for vessels to avoid taking any steps that reduce the rate of harvests. Bycatch reductions often require actions that reduce (or have the potential to reduce) harvest rates, such as searching for cleaner fishing grounds or making gear and method changes that could reduce not only bycatch rates but also target catch rates. Exclusive cooperative allocations to the Non-AFA Trawl CP sector will allow a participant to take actions that reduce catch rates without jeopardizing its share of the TAC. Cooperatives also facilitate the exchange of fishing information, which could further aid participants in achieving bycatch reduction goals. Independent of potential benefits from facilitating bycatch reduction, cooperative management frequently yields efficiency gains by allowing participants to focus production on maximizing revenues and minimizing costs. Depending on the level of efficiency gains arising with the change to cooperative management and the ingenuity of participants in achieving bycatch reductions and utilization increases, these efficiency gains could either reduce the burden to participants of achieving bycatch reductions or increase net returns to participants.

The proposed action is also consistent with the Council’s priority for rationalizing the fisheries it manages. Rationalization programs provide each participant with an exclusive allocation of a portion of the TAC. This exclusive allocation allows a participant to change fishing practices (or production) without jeopardizing its share of the catch. Depending on the circumstances and accompanying management measures, participants can use this added flexibility to increase economic returns, reduce bycatch, increase utilization rates, and/or improvement safety.

### 1.3 Council Action on IR/IU

The proposed Amendment 80 is the latest in a series of actions dating back to 1994, which specifically addressed the issue of improved retention and improved utilization of groundfish. This section summarizes these actions.

In December 1994, during the process of addressing their comprehensive rationalization program (CRP), the Council debated issues of bycatch and economic loss from discards in target fisheries and unanimously adopted a motion to develop a set of regulatory options for implementing an improved retention/improved utilization (IR/IU) program for BSAI groundfish fisheries. The Council identified the BSAI rock sole and mid-water pollock fisheries as two subject fisheries for initial evaluation and proposed that commercial groundfish trawl fisheries be required to reduce discards by retaining species, which have historically been bycatch.

At its December 1995 meeting, the Council adopted a draft IR/IU problem statement for public review. That statement reads as follows:

*In managing the fisheries under its jurisdiction, the North Pacific Fishery Management Council is committed to: (1) assuring the long-term health and productivity of fish stocks and other living marine resources of the North Pacific and Bering Sea ecosystem; and (2) reducing bycatch, minimizing waste, and improving utilization of fish resources in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, communities, consumers, and the nation as a whole.*

*The Council's overriding concern is to maintain the health of the marine ecosystem to ensure the long-term conservation and abundance of the groundfish and crab resources. As a response to this concern, a program to promote improved utilization and effective control/reduction of bycatch and discards in the fisheries off Alaska should address the following problems:*

- 1. Bycatch and discard loss of groundfish, crab, herring, salmon, and other non-target species.*
- 2. Economic loss and waste associated with the discard mortality of target species harvested but not retained for economic reasons.*
- 3. Inability to provide for a long-term, stable fisheries-based economy due to loss of fishery resources through wasteful fishing practices.*
- 4. The need to promote improved retention and utilization of fish resources by reducing waste of target groundfish species to achieve long-term sustainable economic benefits to the nation.*

At its September 1996 meeting, the Council adopted Amendment 49.

On January 3, 1998, Amendment 49 to the BSAI Groundfish FMP was implemented (62 FR 63880). The final rule requires vessels fishing for groundfish in the BSAI management area to retain all pollock and Pacific cod beginning January 3, 1998 and retain all rock sole and yellowfin sole beginning January 1, 2003. In addition, the final rule establishes a 15 percent minimum processing standard with no limit on product form beginning January 3, 1998 for pollock and Pacific cod and beginning January 1, 2003 for rock sole and yellowfin sole.

Writers of the AFA anticipated that rationalizing the pollock industry could have spillover effects on other sectors, including the Non-AFA Trawl CP sector. Therefore, the AFA mandated harvest sideboards, which limit the catch of non-pollock groundfish by AFA vessels to their historical levels. The AFA also called for measures to protect other processors from spillover effects, and suggested that processing limits (sideboards) on non-pollock species be applied to AFA processors. In 1999, the Council initiated the analysis of processing sideboards. By 2002, the AFA processing sideboards issue evolved to an

assessment of potential alternatives to IR/IU for flatfish—the Non-AFA Trawl CP sector was reasonably satisfied that restrictions on harvest of AFA-CPs would keep them out of the head and gut fisheries, but they also realized that IR/IU flatfish requirements could significantly increase the costs of the sector. In April 2002 public testimony provided by Non-AFA Trawl CP sector participants to the Council described that some vessels in that sector would be forced to exit flatfish and other fisheries if a requirement to retain all flatfish species were imposed. These exit decisions were reported to be due to their inability, with existing technology to consistently haul target species, with low proportions of non-target catch, and adapt to the limited space available on some vessels to hold and process mixed species hauls.

Specifically, the Council addressed the concept of relaxing the requirement that 100 percent of IR/IU flatfish be retained. This option, while it could possibly have made IR/IU less onerous to the Non-AFA Trawl CP sector, was deemed not enforceable. Sampling protocols were considered not robust enough to accurately estimate species composition and total catch during any given week on a given vessel or on a given trip.

At its June 2002 meeting, the Council developed a problem statement specifically to address the pending implementation of IR/IU regulations for the flatfish fisheries. This statement read as follows:

*100 percent retention of rock sole and yellowfin sole (as currently scheduled) results in severe economic losses to certain participants in the fishery, while less than 100 percent retention of only these species is not enforceable.*

In October 2002, the Council approved Amendment 75 to the BSAI Groundfish FMP, delaying implementation of IR/IU flatfish regulations for the BSAI until June 1, 2004. Amendment 75 was only partially approved by the Secretary—the delay of IR/IU flatfish implementation in the BSAI was approved, but the ending date (June 1, 2004) for the delay was not approved. The practical effect of partially approving Amendment 75 was that the proposed FMP text was modified by removing reference to rock sole and yellowfin sole as IR/IU species, thereby delaying indefinitely the flatfish IR/IU flatfish program.

In October 2002, the Council also initiated four trailing amendments with the expectation that these amendments could augment or replace IR/IU regulations for flatfish. Amendment 72/76 exempts fisheries with less than a 5 percent IR/IU flatfish bycatch rate from IR/IU flatfish regulations. With the indefinite delay of the BSAI IR/IU flatfish program, Amendment 76 no longer had any practical application in the BSAI. Amendment B would have created flatfish bycatch (discard) limits for the flatfish fisheries. This amendment was later rejected by the Council as infeasible following discussions between industry representatives and fishery managers. Amendment 79, approved by the Council in June 2003, would establish a minimum groundfish retention standard (GRS) for Non-AFA Trawl CPs greater than 125 ft length overall. Unlike the alternative in Amendment 75 that would have required species specific retention rates for yellowfin sole and rock sole to allow for less than 100 percent retention of these species, this action is enforceable because NMFS is measuring total groundfish catch for the vessel for the year and comparing that measurement to the annual product tonnage for that vessel divided by NMFS product recover rates. The approach of the GRS program is to phase in gradually higher retention rates. When approved by the Council in 2003, the GRS program was scheduled to start in 2005 with the initial minimum retention standard set at 65 percent of total groundfish catch followed by slightly higher predetermined retention rates over the next three years. However, since the action is yet to be approved by the Secretary of Commerce, the schedule for implementation of the program is uncertain. The action will also change the monitoring requirements for each vessel managed under the GRS, requiring flow scales, observer stations, and observations of every haul. The Council initiated this action, its latest IR/IU amendment, in October 2002 to allocate BSAI yellowfin sole, flathead sole, rock sole, Atka mackerel, and Aleutian Islands Pacific Ocean perch and PSC limits to the Non-AFA Trawl CP sector and provide for cooperative management of that allocation.

Initially, this action proposed a prohibited species catch (PSC) cooperative for the Non-AFA Trawl CP sector. In February 2003, the Council broadened the proposed program to establish a multispecies cooperative, intended to facilitate greater retention improvements. In April 2003, the Council expanded the proposed action to include allocations of non-pollock species and PSC to ten sectors operating in the BSAI, as a means to minimize potential impacts on sectors that might arise from the allocation to the Non-AFA Trawl CP sector. The Council also recognized that sector allocations provided might facilitate voluntary efforts within the various sectors to further rationalization fishing in the BSAI. After further consideration, public testimony and preliminary analyses, in October 2004, the Council simplified the proposed action to provide only allocations to the Non-AFA Trawl CP sector and removing altogether any allocation of Pacific cod from this action. The Council's decision to simplify this action is intended to reestablish consistency with the original purpose of facilitating bycatch reductions and retention improvements in the Non-AFA Trawl CP sector. The Council believes that distributional concerns of other participants can be addressed through sideboards and other limitations on participation that are incorporated into this action and a separate action that the Council has initiated to consider revision to Pacific cod allocations.

## **2 DESCRIPTION OF THE ALTERNATIVES**

### **2.1 Alternatives to facilitate bycatch reductions and improved utilization**

Several management measures could be used to facilitate reduced bycatch, waste minimization, and improved utilization of the BSAI yellowfin sole, flathead sole, rock sole, Atka mackerel, and AI POP fisheries for the Non-AFA Trawl CP sector. Typically, several management measures are combined to produce a management alternative. Depending on the mix of management measures, each different alternative management systems has its strengths and weaknesses, making some more appropriate and appealing than others. This section reviews various management measures that could be used to address bycatch and utilization concerns.

Generally, the management measures that address bycatch and utilization concerns can be separated into two categories—input controls and output controls. Input controls that can contribute to bycatch reduction include measures such as gear restrictions and area closures. Input controls typically are designed to limit effort and often reduce production efficiency.

Output controls, on the other hand, limit output quantities, such as the amount of catch. Output controls that can be used to reduce bycatch include bycatch quotas and PSC caps. Output controls can be separated into individual entitlement programs and collective entitlement programs. Catch limits tailored for individual vessels or participants include individual quotas, individual bycatch quotas, and vessel bycatch allowances. Quota that are transferable in general improve the efficiency of a fishery by allowing low cost producers to purchase allocations from high cost producers. Quota that results in both current and future harvest privileges may also create an incentive to protect stocks. Binding individual bycatch quotas provide an incentive to reduce bycatch rates and the total amount of bycatch. Similar to individual fishing quotas, a system of bycatch quota may encourage less efficient participants to exit the fishery, if other participants can more efficiently reduce bycatch.

Other output controls operate at a collective level, such as fleet or sector catch limits and allocations to cooperatives. These types of collective output controls attempt to realize the benefits of organized and coordinated activities. The allocation to a cooperative is similar to the allocation to individuals but may have an added benefit arising from cooperative monitoring and enforcement (Criddle and Macinko, 2000; Holland and Ginter, 2001). Some observers believe that quota-based programs promote health of the fishery resource because participants may have an interest in the long term returns from the fishery. The strength (and even presence) of this incentive depends on both discount rates and the reproductive rate of the stock. Critics, however, question the strength of the incentive and also may be concerned that the incentives for caring for the resource do not extend beyond the target stock to unallocated species or ecosystem considerations.

An often-controversial element of output based management is the allocation process. In many cases, allocation of quota (or distribution of the cap amount among the participants) is based on catch history of a fleet or vessel owners. Critics of these allocations question whether public trust resources should be allocated cost free. Auctions can also be used to allocate quota to capture the value of the resource for the public. Auction revenues could also be used for management purposes or to promote resource conservation and biological sustainability. Auctions may also promote economically efficient use of quota, if the market for trading of quota is slow to develop. Some observers advocate zero revenue auctions to ensure that shares are available for purchase, but without affecting the distribution of benefits under the initial allocation. In a zero revenue auction, shares expire and auctioned over time. Revenues from the auction are distributed to the person that received the initial allocation. Persons receiving the initial allocation may purchase shares in the auction, if they wish to remain in the fishery. Such a system prevents persons that receive an allocation from withholding shares from the market for speculative or market control reasons.

In a previous action, the Council elected to use the groundfish retention standard (GRS) for the limiting discards and improving utilization. Rather than reconsider alternative methods for minimizing bycatch and improving utilization (such as bycatch quotas), the Council has elected to focus on the use of cooperative management of allocations and the GRS by the Non-AFA Trawl CP sector. Allowing cooperative management of the GRS and allocations provides two tools, which used in a coordinated manner, should aid participants in meeting the GRS. By managing and applying the GRS at the cooperative level, retention rates determined on an aggregated basis across participants and fisheries, allowing greater flexibility to participants in making retention decisions. Use of a cooperative structure is also thought to promote information exchange among participants that may not occur under a program of individual allocations of bycatch quota. Allowing cooperative management of allocations is intended to increase overall efficiency in the fisheries, easing the financial burden of compliance with the GRS.

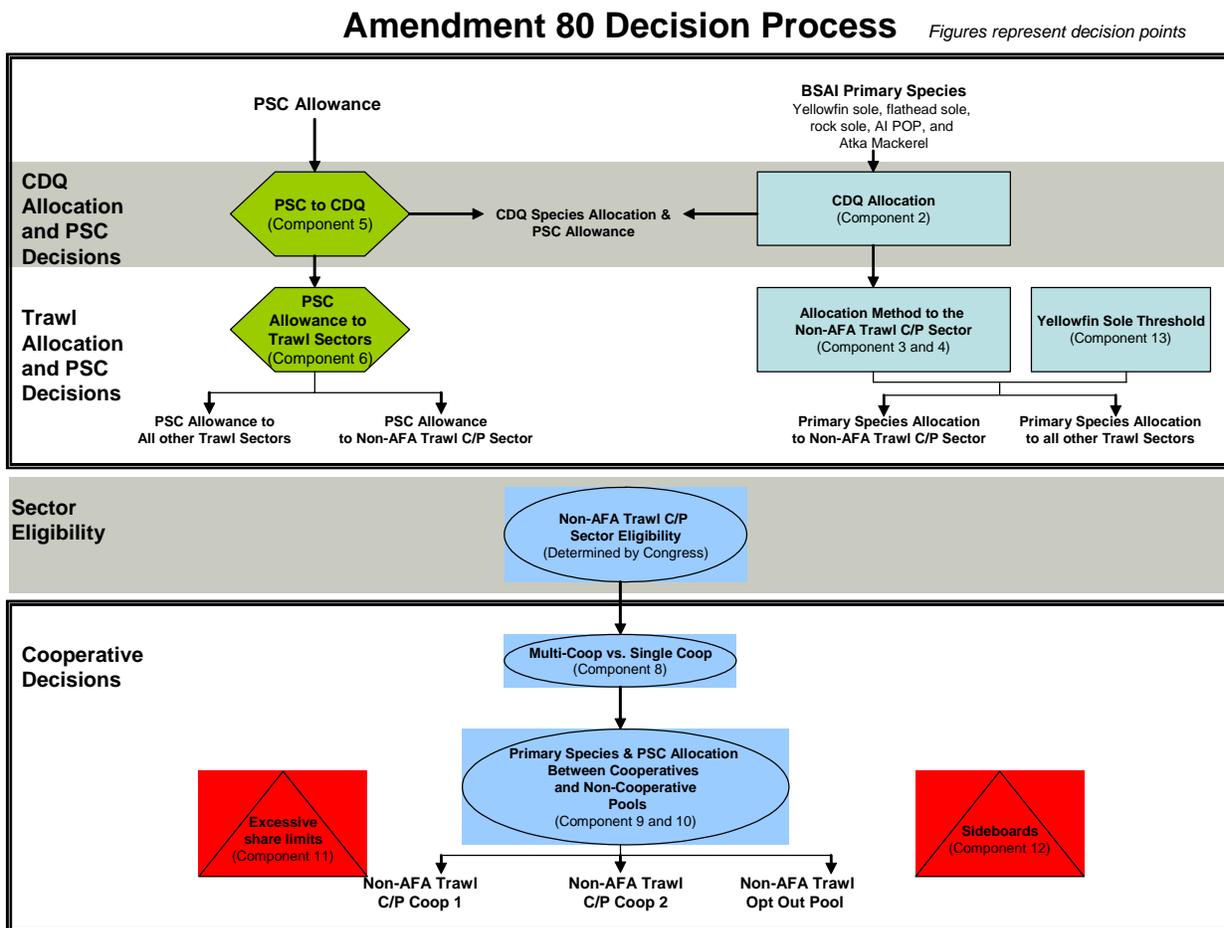
## **2.2 Amendment 80 Structure**

This section presents a general overview of the decision process necessary for the proposed action, alternatives considered for analysis purposes, and individual components and options that make up the proposed action. As noted in the flow diagram of the Amendment 80 decision process presented below (Figure 2-1), the outcome of the proposed action is a cooperative program for the Non-AFA Trawl CP sector. To accomplish this end, the Council will need to make several key decisions.

The first set of decisions involves allocating the Amendment 80 target species to the Non-AFA Trawl CP sector and the community development quota (CDQ) program. In December 2004, the Council selected the yellowfin sole, rock sole, flathead sole, Aleutian Islands Pacific Ocean perch, and Atka mackerel as the species allocated to the Non-AFA Trawl CP sector. Next, the Council, must consider increasing the CDQ allocation for these Amendment 80 target species and those secondary species taken incidental to the primary target species or leave the allocation at its current level. Following CDQ allocations is the allocation of the Amendment 80 species to the Non-AFA Trawl CP sector. Another primary decision is PSC allowance for the CDQ program and the Non-AFA Trawl CP sector. Finally, the Council in December 2004 added the option of a yellowfin sole threshold fishery. If the Council elects to have a yellowfin sole threshold fishery, the threshold must be selected and it must be determined how to distribute the yellowfin sole in excess of that threshold.

The second series of major decisions the Council must consider involves developing the cooperative structure for the Non-AFA Trawl CP sector. One such decision is whether to develop a cooperative program or only a single cooperative program. Another decision is determining eligibility for the Non-AFA Trawl CP sector. Once the eligibility has been determined, the distribution of the sector allocation between those participants who join a cooperative and those that do not will need to be determined. Other key decisions are the sideboard species and amounts and excessive share limits.

Figure 2-1 Amendment 80 Decision Structure



## 2.3 Alternatives Considered

To address the problem statement, the Council has adopted a suite of components and options that would allocate five primary target species in BSAI to the Non-AFA Trawl CP sector and would allow for cooperative formation by sector participants. Although there are a myriad of different ways to combine the many components and options in the proposed action to form an alternative, the Council has selected four strawman alternatives that represent a range of reasonable alternatives to assess the impacts of the proposed action. Each of the strawman alternatives in the analysis address the problem statement by providing an allocation of the traditional primary species to the sector and allow for the sector to form cooperative(s), which are expected to facilitate a reduction in bycatch by the sector as well as mitigate the costs associated with bycatch reduction. The first alternative is status quo (no action). Although the strawman alternatives differ in several respects the primary difference is in the cooperative structures. The second alternative would allow multiple cooperatives to be formed within the sector. The third alternative would authorize the formation of a single cooperative in the sector. The fourth alternative was selected in April 2006 as a preliminary preferred alternative. The specific differences of these alternatives are described in the sections that follow and are compared in Table 2-1

**Table 2-1 Comparison of the Alternatives**

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Primary Target Species to be Allocated</b>	None	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch
<b>Allocation to Sector</b>	None	<p><u>Allocation:</u> Sector's retained catch over all retained catch, 1998-2002</p> <p><u>Management:</u> Hard cap</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 30% to sector and 70% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Sector's retained catch over all total catch, 1995-2003</p> <p><u>Management:</u> Soft cap; rollover to sector</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 100,000 mt threshold to be divided 70% to sector and 30% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Yellowfin sole 82.5%, rock sole 97%, flathead sole 98%, EAI/BS and CAI Atka mackerel 98% reduced to 90% over a 4-year period at 5% per year starting in second year. WAI Atka mackerel 100%. EAI and CAI AI POP 95% reduced to 90% the second year. WAI POP 98%.</p> <p><u>Management:</u> Hard cap for sector and an ICA for fixed gear sectors and trawl limited access fishery; rollover of allocated species and PSC to H&amp;G sector, halibut PSC rollover discounted 5%.</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 60% to H&amp;G sector and 40% to the general limited access fishery; allow rollovers to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards in the threshold fishery.</p>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Allocation of Prohibited Species</b>	PSC allocated by target fishery and shared among all trawl vessels	Sector allowance based on average historic PSC usage in directed fishery for allocated primary species plus Pacific cod, 1998-2002	Sector allowance based on: a) average PSC usage, by fishery, of all trawl in each PSC fishery group for allocated primary species plus Pacific cod, 1995-2003 b) apply sector proportion as determined above c) reduce by 5%	Two halibut PSC options 1) H&G sector allowance based on average historic usage of PSC from 2000-2004 Reduce calculated halibut PSC allowance to 80% of apportionment amount phased in at 5% per year starting in the second year. 2) Allocate PSC based on sector's percentage allocations of Amendment 80 species multiplied by trawl PSC amounts apportioned to target species staying within 2,200 mt minimum and 2,450 mt maximum.  <u>Crab</u> PSC apportionment amounts are 37.52% red king crab, 61.44% <i>C. opilio</i> , 52.64% for Zone 1 <i>C. bairdi</i> , and 29.59% for Zone 2 <i>C. bairdi</i> . Reduce crab PSC allocations to 80% of apportionment amount phased in at 5% per year starting in second year
<b>Sector Eligibility</b>	determined by Congress	Determined by Congress	determined by Congress	determined by Congress
<b>Cooperative formation</b>	None	<u>Threshold:</u> 15% minimum of eligible participants and must be comprised of at least two separate entities	<u>Threshold:</u> 67% minimum of eligible vessels and must be comprised of at least three separate entities	<u>Threshold:</u> 30% minimum of eligible vessels and must be comprised of at least three separate entities

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Cooperative allocation</b>	None	<p><i>Allocation:</i> based on retain catch history, 1998-2002</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>	<p><i>Allocation:</i> based on total catch history, 1995-2003 drop 3</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>	<p><i>Allocation:</i> based on total catch history, 1998-2004 drop 2.</p> <p>For Atka mackerel each vessel would receive its historic catch for all areas combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation.</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole.</p>
<b>Excessive share limits</b>	None	No limit on consolidation	No single person can hold no more than 50% of the catch history of an allocated species	<p>No single person can hold more than 30% of the catch history of an allocated either on an aggregate basis Initial allocation grandfathered</p> <p>No vessel may harvest more than 10% of the entire sector allocation. Initial allocation grandfathered</p>

	Alternative 1 (Status Quo)	Alternative 2	Alternative 3	Alternative 4 (Preliminary Preferred)
<b>Sideboards</b>	None	<p><u>For sector:</u> established based on participation in other fisheries, 1998-2002; for GOA halibut PSC based on usage by area, 1998-2002; only vessels that have GOA wide weekly participation in the flatfish fisheries over the threshold during the qualifying period would be eligible to participate in the GOA flatfish fisheries</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><u>For sector:</u> established based on participation in other fisheries, 1995-2003; for GOA halibut PSC based usage by area, 1995-2003</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><b>BSAI</b> None</p> <p><b>GOA</b></p> <ol style="list-style-type: none"> <li>1) Eligible to participate in the GOA flatfish fisheries based on 10 weeks of participation in flatfish fishery using 1998-2004</li> <li>2) Sector vessels that have fished 80% of their weeks in the GOA from 2000 to 2003 will be exempt from GOA halibut sideboards</li> <li>3) Gulf-wide halibut sideboards calculated based on actual usage for each target fishery within each area for the Non-AFA Trawl CP sector using 1998-2004</li> <li>4) GOA pollock, Pacific cod, and directed rockfish sideboards for the Non-AFA Trawl CP sector based on retained catch of the sector as a percent of retain catch of all sectors from 1998-2004</li> <li>5) CGOA rockfish demonstration program takes precedence.</li> <li>6) Sideboards apply to vessels and LLPs used to generate harvest shares</li> <li>7) GOA rationalization program when complete will supersede Amendment 80 sideboards</li> <li>8) Sideboards for PSC and GOA would be allocated between cooperative and non-cooperative vessel/licenses based on same formula as Component 10</li> <li>9) Each cooperative will receive its GOA sideboards</li> </ol>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>CDQ</b>	7.5% of groundfish and prohibited species (except herring) allocated to CDQ multispecies fishery	10% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	15% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	10% of allocated species and secondary species caught (except Pcod) taken incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation

### 2.3.1 Alternative 1: No Action

With the exception of Amendment 79, which is yet to be approved by the Secretary of Commerce (SOC), the current management of groundfish and prohibited species catch in the BSAI would remain in effect for this alternative. In general, after deducting 7.5 percent for reserves and 7.5 percent for the CDQ program, the remaining portion of TAC is available to any vessel with a federal license. For Eastern Aleutian District and the Bering Sea subarea Atka mackerel, up to 2 percent of the ITAC may be allocated to jig gear. Currently, only one percent is allocated to the jig gear. For further details on the current management of the species to be allocated under this proposed action, please refer to Section 3.1.1.

Although Amendment 79 to the BSAI Groundfish FMP, the groundfish retention standard (GRS), has not yet been implemented, a final rule should be published before final action on Amendment 80, which is scheduled for December 2005. Currently, there are three potential outcomes. One is the SOC could implement GRS in 2006 at 75 percent. Another is that the SOC approves Amendment 79 at 65 percent starting in 2007. Finally, the SOC could disapprove Amendment 79. Due to the timing of Amendment 80 and Amendment 79, the no action alternative could change after initial review of Amendment 80 in October 2005 but before final review in December 2005. For purposes of the initial review of Amendment 80, the no action alternative will include a GRS phased in over a four year period for Non-AFA Trawl CP vessels greater than 125 ft length overall starting in 2007 at 65 percent and culminating in 2010 at 85 percent. The decision to use this scenario is based on the Council's recommendation to the SOC at the June 2005 meeting to implement Amendment 79 in 2007 at 65 percent to allow ample time for Non-AFA Trawl CP sector to complete any retrofits necessary to meet the enforcement and monitoring requirements included in Amendment 79. In addition, the Council felt it was important to allow the sector time to develop a vessel buyback program authorized under the Consolidated Appropriations Act of 2005. Finally, the Council also clarified at the June 2005 meeting that the specific years tied to GRS in the original action are of less importance than starting at the intended 65 percent.

### 2.3.2 Alternative 2: Multiple Cooperatives

This alternative would allocate the following species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel by subarea, and Aleutian Islands subarea Pacific Ocean perch—referred to as primary target species. Allocation of these species to the sector would be in proportion to the retained catch of the Non-AFA Trawl CP sector relative to the retained catch of all vessels, for the years 1998 to 2002.<sup>3</sup> Non-AFA Trawl CP sector allocations of the primary target species would be managed as a hard cap: when the sector harvests all of its allocation of a primary target species, all directed fisheries for that species, as well as those fisheries that catch species incidentally, would close for the sector.

The unallocated portion of the primary target species quota would be reserved for the Non-H&G trawl fishery, which is composed of AFA Trawl CP sector, AFA Trawl CV sector and Non-AFA Trawl CV sector. Primary species quota cannot be rolled over between trawl sectors under this alternative.

This alternative includes a quota threshold of 125,000 mt for the yellowfin sole quota. If, in a given year, the quota exceeds this threshold, the excess would be allocated in the following manner: 30 percent to the Non-AFA Trawl CP sector and 70 percent to the limited access trawl fishery. Specifically for this excess allocation, a two-way rollover option is allowed. A portion of the yellowfin sole reserve allocated to either the Non-AFA Trawl CP sector or the limited access trawl fishery would be rolled over to the other sector. A portion of the yellowfin sole reserve allocated to either the Non-AFA Trawl CP sector or the limited access trawl fishery would be rolled over to the other sector, if, after a specified date (August 1 or

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<sup>3</sup> All allocations are after allocations to the CDQ program and, in the case of Atka mackerel, after any allocation to the jig sector.

September 1), there is any quota that is projected to remain unused. AFA sideboards do not apply to the yellowfin sole threshold fishery.

The Non-AFA Trawl CP sector would receive a PSC allowance under this alternative, which would be based on the sector's historical usage of PSC in the directed fisheries for the allocated primary species plus Pacific cod during the years from 1998 to 2002, inclusive.

The eligibility criteria for the Non-AFA Trawl CP sector have been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program, which was passed in November 2004. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on its License Limitation Program permit (LLP), and must own a Non-AFA vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operative as a cooperative, membership must include as least three separate entities and must be composed of at least 15 percent of the qualified vessels. Those participants who do not elect to join a cooperative may either form their own cooperative (with at least 15 percent of qualified licenses with cooperative endorsements) or participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowance to the cooperative and sector's limited access fishery would be in proportion to the total catch of the primary target species of the eligible license holders included in each pool, for the years 1998-2002 by species, during this period. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1998-2002 for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is than allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sectors mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

Within the Non-AFA Trawl CP sector, consolidation would not be constrained. An eligible participant (either individual or entity) would not be limited as to the percentage of the Non-AFA Trawl CP sector allocation it can use or the amount of licenses and qualified catch that it may hold.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation, (1998 to 2002). Sideboards for those species that close on TAC in the GOA and the BSAI would be established based on retained catch of the Non-AFA Trawl CP sector divided by the retained catch of all sectors from

1998 to 2002. Sideboards would also be established for halibut PSC in the GOA based on actual halibut PSC usage by the Non-AFA Trawl CP sector in each target fishery in the deep and shallow water complexes by area between 1998 and 2002. Only vessels with LLPs that have Gulf wide weekly participation in the flatfish fisheries over a threshold number of weeks during a qualifying period would be eligible to participate in those fisheries. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, sideboards would be established between cooperative and non-cooperative participants for unallocated species, based on the same years. Sideboards would apply to eligible licenses and associated vessels from which the catch history arose.

The CDQ program would be allocated 10 percent of each primary target species, and the associated species taken incidentally, except Pacific cod, in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would also continue to be issued at the same percentage as the CDQ groundfish allocation.

### **2.3.3 Alternative 3: Single Cooperative**

This alternative would allocate the following species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel by subarea, and Aleutian Island Pacific Ocean perch--referred to as the primary target species. Allocation of these species to the sector would be in proportion to the retained catch of the Non-AFA Trawl CP sector relative to the total catch by all vessels, for the years 1995 to 2003. The unallocated portion of the primary target species quota would be reserved for the Non-H&G trawl fishery, which is made up of the AFA Trawl CP sector, AFA Trawl CV sector, and the Non-AFA Trawl CV sector. Non-AFA Trawl CP sector allocations of the primary target species would be managed as a soft cap: when the sector harvests all of its allocation of a primary target species, the species would be placed on prohibited species status, and would need to be discarded.

Alternative 3 also includes a rollover provision: any portion of the primary target species in the general limited access fishery projected to remain unharvested would be rolled over to the Non-AFA Trawl CP sector.

This alternative also includes a quota threshold of 100,000 mt for the yellowfin sole quota. If, in a given year, the quota exceeds this threshold, the excess would be allocated in the following manner: 70 percent to the Non-AFA Trawl CP sector and 30 percent to the limited access trawl fishery. Any yellowfin sole above the threshold that is projected by the NOAA Regional Administrator to go unharvested would be rolled over to the other threshold recipients (Non-AFA Trawl CP sector or the general limited access fishery).

The Non-AFA Trawl CP sector would receive a PSC allowance under this alternative. PSC usage of all trawl vessels in each PSC fishery group for allocated primary species plus Pacific cod, from 1995 to 2002, would be calculated, to which the proportion of the Non-AFA Trawl CP sector's share of the target species quota (as determined in Component 3) would be applied. The sector's PSC allowance for each prohibited species would be 95 percent of the total amount calculated using this formula.

The eligibility criteria for the Non-AFA Trawl CP sector have been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on their LLP and must own a vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to be included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operate as a cooperative, membership must include at least three separate entities and would need to be composed of at least 67 percent of the qualified vessels. Those participants who do not elect to join a cooperative could participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowance to the cooperative and sector's limited access fishery would be in proportion to the total catch of the primary target species of the eligible license holders included in each pool, for the years 1995-2003, dropping the three lowest annual catches for the license, by species, during this period. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1995-2003 drop three years for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is then allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sectors mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

Consolidation in the Non-AFA Trawl CP sector would be limited by a use cap that applies to each person (using individual and collective rule). No single person may use or hold more than 50 percent of the sector's combined allocation for each allocated species. However, if a person's attributed history at initial allocation is greater than the use cap threshold, the person's ability to exceed the cap would be grandfathered.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation, (1995 to 2003). Sideboards for those species that close on TAC in the GOA and the BSAI would be established based on total catch of the Non-AFA Trawl CP sector divided by the total catch of all sectors from 1995 to 2003. Sideboards would also be established for halibut PSC in the GOA based on the usage by the Non-AFA Trawl CP sector in each target species in the deep and shallow water complexes by area between 1995 and 2003. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, sideboards would be established between cooperative and non-cooperative participants for unallocated species, based on the same years. Sideboards would apply to eligible licenses and associated vessels from which the catch history arose.

The CDQ program would receive an allocation of 15 percent of each primary target species, and the associated species taken incidentally in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would be issued at the same percentage as the CDQ groundfish allocation.

#### **2.3.4 Alternative 4: Preliminary Preferred Alternative**

This alternative would allocate the following species portions to the Non-AFA Trawl CP sector: yellowfin sole 82.5 percent, rock sole 97 percent, and flathead sole 98 percent. For EAI/BS and CAI Atka

mackerel the allocation would be 98 percent the first year but then decrease 2 percent each year over a 4-year period to 90 percent. 100 of the WAI Atka mackerel would be allocated to the Non-AFA Trawl CP sector. For EAI and CAI POP the allocation would be 95 percent the first year decreasing to 90 percent the second year of the program. For WAI POP, 98 percent would be allocated to the Non-AFA Trawl CP sector. The unallocated portion of the primary target species quota would be reserved for the trawl limited access fishery, which is made up of the AFA Trawl CP sector, AFA Trawl CV sector, and the Non-AFA Trawl CV sector. An ICA for the fixed gear sectors and trawl limited access fishery would be removed before sector allocations. AFA sideboards would be determined after CDQ reserve amounts are deducted from TAC. Non-AFA Trawl CP sector allocations of the primary target species would be managed as a hard cap; when the sector harvests all of its allocation of a primary target species, the cooperative would be restricted from directed fishing for that species. Allocations to the general limited access fishery would be managed using an incidental catch allowance ICA.

Alternative 4 also includes a rollover provision; any portion of the primary target species and PSC in the general limited access fishery projected to remain unharvested by NOAA Fisheries would be rolled over to the Non-AFA Trawl CP sector. Any rollover of halibut PSC to the Non-AFA Trawl CP sector will be discounted 5 percent. NOAA Fisheries will perform a review on May 1, August 1, and any time after August 1 as appropriate to determine rollover amounts by considering current catch and PSC usage, historic catch and PSC usage, harvest capacity and stated harvest intent.

This alternative would adjust the allocation of yellowfin sole between the Non-AFA Trawl CP sector and the trawl limited access fishery when the ITAC exceeds 125,000 mt. If, in a given year, the ITAC exceeds this threshold, the portion that is in excess of the 125,000 mt threshold would be allocated in the following manner: 60 percent to the Non-AFA Trawl CP sector and 40 percent to the limited access trawl fishery. Any yellowfin sole above the threshold that is projected by the NOAA Regional Administrator to go unharvested would be rolled over from the trawl limited access fishery to the Non-AFA Trawl CP sector. AFA yellowfin sole sideboards do not apply to the threshold fishery.

In April 2006, the Council narrowed the halibut PSC apportionment options to two. The first option would base halibut PSC apportionment to the Non-AFA Trawl CP sector on historical usage of PSC from 2002 to 2004. The sector's PSC allowance for each prohibited species would be reduced to 80 percent of the total calculated amount phased in over a four year at 5 percent per year starting in the second year of the program. The second option would apportion halibut PSC based on the sector's percentage allocations of target species (see above for percentages) multiplied by the trawl PSC amounts for these species. Trawl PSC apportionment amounts would be based on 2002 to 2004 average consumption rate for all trawlers for each of the Amendment 80 species plus Pacific cod multiplied by the TAC for the upcoming year or the previous year's catch whichever is less. The following maximum and minimum will apply to this PSC option: 2,200 mt to 2,400 mt for the Non-AFA Trawl CP sector and 950 mt to 1,200 mt for trawl limited access fishery. For crab PSC, the following percentages will be applied annual total trawl crab PSC apportionment amounts published during final specifications: 37.52 percent for red king crab, 61.44 percent for *C. opilio*, 52.64 percent for Zone 1 *C. bairdi*, and 29.59 percent for Zone 2 *C. bairdi*. These allocations would then be reduced 5 percent per year starting in the second year of the program until the reduced allocation is 80 percent of the initial allocation.

The eligibility criteria for the Non-AFA Trawl CP sector was been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on their LLP and must own a vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable (total constructive loss) or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license

assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operate as a cooperative, membership must include as least three separate entities and would need to be composed of at least 30 percent of the qualified vessels. Those participants who do not elect to join a cooperative could participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowances to a cooperative (and sector's limited access fishery) would be in proportion to its member's total catch of the primary target species by the eligible vessel during the years 1998-2004 dropping the two lowest catch years by species. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1998-2004 drop two years for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is than allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sectors mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

The alternative would restrict consolidation in the Non-AFA Trawl CP sector on two levels. First, no single person (using individual and collective rule) can hold catch history in excess of 30 percent of total sector apportionment of all allocated species combined. In addition, no vessel can harvest more than 10 percent of the entire sector's allocation. Persons (individuals or entities) that exceed the caps in the initial allocation will be grandfathered.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation. Sideboards for those species that close on TAC in the GOA would be established based on total of the Non-AFA Trawl CP sector from 1998-2004. There would be no BSAI groundfish sideboards.

The alternative includes several GOA sideboards provisions: 1) eligibility to participate in the GOA flatfish fisheries based on participation in that fishery for greater than 10 weeks, 2) exemption for Non-AFA Trawl CP vessels that have fished more than 80 percent of their weeks in the GOA flatfish fisheries during the 2000 and 2003 period will be exempt from GOA halibut sideboards, 3) Gulf-wide halibut sideboards for deep and shallow water complex fisheries based on the actual rate for each target fisheries, 4) GOA pollock, Pacific cod, and directed rockfish species (Pacific Ocean perch, Northern rockfish, and Pelagic shelf rockfish) based on retained catch for the years 1998 to 2004. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, each cooperative will receive its GOA sideboards. Cooperatives that sign an inter-cooperative agreement that would allow aggregation of sideboards will be managed as aggregate sideboard. Sideboards limits will be managed as a hard cap.

The CDQ program would receive an allocation of 10 percent of each primary target species, and the associated species taken incidentally in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would be issued at the same percentage as the CDQ groundfish allocation.

### **2.3.5 Alternatives Considered but Not Advanced for Analysis**

The Council considered several options for to advance bycatch reduction. The most expansive alternatives discussed would have allocated all of the Bering Sea/Aleutian Islands groundfish species or groundfish species complexes that have a TAC limit set during the annual specifications process, except those species allocated through an IFQ program or the AFA, as primary target species. This alternative was being considered when the Council contemplated including all of the BSAI groundfish sectors in the allocation. However, when the Council voted to limit Amendment 80 allocations to the Non-AFA Trawl CP sector, they also voted to reduce the number of species that would be included in the primary target species allocation.

Issues regarding the fleet's ability to harvest the entire allocation may have surfaced if the Council had voted to include all of the species in the target category. The problems would likely have focused on small allocations of incidentally caught species, if those allocations constrained the harvest of directed fisheries. This problem could have resulted if incidental catches of those species closed directed fisheries. For example, if the allocation of arrowtooth flounder closed the yellowfin sole fishery, it could have negative economic impacts on members of the sector that harvest yellowfin sole. Yellowfin sole are targeted by several members of the Non-AFA Trawl CP sector, and constraining their harvest because of bycatch issues related to small allocations of certain groundfish species could reduce the Non-AFA Trawl CP sector's overall profitability.

Because directed fishery closures resulting from harvesting all of a bycatch species' allocation is a primary concern associated with allocating all the TAC species, management of the allocations amounts of each species would play a significant role in determining whether this will occur. If NOAA Fisheries was requested to manage the sector allocations as hard caps that cannot be exceeded, it is quite possible that closures could occur if all species were allocated under Amendment 80. Management of the sector allocations as soft caps, caps that can be exceeded when retention of incidental catch is prohibited, results in the sector allocations taking on some of the characteristics of management systems that do not allocate non-target species to sectors. In that case, the allocations would be more like guidelines to limit directed fishing for species on a sector-by-sector basis instead of at the TAC level.

Allocating all species might lead to an imbalance in the allocations if TAC fluctuations in the future increased the amount of target species that are available relative to incidentally caught species. If the shifts in TACs were large enough, the amount of incidentally caught species would not cover the amounts needed to harvest the target species. Harvesters would then need to choose the best uses for their incidentally caught species, knowing that those species could be the limiting factor in harvesting all the targeted species.

The allocation formula being considered could be calculated using retained catch as the numerator. Basing the allocation calculations on retained catch would penalize persons that did not retain incidental catch and reward those that did. The Non-AFA Trawl CP sector could be very limited in their ability to harvest target species by this formula, if all species were allocated to sectors. For example, if an incidentally caught species has a natural catch rate in a target fishery, and that species was retained at levels below the natural bycatch rate, the sector would not be allocated enough of that incidentally caught species to harvest their directed fisheries. If the sector had retained that species they would be allocated a larger percentage of the TAC than they traditionally caught. Their fishing operations would be less likely to be constrained by those species, as a result of the larger allocation, than they would have been if the

allocation was based on total catch. The estimated changes in allocation percentages, based on the various allocation options under consideration, are shown in the allocation tables presented later in this document.

The allocation formula selected by the Council could include years when each sector's incidental catch rates do not reflect current conditions. Incidental catch rates vary from year-to-year based on relative species abundance, times of the year harvests were made, and how gear is fished. If these factors have changed from the period used in the initial allocation to when cooperatives are implemented, it could distort the relative amounts of incidentally caught species that need to be harvested in the directed fisheries.

Finally, market conditions could change so that species historically taken as incidental catch would be economically desirable to take in a directed fishery. Depending on the amount of that species a sector is allocated, they may only have enough to use as incidental catch in their other target fisheries. In this case, vessel operators could simply retain the species historically taken as incidental catch. This strategy could allow them to more fully utilize their sector's allotment of all species. If that harvesting approach is not feasible, because of other factors associated with processing or marketing of the various products, the vessel operators could consider targeting the species. For this approach to make economic sense, the increased revenue generated by targeting and selling the species that previously had little or no value would need to be sufficient to off-set any reductions in net revenue resulting from reduced harvests in target species. If that does occur, it may make economic sense for individuals to modify their harvest strategy and forgo traditional directed fisheries to target that species.

Given the above discussion, it is possible that species incidentally harvested, as part of another fishery, would not be allocated in proportions that allow vessel operators to optimize the sector's harvest. Strict enforcement of each sector's allocation could result in some sector's harvests being limited beyond what was intended when the regulations were developed.

Producer surplus would be reduced if the allocations were not made at levels that would allow target fisheries to be supported by reasonable incidental catch levels and no mechanism was built into the program to allow sectors to trade species. Options that would exclude some species from the initial allocation were also proposed to alleviate problems associated with determining the optimal allocation formula for incidentally caught species.

Other alternatives were considered that would have excluded species from the initial allocation if they were expected to preclude the sector from harvesting their allocation of directed fisheries. Before these alternatives could have been implemented, the species that would be excluded must be defined. The species defined as target species and included in the sector allocations could have included all of the species currently taken in directed fisheries as well as some species that have been harvested as incidental catch. Species with relatively small TACs and that are difficult to avoid catching in other directed fisheries were most likely to be excluded from the target list.

The CDQ program provides some indication of problems that have been encountered when allocating smaller TACs to a sector. Those problems would likely be encountered if the same species were allocated to the Non-AFA Trawl CP sector. Because of these problems in the CDQ program, the Council felt it was appropriate to exclude species that met that criterion from the sector allocations. Bering Sea Northern, roughey and shortraker rockfish are examples of a species that are currently not allocated to specific groups in the CDQ program. Those species are managed by NOAA Fisheries at the CDQ level. That management system corresponds to the non-target classification proposed under this component. Those species would not be assigned to the Non-AFA Trawl CP sector and would be available for any eligible vessel to harvest. TACs for those species would be monitored by NOAA Fisheries and they would close directed fishing for the species as appropriate. Those closures may occur at the start of the year, if insufficient amounts of catch are available, or closure notices may be issued when the TAC has been harvested to the point that the remaining quota is needed as incidental catch in other target fisheries.

Squid has been treated differently than other species in the CDQ program. Initially it was allocated to CDQ groups, but because of the randomness of the incidental catch, CDQ groups had problems staying within their allocation. These problems of managing the incidental catch amount caused the CDQ groups to request that squid be removed from the program. Subsequent to that request, squid allocations were removed from the CDQ program. Currently squid is managed at the BSAI level with no further subdivisions of the quota. Therefore, squid harvests are not counted against the overall CDQ catches when determining if fisheries should be closed. That approach is equivalent to not allocating squid to Non-AFA Trawl CP sector in this program. Squid would continue to be managed as a non-target species. Directed fisheries that harvest incidental amounts of squid, primarily the pollock fishery, would not be impacted unless incidental squid catches approach the overfishing level. Because the majority of the incidental squid catch is taken in the pollock fishery, sectors that do not harvest pollock are less likely to be substantially impacted by the treatment of squid in this program. Non-AFA Trawl CP sector vessels, except the few that are allowed to harvest up to 2,000 mt of pollock, are precluded from fishing pollock under the AFA.

The Council also considered what mechanism should be developed to alter the species allocated to sectors in the future. That mechanism would need to define the criteria that must be met before a species could be added or deleted from the target list. For example, if a target species TAC is subdivided (or combined) in the future the mechanism could allow those changes to be anticipated in the allocation rules. Or, if a species in the non-target category starts being taken as a directed fishery and its harvest limits some sector's ability to take their target allocations, it could be moved to the target category. The criteria for moving a species could be reviewed during the normal October and December specification cycles when the TACs for the next year are developed. The allocation rules would need to be clearly defined to implement the changes in this short timeline. However, if a mechanism were not developed, an FMP amendment would be required to change the list of target species. Changing the target species list through an FMP amendment could require a considerable amount of time to implement (it could take several years depending on the Council workload). Because of all the above problems associated with allocating some TAC species, the Council decided to move forward with the alternative that allocates species that are primary targets of the Non-AFA Trawl CP sector.

The Council also considered an option to limit eligibility to participate in the directed fishing for the allocated species for the trawl catcher vessel sectors (AFA CV and Non-AFA CV). The option would have required 1,000 mt, 150 mt, or 1 landing of groundfish between 1995 and 2004 based on retain catch. The intent of this option was to restrict latent catcher vessels licenses from participating in the fisheries for the allocated species. In February 2006, the Council removed this option from Amendment 80 and clarified that the catcher vessel eligibility option should be included in

## **2.4 Components and Options for Amendment 80**

Provided below are the components and options that define the sector allocations in Amendment 80. These components and their respective options and suboptions are divided into four issues comprising 13 components in total. The four issues are allocations of BSAI non-pollock groundfish between the Non-AFA Trawl CP sector and the trawl limited access fishery, PSC allowance for the Non-AFA Trawl CP sector and the trawl limited access fishery, cooperative formation requirements for the Non-AFA Trawl CP sector, and the option for implementing a yellowfin sole threshold fishery. Note that Alternatives 2, 3, and 4 represent specific combinations of components and options for analysis. The Council's current suite of preferred alternatives has been identified in this document by an asterisk. For some components, multiple options have been selected as the Council's preferred alternative. In those cases, single alternative will be selected at the time of final action. It is important to note that the Council may select any alternative considered in this document at the time of final action and is not limited to the preferred alternatives identified in this draft. The Council's preferred alternative will be analyzed in the final document.

### 2.4.1 Issue 1: Sector Allocation of BSAI Non-Pollock Groundfish to the Non-AFA Trawl Catcher Processor Sector and CDQ Program

Note that the bolded components and options with the \* denote Council selected preliminary preferred alternative.

**\*Component 1** Allocate only the following primary target species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Islands Pacific Ocean perch. Species could be added or deleted through an amendment process.

**Component 2** CDQ allocations for each primary target (Component 1) species in the program shall be removed from the TACs prior to allocation to sectors at percentage amounts equal to one of the following.

Option 2.1 7.5%

**\*Option-2.2 10%**

Option 2.3 15%

**\*For Amendment 80 species, the reserves would be set at 10% of the TAC and all would be allocated to the CDQ reserves**

CDQ allocations for secondary groundfish species (except Pacific cod) taken incidental in the primary trawl target fisheries shall be removed from the TACs prior to allocation to sectors at percentage amounts equal to one of the following:

Suboption 2.1 7.5%

**\*Suboption 2.2 10%**

Suboption 2.3 15%

Suboption 2.4 At species specific percentages that reflect historical incidental catch rates in the directed fisheries for the primary species by the Non-AFA Trawl Catcher Processor sector during 1998-2003.

Suboption 2.5 The Council can select percentages for each of the secondary species allocated to the CDQ Program

**Component 3** Identifies the sector allocation calculation (after deductions for CDQs, ICAs, and other existing fishery allocations, i.e., Atka mackerel jig) for the Non-AFA Trawl CP sector. Atka mackerel and Aleutian Islands Pacific Ocean perch allocations will be calculated for individual subareas and all subareas combined (541/EBS, 542, and 543). The remaining portion of the primary species TAC included in this program would be allocated to the BSAI trawl limited access fishery.

For purpose of allocation to the Non-AFA Trawl CP sector, each primary species allocation is based upon the years and percentage of catch history selected in Component 4 using one of the following:

Option 3.1 Total legal catch of the sector over total legal catch by all sectors

Suboption 3.1.1 An ICA would be taken off the top to accommodate incidental bycatch that applies only to fixed gears.

Option 3.2 Retained legal catch of the sector over retained legal catch by all sectors

**\*Suboption 3.2.2** Allocations would be managed as a hard cap for the H&G sector, and for the Non H&G sector, an ICA would be taken off the top to accommodate incidental bycatch by the non-H&G sector. AFA vessel sideboard amounts will be determined after CDQ reserve amounts are deducted from TAC.

Option 3.3 Retained legal catch of the sector over total catch by all sectors

**\*For purpose of allocation to the Non-AFA Trawl CP sector, each primary species allocation is:**

<b>Yellowfin Sole</b>	<b>82.5%</b>
<b>Rock Sole</b>	<b>97%</b>
<b>Flathead Sole</b>	<b>98%</b>
<b>Atka Mackerel</b>	<b>98% in 541/EBS and 542, in the first year of the program, decreasing by 2% increments over 4-yr period to 90%. 100% in 543.</b>
<b>AI POP</b>	<b>95% in 541 and 542 in the first year of the program, decreasing to 90% in the second year of the program. 98% in 543.</b>

**Legal landing means, for the purpose of initial allocation of QS, fish harvested during the qualifying years specified and landed in compliance with state and federal permitting, landing, and reporting regulations in effect at the time of the landing. Legal landings exclude any test fishing, fishing conducted under an experimental, exploratory, or scientific activity permit or the fishery conducted under the Western Alaska CDQ program.**

Option 3.4 Management of groundfish allocations

Suboption 3.4.1 Allocations would be managed as a hard cap. When the allocation is reached, further fishing would be prohibited.

Suboption 3.4.2 Allocations would be managed as a soft cap. When the allocation is reached, species would be prohibited status.

**\*Option 3.5 This option may be selected in conjunction with Options 3.1 through 3.4. Target species and PSC rollover: any unharvested portion of the Amendment 80 target species or unharvested portion of PSC in the limited access fishery that is projected to remain unused shall be rolled over to vessels that are members of Amendment 80 cooperatives.**

**Any roll over of halibut PSC to the Non-AFA Trawl CP sector shall be discounted by 5%. That is, if 100 mt of halibut is available for roll over, then 95 mt of halibut would be re-allocated to the Non-AFA Trawl CP sector. Once the initial allocation has been determined, the Non-AFA Trawl CP sector may re-allocate the PSC among the target species.**

**NMFS shall perform a review on or before May 1 and August 1 each year, and at such other times after August 1 as it deems appropriate. In making its determination, NMFS shall consider current catch and PSC usage, historic catch and PSC usage, harvest capacity and stated harvest intent, as well as other relevant information.**

**Component 4** Catch history years used to determine the allocation to the Non-AFA Trawl CP sector in Component 3.

Option 4.1 1995-2003

Option 4.2 1997-2002

Option 4.3 1998-2002

Option 4.4 1998-2004

Option 4.5 1999-2003

Option 4.6 2000-2004

Option 4.7 The Council can select percentages for each of the species allocated to the Non-AFA Trawl CP sector.

#### 2.4.2 Issue 2: PSC Allowance for the Non-AFA Trawl Catcher Processor Sector and the CDQ Program

**\*Component 5** Increase PSQ reserves allocated to the CDQ program (except herring and Chinook salmon) to levels proportional to the CDQ allocation of primary species under Component 2.

**Component 6** PSC allowances of halibut and crab to the Non-AFA Trawl CP Sector.

Option 6.1 Apportion PSC to Non-AFA Trawl CP sector:

**\*Suboption 6.1.1** Allocation halibut PSC based on historical usage of PSC by the Non-AFA Trawl Catcher Processor sector from January 1, 2002 thru December 31, 2004 rather than the sector's allocation, with the remainder available to the other sectors.

**\*Suboption 6.1.1.1** Reduce apportionments to 80% of calculated level

**\*Suboption 6.1.1.1.1** Phase in PSC reductions 5% per year starting in second year of program.

Suboption 6.1.2 Allocation based on the PSC taken in the Non-AFA Trawl Catcher Processor sector directed fishery for allocated primary species plus Pacific cod.

Suboption 6.1.3 Percentage allocations (estimates for PSC associated with Pacific cod catch would be based on the process laid out in Component 3) selected in Component 3 multiplied by the relevant total PSC catch by all trawl vessels in each PSC fishery group for allocated primary species plus Pacific cod.

**\*Suboption 6.1.4** Allocation of halibut PSC to the non-AFA Trawl CP sector shall be determined by that sector's percentage allocations of target species groups (contained in Component 3) multiplied by the trawl PSC amounts for those target species groups as set forth in the annual specifications.

Sectoral PSC allocations will be calculated using a predetermined fixed target fishery bycatch rate, based on the 2002-2004 average consumption rate across the trawl sectors based on the lesser of the TAC or the previous year's catch, with initial allocations of the PSC to all trawl target fisheries adjusted pro rata such that their sum equals the overall trawl PSC allocation.

The following maximum and minimum allowances shall apply to the initial PSC allocations: Non-AFA Trawl CP sector shall receive an allowance of not less than 2,200 mt of halibut and not more than 2,450 mt of halibut. Trawl limited access sectors shall receive an allowance of not less than 950mt of halibut and not more than 1,200 mt of halibut. Minimum and maximum allowances of crab PSC for each sector may be selected within the range of alternatives identified in the January 2006 Amendment 80 analysis.

Option 6.2 Select a Non-AFA Trawl CP sector PSC reduction option from the following that would apply to any PSC apportionment suboption selected in 6.1. PSC reduction options can vary species by species. Any reduction in the Non-AFA Trawl CP sector should not result in an increase in PSC allocation to any other sector.

Suboption 6.2.1 Reduce apportionments to 60% of calculated level.

Suboption 6.2.2 Reduce apportionments to 75% of calculated level.

Suboption 6.2.3 Reduce apportionments to 90% of calculated level.

Suboption 6.2.4 Reduce apportionments to 95% of calculated level.

Suboption 6.2.4.1 Start the reduction in the third year of the program.

Suboption 6.2.5 Do not reduce apportionments from calculated level.

Suboption 6.2.6 Phase in PSC reductions 5% per year for Suboptions 6.2.1–6.2.4.

Suboption 6.2.7 Reductions under Suboptions 6.2.1–6.2.4 apply only to vessels that participate in the Non-AFA Trawl CP sector's limited access fishery.

**\*Option 6.3 The Council can select percentages and/or amounts for PSC allocated to the Non-AFA Trawl CP sector.**

**Crab PSC allocations to the Non-AFA Trawl Catcher Processor sector shall be based on the percent of historic usage of crab PSC in all groundfish fisheries from 1995 to 2002 (resulting percentages are reported in the far right column in Table 3-43 in the March 16, 2006 EA/RIR/IRFA):**

**Red king crab.....37.52%**

**C. opilio.....61.44%**

**Zone 1 C. bairdi...52.64%**

**Zone 2 C. bairdi...29.59%**

**The initial allocation will be reduced by 5% per year starting in the second year until the Non-AFA Trawl CP sector is at 80% of the initial allocation. Trawl limited access sectors shall receive an allowance of the sum of the combined AFA CV/CP sideboards. These levels shall be reviewed, and further reduced as necessary, by the Council during the fifth year of the program. (Note – basing usage on a % of annual PSC limits, results in a calculation that is crab abundance based.)**

**If Amendment 85 is implemented prior to Amendment 80, the Non-AFA Trawl CP sector would receive an allocation of PSC in accordance with Amendment 85. Upon implementation of Amendment 80, no allocation of PSC will be made to the Non-AFA Trawl CP sector under Amendment 85.**

#### **2.4.3 Issue 3: Cooperative Development for the Non-AFA Trawl Catcher Processor Sector**

**\*Component 7** The BSAI non-pollock groundfish CP buyback legislation establishes the vessels eligible to participate as a catcher processor in the BSAI non-pollock groundfish fisheries. The members of the Non-AFA Trawl Catcher Processor subsector are defined as the owner of each trawl CP:

a.) that is not an AFA Trawl CP

b.) to whom a valid LLP license that is endorsed for BSAI Trawl CP fishing activity has been issued; and

- c.) that the Secretary determines who has harvested with trawl gear and processed not less than a total of 150 mt of non-pollock groundfish during the period January 1, 1997 – through December 31, 2002.

This definition establishes the vessels that can participate in the Amendment 80 program.

Restrict LLPs that are used for eligibility in Amendment 80 (either to be included in the Non-AFA CP sector or to be used in Amendment 80 cooperative formation) from being used outside of the Amendment 80 sector, except that any eligible vessel which is authorized to fish Pollock under the AFA would still be authorized to fish under the statute.

Only history from eligible vessels will be credited in the program. The catch history credited to an eligible vessel will be catch history of that vessel. The catch history credited to an eligible vessel for the first license assigned to that vessel will only be the catch history of the eligible vessel. The catch history of any vessel that meets the non-AFA and catch criteria of Component 7 which has sunk, is lost or becomes inoperable, or becomes otherwise ineligible during or after the qualifying period will be credited to the license that arose from that vessel. Any such license assigned to an eligible vessel will be credited with the catch history during the Component 10 period of the eligible non-AFA trawl CP from which the license arose, except that no history can be assigned to more than one vessel at a given time. Once the catch history has been assigned to the license, that license must be eligible Non-AFA Trawl CP vessel.

**Component 8** Establishes the number of vessels required before the cooperative is allowed to operate. No later than November 1 of each year, an application must be filed with NOAA fisheries by the cooperative with a membership list for the year.

In order to operate as a cooperative, membership must be comprised of at least three separate entities (using the 10% AFA rule) and must be:

- Option 8.1 At least 15 % of the eligible vessels
- \*Option 8.2 At least 30% of the eligible vessels**
- Option 8.3 At least 67% of the eligible vessels
- Option 8.4 At least 100% of the eligible vessels
- Option 8.5 All less one distinct and separate vessel using the 10% threshold rule
- Option 8.6 All less one vessel

**Component 9** Determines the method of allocation of PSC limits and groundfish between the cooperative and eligible Non-AFA Trawl CP participants who elect not to be in a cooperative.

- \*Option 9.1 Catch history is based on total catch**
- Option 9.2 Catch history is based on total retained catch

Assign PSC within the sector to allocated target species and Pacific cod based on the average use of PSC in each target species from the years 1998-2004, expressed as a percent of the total PSC allocation to the sector.

Each eligible vessel will then receive an allocation percent of PSC for catch of allocated target species and Pacific cod equal to its proportion of the catch history of the allocated fishery.

This PSC allocation will not change from year to year (i.e., will not fluctuate annually with the TAC).

**Component 10** Determines which years of catch history are used for establishing cooperative allocations. The allocation of groundfish between the cooperative and those eligible participants

who elect not to join a cooperative is proportional to the catch history of groundfish of the eligible license holders included in each pool. Applicable PSC limits are allocated between the cooperative and non-cooperative pool in same proportions as those species that have associated PSC limits. The catch history as determined by the option selected under this component would be indicated on the Sector Eligibility Endorsement, which indicates the license holder's membership in the Non-AFA Trawl CP sector. The aggregate histories would then be applied to the cooperative and the non-cooperative pool.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the program of no less than:

**0.5 percent of the yellowfin sole catch history**

**0.5 percent of the rock sole catch history**

**0.1 percent of the flathead sole catch history**

Option 10.1 1995-2003, but each vessel drops its 3 lowest annual catches by species during this period

Option 10.2 1997-2003, but vessel holder drops its two lowest annual catches by species during this period

Option 10.3 1998-2002, but vessel holder drops its lowest annual catch by species during this period

Suboption 10.3.1 Each vessel does not drop its lowest annual catch by species during this period

Option 10.4 1998-2003, but each vessel drops its lowest annual catch by species during this period

Suboption 10.4.1 Each vessel drops two years during this period

Option 10.5 1999-2003, but each vessel drops its lowest annual catch by species during this period

Option 10.6 1997-2004, but each vessel drops its two lowest annual catch by species during this period

Option 10.7 1997 - 2004, but each vessel drops its three lowest annual catch by species during this period

**\*Option 10.8 1998 - 2004, but each vessel drops its two lowest annual catch by species during this period**

Option 10.9 Select the highest percentage allocation by species, for each vessel using total catch of the vessel over the total catch of the sector for the following four suites of years: 1997-2003, drop 2; 1997-2004, drop 2; 1997-2004, drop 3; 1998-2004, drop 2. Different year scenarios may be chosen for different species.

Add all of the percentages together and then adjust proportionally to 100%.

**For AI POP, all vessels will receive their allocation equally in 541, 542 and 543.**

Each vessel will receive its historic share of the sector's Atka mackerel allocation based on component 10 (all areas combined). Vessels less than 200' in length having less than 2% of the sector's Atka mackerel history ("Non-mackerel vessels") will receive their allocation distributed by area according to each individual vessel's catch distribution during the component 10 years. The remainder of EBS/541, 542 and 543 sector allocation after "Non-mackerel vessels" have been removed will be allocated to vessels that are greater than 200' in length or have more than 2% of the sector's Atka mackerel allocation ("mackerel vessels"). Mackerel vessels will receive their respective percentages (adjusted to 100%) equally in each area.

**In the event that the Non-AFA Trawl CP sector receives an exclusive allocation of Pacific cod, that allocation will be divided between cooperatives and the sector's limited access fishery in the same manner (and based on the same history) as the division of the other allocated species within the sector.**

**Component 11** Determines if excessive share limits are established in the Non-AFA Trawl CP sector.

Option 11.1 There is no limit on the consolidation in the Non-AFA Trawl CP sector.

**\*Option-11.2 Consolidation in the Non-AFA Trawl Catcher Processor sector is limited such that no single person (using the individual and collective rule) can hold catch history more than a fixed percentage of the overall sector apportionment history. The cap would be applied on an aggregate basis (options: 20%, \*30%, 40%, or 50% of the sector's allocation).**

Suboption 11.2.1 Cap would be applied on an aggregated basis.

**\*Suboption 11.2.2 Persons (individuals or entities) that exceed the cap in the initial allocation would be grandfathered.**

**\*Option 11.3 No vessel shall harvest more than 5%, \*10%, 15% or 20% of the entire Non-AFA Trawl CP sector allocation.**

**\*Suboption 11.3.1 Vessels that are initially allocated a percentage of the sector allocation that is greater than the vessel use cap shall be grandfather at their initial allocation.**

**Component 12** Establishes measures to maintain relative amounts of non-allocated species until such time that fisheries for these species are further rationalized in a manner that would supersede a need for these sideboard provisions. Sideboards shall apply to eligible licenses and associated vessels from which the catch history arose.

Option 12.1 BSAI and/or GOA sideboards for the Non-AFA Trawl CP sector would be established by regulation using the same years used to calculate the apportionment of PSC and groundfish between the Non-AFA Trawl CP and limited access pool until such time as these other fisheries are rationalized, when the allocations are determined in these newly rationalized fisheries.

Suboption 12.1.1 Sideboards would be allocated between cooperative and non-cooperative LLP holders, based on the same formula as Component 10.

Option 12.2 BSAI and/or GOA sideboards for the Non-AFA Trawl CP sector would be established by regulation by establishing percentages and/or amounts for the species/fisheries not included in this program. These measures maintain relative amounts of non-allocated species until such time that fisheries for these species are further rationalized in a manner that would supersede a need for these sideboard provisions.

Suboption 12.2.1 Sideboards would be allocated between cooperative and non-cooperative LLP holders, based on the same formula as Component 10.

**\*Option 12.3 In the BSAI, Pacific cod will be managed under existing sector apportionments, with rollovers, until new Pacific cod sector allocations are implemented. Pacific cod will be allocated between the cooperative and non-cooperative sub-sectors based on the same formula as Component 10.**

In the BSAI, management of unallocated species should remain status quo.

Option 12.4 GOA sideboard provisions

Sideboard provisions for Amendment 80 qualified non-AFA trawl CP sector with valid GOA LLP with appropriate area endorsements are as follows:

- \*Suboption 12.4.1** Vessels associated with LLPs that have Gulf weekly participation of greater than 10 weeks in the flatfish fishery during the years defined in Component 10 will be eligible to participate in the GOA flatfish fisheries.
- \*Suboption 12.4.2** Non-AFA Trawl CP vessel(s) that fished 80% of their weeks in the GOA flatfish fisheries from January 1, 2000 through December 31, 2003 will be exempt from GOA halibut sideboards in the GOA. Vessel(s) exempt from Amendment 80 halibut sideboards in the GOA may participate fully in the GOA open-access flatfish fisheries. The history of this vessel will not contribute to the Non-AFA CP sideboards and its catch will not be subtracted from these sideboards.
  - \*Suboption 12.4.2.1** Vessel(s) exempted from Amendment 80 GOA sideboards may not lease their Bering Sea Amendment 80 history.
- \*Suboption 12.4.3** Gulf-wide halibut sideboards for the deep and shallow complex fisheries would be established by season calculated based on:
  - Option A: Bycatch rate approach for each of the target fisheries within each of the regulatory areas (610, 620, 630, and 640) for the Amendment 80 qualified non-AFA trawl sector for the years defined in Component 10
  - \*Option B:** Actual usage for the Amendment 80 qualified non-AFA trawl sector for the years defined in Component 10
  - Option C: The Council may select a percentage for halibut sideboards which is between options A and B.
- \*Suboption 12.4.4** GOA Pollock, Pacific cod, and directed rockfish species (POP, NR and PSR) sideboards for the Amendment 80 qualified non-AFA trawl CP sector would be established using the years defined in Component 10, where catch is defined as retained catch by Gulf area as a percentage of total retained catch of all sectors in that area.
- \*Suboption 12.4.5** While the CGOA rockfish demonstration program is in place, the CGOA rockfish demonstration program takes precedence. The demonstration program would remove the need for catch sideboards for the CGOA directed rockfish species. The Amendment 80 CPs deep halibut mortality sideboard cap for the 3rd seasonal allowance (in July) will be revised by the amount of the deep complex halibut mortality allocated to the rockfish demonstration program for the Amendment 80 qualified non-AFA trawl CP sector while the demonstration program is in effect.
- \*Suboption 12.4.6** Sideboards apply to vessels (actual boats) and LLPs used to generate harvest shares that resulted in allocating a percentage of the Amendment 80 species TACs to the non-AFA trawl CP sector. The

intent is to prevent double-dipping with respect to GOA history related to sideboards.

- \***Suboption 12.4.7** On completion of a comprehensive rationalization program in the GOA, any sideboards from the BSAI Amendment 80 plan amendment will be superseded by the allocations in the GOA rationalization program.
- \***Suboption 12.4.8** Sideboards for PSC and GOA groundfish would be allocated between cooperative and non-cooperative vessel/licenses that are initially assigned harvest privileges for the five BSAI species allocated, based on the same formula as Component 10.
- \***Suboption 12.4.9** Each cooperative will receive its GOA sideboards; cooperatives that sign an inter-cooperative agreement that allow aggregation of sideboards will be included within the aggregated sideboards. GOA sideboards may not be transferred between cooperatives. Sideboards limits assigned to cooperative will be managed as hardcaps.

#### 2.4.4 Issue 4: Development of a Yellowfin Sole Threshold Fishery

**Component 13** The Council will allocate yellowfin sole above the threshold to participating sectors when the ITAC is anticipated to reach the threshold level. ITAC below the threshold level would be allocated to the Non-AFA Trawl Catch Processor sector based on the formula determined in Components 3 and 4. Threshold levels for other species may be developed at a later date. AFA sideboards do not apply to the YFS threshold fishery. The Council will allocate yellowfin sole above the threshold to participating sectors when the ITAC is anticipated to reach the threshold level.

Option 13.1 Threshold Rollover options:

Suboption 13.1.1 No rollover provision

Suboption 13.1.2 Any unharvested portion of the threshold reserve allocated to the limited access fishery that is projected to remain unused by a specific date (August 1 or Sept 1) shall be reallocated to the Non-AFA Trawl CP sector. Any unharvested portion of the threshold reserve allocated to the Non-AFA Trawl CP sector that is projected to remain unused by a specific date (August 1 or September 1) shall be reallocated to the limited access fishery.

\***Suboption 13.1.3** Allow rollovers of any portion of the yellowfin sole TAC that is projected by the NOAA Regional Administrator to go unused. The NOAA Regional Administrator would be responsible for determining both the amount and the timing of the rollover.

Option 13.2 Yellowfin sole threshold options:

Suboption 13.2.1 80,000 mt

Suboption 13.2.2 100,000 mt

\***Suboption 13.2.3 125,000 mt**

**Suboption 60% Non-AFA Trawl CP sector and 40% limited access fishery**

Suboption 13.2.4 150,000 mt

Suboption 13.2.5 175,000 mt

Option 13.3 Allocate the threshold reserve to the Non-AFA Trawl CP sector and the BSAI limited access fishery using one of following suboptions:

Suboption 13.3.1 30% Non-AFA Trawl CP sector and 70% limited access fishery

Suboption 13.3.2 50% Non-AFA Trawl CP sector and 50% limited access fishery

Suboption 13.3.3 70% Non-AFA Trawl CP sector and 30% limited access fishery

#### **2.4.5 Other Elements of Amendment 80**

**This section provides additional specifics and elements for the Non-AFA Trawl CP cooperative program. These specifics and elements are common for any cooperative program that might be developed.**

- **\*The cooperative program developed in Amendment 80 would not supersede pollock and Pacific cod IR/IU programs.**
- **\*The Groundfish Retention Standards (GRS) (Amendment 79) would be applied to the cooperative as an aggregate on an annual basis and on those vessels who did not join a cooperative as individuals.**
- **\*Non-AFA Trawl CP sector participants that did not elect to join a cooperative would be subject to all current regulations including all restrictions of the LLP and the GRS if approved.**
- **\*All qualified license holders participating in the fisheries of the Non-AFA Trawl CP sector for Amendment 80 species would need to have trawl and catcher processor endorsements with general licenses for BSAI and the additional sector eligibility endorsement. Length limits within the license would also be enforced such that any replacement vessel entering the fishery would not exceed the Maximum Length Overall (MLOA) specified on the license.**
- **\*Permanent transfers of an eligible vessel, its associated catch history, and its permit would be allowed. Eligible vessels, their associated catch history, and sector eligibility endorsement would not be separable or divisible. In the case of a sunk, lost, inoperable or otherwise ineligible vessel, catch history would be attached to the license that arose from the vessel and could not be separable or divisible. All transfers must be reported to NOAA Fisheries in order to track who owns the sector eligibility permit and harvest privileges of a vessel. The purchaser must be eligible to own a fishing vessel under MarAd regulations or any person who is currently eligible to own a vessel.**
- **\*Annual allocations to the cooperative will be transferable among Non-AFA Trawl CP cooperative members. Such transfers will not need NOAA Fisheries approval.**
- **\*Annual allocations to the cooperative will be transferable among Non-AFA Trawl CP cooperatives. Inter-cooperative transfers must be approved by NOAA Fisheries.**
- **\*Any non-trawl or non-BSAI catches by qualified license holders that are considered part of the Non-AFA Trawl CP sector will not be included in the defined cooperative program. In addition, these non-trawl or non-BSAI catches allocated to the Non-AFA Trawl CP sector would not necessarily be excluded from other rationalization programs.**
- **\*Catch history used for allocation and eligibility purposes will be legal and documented catch.**
- **\*Disposition of groundfish species not allocated to the Non-AFA Trawl CP sector will not change as a result of the cooperative program developed in Amendment 80.**

- **\*Bycatch limits for non-specified species or marine resources would not be established. However, if the Council deems that bycatch is unreasonable, specific regulations to minimize impacts would be considered.**
- **\*The cooperative(s) would need to show evidence of binding private contracts and remedies for violations of contractual agreements would need to be provided to NOAA Fisheries. The cooperative would need to demonstrate adequate mechanism for monitoring and reporting prohibited species and groundfish catch. Participants in the cooperative would need to agree to abide by all cooperative rules and requirements.**
- **\*Specific requirements for reporting, monitoring and enforcement, and observer protocols will be developed in regulations for participants in the Non-AFA Trawl CP sector. These monitoring and enforcement provisions are described in Section 3.3.7 of the April 2006 EA/RIR/IRFA. Revisions to 3.3.7 have been described in a March 27, 2006 letter from NMFS to the Council.**
- **\*A detailed annual report will be required from each cooperative(s). Fishery managers will review the annual report and determine if the program is functioning as desired. An in-depth assessment of the program will be undertaken under the auspices of the Council/NOAA Fisheries every five years). The in-depth studies will report the accomplishments of the program and indicate whether any changes are necessary. This assessment shall determine whether the program is successful in reducing bycatch, minimizing waste, and improving utilization to the extent practicable to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, including the CDQ sector, communities and the nation as a whole. The Council shall consider significant changes or events (regulatory, economic, or biological) which negatively impact the Amendment 80 participants.**
- **\*A socioeconomic data collection program will be implemented under the Non-AFA Trawl CP Cooperative Program. The program will collect cost, revenue, ownership, and employment data on a periodic basis. The purpose of the data collection is to fully understand the socio-economic impacts of the action, to inform future management actions, and to assure that this action serves its intended purpose and meets the goals set forth in the problem statement. Data will be used by Council and agency staff, recognizing that confidentiality is of extreme importance.**

The ownership data will be collected by vessel for enforcement of the ownership cap regulations; ownership data collection is essential to ensure that ownership caps are not exceeded. Employment data will be collected for monitoring of the community impacts of this program. Revenue and cost data by vessel and sector are essential to identify/estimate the costs associated with bycatch reduction and estimate the revenues generated to the sector, as an objective of this program is to offer sector participants the opportunity to mitigate, to some degree, the costs associated with bycatch reduction. Revenue, cost and employment data will be used to monitor the program benefits to present generations of fishermen, associated fishing sectors, including the CDQ sector, communities, and the nation as a whole.

The Council will implement the following process for developing appropriate elements of the data collection program.

1. Convene a staff workgroup to develop information necessary to answer questions posed by NOAA Fisheries by letter of March 28, 2006 to ensure an adequate basis for the data collection program.

- 2. Host an industry workshop during the June 2006 Council meeting week to review and solicit comments in the socio economic data collection program.**
- 3. Council review and approval of the socio-economic data collection program and considerations of SSC comments.**

### 3 REGULATORY IMPACT REVIEW: ECONOMIC IMPACTS OF THE ALTERNATIVES

This chapter provides information on the economic and socioeconomic impacts of the alternatives, as required under Executive Order 12866 (E.O. 12866). This chapter identifies the individuals or groups that may be affected by the proposed action, the nature of these impacts (quantifying the economic impacts wherever possible), and discusses the tradeoffs between benefits and costs when possible.

The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

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

This section addresses the requirements of E.O. 12866 to provide adequate information to determine whether an action is “significant” under E.O. 12866. The Executive Order 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:

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

The groundfish fisheries in the Exclusive Economic Zone (3 to 200 miles offshore) of the Bering Sea and Aleutian Islands off Alaska are managed under the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI Groundfish FMP), as developed by the North Pacific Fishery Management Council under the Magnuson-Stevens Fishery Conservation and Management Act. The BSAI Groundfish FMP was approved by the Secretary of Commerce and became effective in 1982.

Proposed Amendment 80 to the BSAI Groundfish FMP would allocate yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch, and prohibited species catch limits to the Non-AFA Trawl CP sector. The proposed action would also establish a cooperative structure for the Non-AFA Trawl CP sector. This document satisfies analytical requirements under E.O. 12866, the National Environmental Policy Act, and the Regulatory Flexibility Act, as well as other applicable laws.

#### 3.1 Existing Conditions in the Fishery

This section describes the conditions in the BSAI groundfish fishery under the current management. Because the status quo alternative is continuation of the current management and continuation of that management is unlikely to result in substantial change in the fisheries, the section also provides much of

the status quo baseline that is used to assess the effects of Amendment 80 alternatives under consideration. This section begins with a brief description of the management of the fisheries considered in this action followed by a description of these fisheries. A detailed description of the Non-AFA Trawl CP sector is also provided in this section. Product markets are described and estimated historic first wholesale prices are provided. Finally, a brief description of community and a description of the Western Alaska Community Development Quota program are provided.

### 3.1.1 Management of the Fisheries

The BSAI management area encompasses the U.S. Exclusive Economic Zone (EEZ) of the eastern Bering Sea and that portion of the North Pacific Ocean adjacent to the Aleutian Islands west of 170° W. longitude. The northern boundary of the Bering Sea is the Bering Strait, defined as a straight line from Cape Prince of Whales to Cape Dezhneva, Russia.

The A season for the trawl fisheries under consideration in this action are from January 20 through April 1; the B season is from April 1 through June 10; and finally, the C season is from June 10 to November 1.

Both the trawl and non-trawl fisheries are prosecuted from a single TAC. The TAC specifications for the primary allocated species and PSC specifications are recommended by the Council at its December meeting. The recommendations are based on Stock Assessment Fishery Evaluation reports prepared by Council BSAI Groundfish Plan Team. The Secretary, after receiving recommendations from the Council, determines up to 2 years of TACs and apportionments. The TAC for each of the allocated species is reduced by 15 percent to form the reserve and CDQ allocations. One-half of the reserve is used for CDQ allocations. The remaining portion of the reserve is used for: a) correction of operational problems in the fishing fleets, to promote full and efficient use of groundfish resources, b) adjustments of species TACs according to the condition of stocks during fishing year, and c) apportionments.

Since 1994, the Atka mackerel quota has been split during the annual specifications into three separate area allocations based on the most recent biomass estimates. The three areas are the Bering Sea/eastern Aleutian Islands (Bering Sea and Area 541), the central Aleutian Islands (area 542), and the western Aleutian Islands (Area 543). In 1999, Area 542 and Area 543 were further split into critical habitat and non-critical habitat area due to Steller sea lion concerns. In addition, up to 2 percent of the Atka mackerel TAC in the eastern Aleutian Islands District/Bering Sea subarea can be allocated to vessels using jig gear in the areas noted above. In 2005, the Council recommended and NMFS approved allocating 1 percent to vessels using jig gear.

A federal groundfish license is required for vessels participating in any federal BSAI groundfish fishery, other than fixed gear sablefish. Those exempt from the license requirement are vessels fishing in State of Alaska waters, vessels less than 32' LOA, or jig gear vessels less than 60' LOA using a maximum of 5 jig machines, one line per machine, and a maximum of 15 hooks per line. The LLP limits the number, size, and specific operation of vessels that may be deployed in certain groundfish fisheries under the Council's jurisdiction. For a person to qualify for an LLP permit, the person must own a vessel that has documented harvests of groundfish during two periods, the general qualification period and the endorsement qualification period. In addition to the area/species endorsements, the LLP license is designated for use on either a catcher/processor or catcher vessels and the vessel's length category. LLP licenses may be transferred subject to the vessel designations and area/species endorsements.

Table 3-1 shows the number of LLP licenses issued for the BSAI by trawl sector. There are 64 trawl licenses designated as catcher processors that are endorsed for the BSAI area. Twenty of these licenses are currently registered to AFA trawl CP vessels operating in the BSAI. The remaining 44 trawl CP licenses are either currently registered to Non-AFA Trawl CP vessels that currently operate in the BSAI and/or GOA or they are registered to other vessels but are not being used in either area. Of the 44 Non-AFA trawl CP licenses, 22 also have Gulf of Alaska endorsements. There are 152 trawl licenses designated for catcher vessels that are endorsed for BSAI area. One hundred and two of these licenses are

currently registered to AFA Trawl catcher vessels leaving 50 licenses that are registered to Non-AFA Trawl catcher vessels.

**Table 3-1 BSAI trawl LLP licenses by trawl sector**

Sector	BS only LLP	AI only LLP	BSAI LLP	Total License
AFA Trawl CP	1	0	19	20
Non-AFA Trawl CP	6	1	37	44
<b>Total Trawl CP Licenses</b>	<b>7</b>	<b>1</b>	<b>56</b>	<b>64</b>
AFA Trawl CV	59	0	43	102
Non-AFA Trawl CV	44	2	4	50
<b>Total Trawl CV Licenses</b>	<b>103</b>	<b>2</b>	<b>47</b>	<b>152</b>

Source: NMFS Groundfish LLP database. Current as of July 13, 2005.

Inseason management credits both directed harvest and incidental harvest against the TAC for groundfish species to ensure they are not over harvested. The directed fishery for any groundfish species is closed when the directed fishing amount is harvested, reserving the remainder of the TAC for incidental catch in other groundfish fisheries. NOAA Fisheries allows vessels to retain incidental catch of groundfish species (if the TAC has not been reached) taken in other directed fisheries that are open, up to the maximum retainable amount (MRA). If the fishery is closed to directed fishing and the TAC is reached, NOAA Fisheries issues a prohibition on retention for that species and all catch of that species must be discarded. If a fishery is closed to directed fishing for one of these species, the ABC has been taken, and the harvest is approaching the overfishing level, then NOAA Fisheries could close target fisheries that incidental harvest that species.

Pacific halibut, Pacific herring, Pacific salmon and steelhead, king crab, and Tanner crab are prohibited species and should be avoided while fishing for groundfish and must be returned to the sea with a minimum of injury except when their retention is authorized by other applicable law. PSC is apportioned between target fishery categories: trawl and non-trawl fisheries. The halibut PSC limit for trawl gear is currently 3,675 mt. The PSC limits for *C. bairdi* and *C. opilio* crab are dependent upon the abundance of these species of crab, while the PSC limit for red king crab is dependent upon the number of mature female red king crabs.

All vessels participating in the groundfish fisheries are required to retain all catch of pollock and Pacific cod, when directed fishing for those species is open, regardless of gear type employed and target fishery. When directed fishing for an IR/IU species is prohibited, retention of that species is required only up to any maximum retainable amount in effect for that species. No discarding of whole fish of these species is allowed, either prior to or subsequent to that species being brought on board the vessel except as required in the regulations. At-sea discarding of any processed product from any IR/IU species is also prohibited, unless required by other regulations. The no action alternative also includes the revision of the pollock MRA in the BSAI, which was implemented on June 2004. Under this revision, the enforcement period for pollock harvest in the BSAI was modified from enforcement at anytime during a fishing trip to enforcement at the time of offload.

All IR/IU species caught in the BSAI must be either 1) processed at sea subject to minimum product recovery rates or 2) delivered in their entirety to onshore processing plants for which similar processing requirements are implemented by State regulations.

Although Amendment 79 to the BSAI Groundfish FMP, the groundfish retention standard (GRS), has not yet been implemented, a final rule should be published before final action on Amendment 80, which is scheduled for December 2005. There are three likely scenarios. One is the Secretary of Commerce (SOC) could implement GRS in 2006 at 75 percent. Another scenario is that the SOC approves Amendment 79

at 65 percent starting in 2007. Finally, the SOC could disapprove Amendment 79. Due to the timing of the two actions, the no action alternative could change after initial review of Amendment 80 in October 2005 but before final review in December 2005. For purposes of the initial review of the proposed action, the no action alternative will include a GRS phased in over a four year period for Non-AFA Trawl CP vessels greater than 125 ft length overall starting in 2007 at 65 percent and culminating in 2010 at 85 percent. The decision to use this scenario is based on the Council's recommendation to the SOC at the June 2005 meeting to implement Amendment 79 in 2007 at 65 percent to allow ample time for Non-AFA Trawl CP sector to complete any retrofits necessary to meet the enforcement and monitoring requirements included in Amendment 79. In addition, the Council felt it was important to allow the sector time to develop a vessel buyback program authorized under the Consolidated Appropriations Act of 2005. Finally, the Council also clarified at the June 2005 meeting that the specific years tied to GRS in the original action are of less importance than starting at the intended 65 percent.

### 3.1.2 Description of BSAI Groundfish Fisheries

In the BSAI, the rock sole, flathead sole, and other flatfish fisheries are almost exclusively prosecuted by catcher processors using bottom trawl gear. Although the fisheries are open to other vessel categories and gear types, very few rock sole, flathead sole, other flatfish are harvested by other types of vessels. Vessels participating in these fisheries generally fish for rock sole during the roe season until the first seasonal halibut bycatch cap is reached. Generally, after the rock sole roe fishery closes, these vessels shifted to several different targets; notably Atka mackerel, yellowfin sole, and Pacific cod. Vessels also can go into the GOA to fish for rex sole.

The directed Atka mackerel fishery is a bottom trawl fishery that occurs off the continental shelf in the Eastern Bering Sea (EBS) and in the passes between the islands of the central and western Aleutians.

Thirty-five species of rockfish (genus *Sebastes* and *Sebatolobus*) occur in the BSAI of which eight are commercially important. In recent years, the only BSAI rockfish species open for directed fisheries has been the Pacific Ocean perch complex which includes Pacific Ocean perch, sharpchin, northern, shorttraker, and roughey rockfish. In the BSAI, directed fisheries for these are mostly conducted by catcher processors using bottom trawl gear and hook and line catcher vessels.

Provide below are detailed descriptions of the primary species that would be allocated under the proposed action. Generally, data are presented for each BSAI groundfish fishery for 1995 through 2003. Limited catch data are reported for earlier years in order to provide a more complete historical perspective on catch. Catch data for each fishery are provided by gear type.

The most recent descriptions of the BSAI groundfish fisheries are from the *Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions* (NPFMC 2004). Please see this document for further details on the groundfish fisheries in the BSAI.

#### 3.1.2.1 Yellowfin Sole Fishery

The yellowfin sole is one of the most abundant flatfish species in the eastern Bering Sea and is the target of the largest flatfish fishery in the United States. The resource inhabits the eastern Bering Sea shelf and is considered one stock. Abundance in the Aleutian Islands region is negligible.

The directed fishery typically occurs from spring through December. Yellowfin sole have annually been caught with bottom trawls on the Bering Sea shelf since the fishery began in 1954. Yellowfin sole were overexploited by foreign fisheries in 1959-62 when catches averaged 404,000 mt annually. As a result of reduced stock abundance, catches declined to an annual average of 117,800 mt from 1963-71 and further declined to an annual average of 50,700 mt from 1972-77. The lower yield in this latter period was partially due to the discontinuation of the Soviet fishery. In the early 1980s, after the stock condition had improved, catches again increased reaching a recent peak of over 227,000 mt in 1985. During the 1980s, there was also a major transition in the characteristics of the fishery. Yellowfin sole were traditionally

taken exclusively by foreign fisheries and these fisheries continued to dominate through 1984. However, U.S. fisheries developed rapidly during the 1980s in the form of joint ventures, and during the last half of the decade began to dominate and then take all of the catch as the foreign fisheries were phased out of the eastern Bering Sea. Since 1990, only domestic harvesting and processing has occurred.

The 1997 catch of 181,389 mt was the largest since the fishery became completely domestic which decreased to 101,201 mt in 1998. The 2001 catch totaled 63,400 mt and 55,400 mt have been caught in 2002 through the middle of September. Thus far, the 2002 catch is 48 percent of the acceptable biological catch (ABC) and 64 percent of the TAC. The yellowfin sole harvest in 2002 has been constrained by two seasonal closures due to the attainment of halibut PSC limits: from May 11-May 21 and from June 15-June 30. In addition, zone 1 was closed on May 21 for the remainder of 2002 to prevent exceeding the 2002 bycatch allowance of red king crab specified for the yellowfin sole target fishery.

The catch information presented above also includes yellowfin sole which were discarded. The rate of discard has ranged from a low of 14 percent of the total catch in 2001 to 30 percent in 1992. The trend has been toward fuller retention of the catch in recent years. Discarding primarily occurs in the yellowfin sole directed fishery, with lesser amounts in the Pacific cod, rock sole, flathead sole, and "other flatfish" fisheries. Table 3-2 provides catch of yellowfin sole in the BSAI by gear from 1995 to 2003. Table 3-3 provides annual catch of rock sole by trawl sector from 1995 to 2003.

**Table 3-2 Catch of Yellowfin Sole in the BSAI by Gear Type, in mt, 1993-2003**

Year	Trawl	Hook and Line	Pot	Total
1995	124,611	60	81	124,752
1996	129,254	148	256	129,658
1997	181,081	237	71	181,389
1998	100,783	260	111	101,154
1999	67,099	150	71	67,320
2000	83,491	288	70	83,849
2001	62,731	618	46	63,395
2002	72,391	570	38	72,999
2003	74,119	573	90	74,782
2004	67,565	596	77	68,238

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.

**Table 3-3 Yellowfin sole catch history for the trawl sectors from 1995 to 2003**

Year	Sector	Number of Vessels	Retained tons (mt)	Percent of total
1995	Non-AFA Trawl CPs	30	46,558	60%
	AFA Trawl CPs	19	14,558	19%
	AFA CVs	42	10,159	13%
	All other sectors	55	6,841	9%
	<b>Total</b>	<b>146</b>	<b>78,117</b>	<b>100%</b>
1996	Non-AFA Trawl CPs	28	48,520	61%
	AFA Trawl CPs	19	21,687	27%
	AFA CVs	28	5,906	7%
	All other sectors	39	3,450	4%
	Non AFA Trawl CVs	3	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>117</b>	<b>79,563</b>	<b>100%</b>
1997	Non-AFA Trawl CPs	27	90,135	71%
	AFA Trawl CPs	14	17,163	14%
	AFA CVs	27	14,196	11%
	All other sectors	33	5,865	5%
	Non AFA Trawl CVs	3	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>104</b>	<b>127,359</b>	<b>100%</b>

Year	Sector	Number of Vessels	Retained tons (mt)	Percent of total
1998	Non-AFA Trawl CPs	23	53,705	83%
	AFA Trawl CPs	19	10,379	16%
	AFA CVs	27	282	0%
	All other sectors	49	88	0%
	<b>Total</b>	<b>118</b>	<b>64,453</b>	<b>100%</b>
1999	Non-AFA Trawl CPs	23	35,711	84%
	AFA Trawl CPs	16	5,628	13%
	AFA CVs	18	1,209	3%
	All other sectors	25	5	0%
	<b>Total</b>	<b>82</b>	<b>42,552</b>	<b>100%</b>
2000	Non-AFA Trawl CPs	21	42,993	82%
	All other sectors	25	5,583	11%
	AFA Trawl CPs	14	2,334	5%
	AFA CVs	67	1,524	3%
	<b>Total</b>	<b>127</b>	<b>52,435</b>	<b>100%</b>
2001	Non-AFA Trawl CPs	22	43,580	97%
	AFA Trawl CPs	14	1,217	3%
	All other sectors	23	18	0%
	AFA CVs	41	0	0%
	<b>Total</b>	<b>100</b>	<b>44,814</b>	<b>100%</b>
2002	Non-AFA Trawl CPs	22	51,516	97%
	AFA Trawl CPs	15	1,341	3%
	All other sectors	30	10	0%
	AFA CVs	33	0	0%
	<b>Total</b>	<b>100</b>	<b>52,867</b>	<b>100%</b>
2003	Non-AFA Trawl CPs	22	54,306	95%
	AFA Trawl CPs	13	2,988	5%
	All other sectors	40	8	0%
	AFA CVs	59	0	0%
	<b>Total</b>	<b>134</b>	<b>57,303</b>	<b>100%</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.2.2 Rock Sole Fishery

The northern rock sole is distributed primarily on the eastern Bering Sea continental shelf and in much lesser amounts in the Aleutian Islands region. Rock sole are important as the target of a high value roe fishery occurring in February and March, which accounts for the majority of the annual catch. Rock sole catches from 1989 -2003 have averaged 49,480 mt annually. The 2003 catch of 35,395 mt was only 32 percent of the ABC of 110,000 mt (80 percent of the TAC). The 2004 catch total is 47,600 mt through September 4. Thus, rock sole remain lightly harvested in the Bering Sea and Aleutian Islands. During the 2004 fishing season rock sole harvesting was periodically closed in the Bering Sea and Aleutian Islands due to halibut bycatch restrictions on February 24.

Although female rock sole are highly desirable when in spawning condition, large amounts of rock sole are discarded overboard in the various Bering Sea trawl target fisheries. From 1987 to 2000, rock sole were discarded in greater amounts than they were retained. The past three years indicate increased utilization of the catch. Fisheries with the highest discard rates include the rock sole roe fishery, the yellowfin sole, flathead sole, Pacific cod, and the bottom pollock fisheries.

Table 3-4 provides catch of rock sole in the BSAI by gear from 1995 to 2003. Table 3-5 provides rock sole catch by year for the trawl sectors from 1995 to 2003.

**Table 3-4 Catch of Rock Sole in the BSAI by Gear Type, in mt, 1993-2003**

Year	Trawl	Hook and Line	Pot	Total
1995	54,982	46	-	55,028
1996	46,859	60	8	46,927
1997	67,526	36	2	67,564
1998	33,590	51	1	33,642
1999	40,449	60	2	40,511
2000	49,232	31	1	49,264
2001	29,222	31	2	29,255
2002	41,299	30	2	41,331
2003	36,113	36	7	36,156
2004	45,463	30	1	45,494

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.

**Table 3-5 Rock sole catch history for the trawl sectors from 1995 to 2003**

Year	Sector	Number of Vessels	Retained tons (mt)	Percent of total
1995	Non-AFA Trawl CPs	32	12,564	87%
	AFA Trawl CPs	20	717	5%
	All other sectors	69	607	4%
	AFA CVs	47	487	3%
	Non AFA Trawl CVs	3	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>171</b>	<b>14,375</b>	<b>100%</b>
1996	Non-AFA Trawl CPs	29	12,438	95%
	AFA Trawl CPs	19	406	3%
	All other sectors	62	110	1%
	AFA CVs	30	82	1%
	<b>Total</b>	<b>140</b>	<b>13,035</b>	<b>100%</b>
1997	Non-AFA Trawl CPs	28	19,421	89%
	AFA CVs	49	1,092	5%
	All other sectors	28	763	4%
	AFA Trawl CPs	19	482	2%
	Non AFA Trawl CVs	4	0	0%
	<b>Total</b>	<b>128</b>	<b>21,758</b>	<b>100%</b>
1998	Non-AFA Trawl CPs	23	9,336	95%
	AFA Trawl CPs	18	476	5%
	AFA CVs	46	8	0%
	All other sectors	20	0	0%
	<b>Total</b>	<b>107</b>	<b>9,820</b>	<b>100%</b>
1999	Non-AFA Trawl CPs	23	9,901	96%
	All other sectors	18	329	3%
	AFA Trawl CPs	15	39	0%
	AFA CVs	35	32	0%
	<b>Total</b>	<b>91</b>	<b>10,300</b>	<b>100%</b>
2000	Non-AFA Trawl CPs	22	10,509	88%
	All other sectors	23	1,260	11%
	AFA Trawl CPs	14	118	1%
	AFA CVs	80	90	1%
	Non AFA Trawl CVs	4	11	0%
	<b>Total</b>	<b>143</b>	<b>11,988</b>	<b>100%</b>
2001	Non-AFA Trawl CPs	22	13,128	99%
	AFA Trawl CPs	16	115	1%
	All other sectors	25	29	0%
	AFA CVs	70	2	0%
	<b>Total</b>	<b>133</b>	<b>13,274</b>	<b>100%</b>

Year	Sector	Number of Vessels	Retained tons (mt)	Percent of total
2002	Non-AFA Trawl CPs	22	16,501	100%
	AFA Trawl CPs	16	26	0%
	AFA CVs	60	7	0%
	Non AFA Trawl CVs	4	4	0%
	<b>Total</b>	<b>102</b>	<b>16,537</b>	<b>100%</b>
2003	Non-AFA Trawl CPs	22	13,382	100%
	Non AFA Trawl CVs	8	23	0%
	AFA CVs	86	10	0%
	All other sectors	28	3	0%
	AFA Trawl CPs	13	3	0%
	<b>Total</b>	<b>157</b>	<b>13,421</b>	<b>100%</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.2.3 Flathead Sole Fishery

*Hippoglossoides* sp. (which include flathead sole and Bering flounder) are managed as a unit stock in the Bering Sea and Aleutian Islands and were formerly a constituent of the “other flatfish.” In June 1994, the Council requested the Plan Team to assign a separate ABC for flathead sole in the BSAI, rather than combining flathead sole with other flatfish as in past assessments. This request was based on a change in the directed fishing standards to allow increased retention of flatfish.

Annual catches averaged 17,700 mt from 1990-2002. The resource remains lightly harvested as the 2003 catch through 20 September is only 70 percent of the 2003 TAC of 17,000 t. Although flathead sole receive a separate ABC and TAC they are still managed in the same PSC classification as rock sole and “other flatfish” and receive the same apportionments and seasonal allowances of prohibited species. In recent years, the flathead sole fishery has been closed prior to attainment of the TAC due to the bycatch of halibut. Substantial amounts of flathead sole are discarded overboard in various eastern Bering Sea target fisheries. A substantial portion of the discards in 2002 occurred in the Pacific cod, pollock, and rock sole fisheries.

Table 3-6 depicts the annual catch of flatfish sole in the BSAI from 1995 to 2003 by gear. Table 3-7 depicts the annual catch of flathead sole in the BSAI from 1995 to 2003 by trawl sector.

**Table 3-6 Catch of Flathead Sole in the BSAI by Gear Type, in mt, 1995-2003**

Year	Trawl	Hook and Line	Pot	Total
1995	14,456	255	2	14,713
1996	17,065	272	7	17,344
1997	20,357	347	-	20,704
1998	23,970	415	-	24,385
1999	17,588	254	-	17,842
2000	19,687	295	1	19,983
2001	17,333	253	-	17,586
2002	14,764	344	-	15,108
2003	13,453	373	-	13,826
2004	14,465	498	1	14,964

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.

**Table 3-7 Flathead sole catch history for the trawl sectors from 1995 to 2003**

Year	Sector	Number of vessels	Retained tons (mt)	Percent of total
1995	Non-AFA Trawl CPs	32	6,161	92%
	AFA Trawl CPs	20	241	4%
	AFA CVs	48	218	3%
	All other sectors	70	81	1%
	Non AFA Trawl CVs	3	a	a
	<b>Total</b>		<b>173</b>	<b>6,700</b>
1996	Non-AFA Trawl CPs	29	8,641	96%
	AFA CVs	40	251	3%
	AFA Trawl CPs	19	57	1%
	All other sectors	37	10	0%
	Non AFA Trawl CVs	6	1	0%
	<b>Total</b>		<b>131</b>	<b>8,959</b>
1997	Non-AFA Trawl CPs	28	10,103	94%
	AFA CVs	50	337	3%
	All other sectors	32	223	2%
	AFA Trawl CPs	19	70	1%
	Non AFA Trawl CVs	2	a	a
	<b>Total</b>		<b>131</b>	<b>10,733</b>
1998	Non-AFA Trawl CPs	23	15,505	98%
	AFA Trawl CPs	19	247	2%
	All other sectors	59	59	0%
	AFA CVs	59	39	0%
	Non AFA Trawl CVs	6	0	0%
	<b>Total</b>		<b>166</b>	<b>15,850</b>
1999	Non-AFA Trawl CPs	23	11,631	99%
	All other sectors	30	131	1%
	AFA Trawl CPs	15	22	0%
	AFA CVs	64	9	0%
	<b>Total</b>		<b>132</b>	<b>11,794</b>
2000	Non-AFA Trawl CPs	20	12,037	94%
	All other sectors	28	737	6%
	Non AFA Trawl CVs	7	1	0%
	<b>Total</b>		<b>55</b>	<b>12,775</b>
2001	Non-AFA Trawl CPs	22	12,135	100%
	All other sectors	36	30	0%
	AFA Trawl CPs	15	0	0%
	AFA CVs	79	0	0%
	<b>Total</b>		<b>152</b>	<b>12,165</b>
2002	Non-AFA Trawl CPs	22	9,918	100%
	All other sectors	31	15	0%
	AFA Trawl CPs	15	10	0%
	AFA CVs	68	1	0%
	Non AFA Trawl CVs	7	0	0%
	<b>Total</b>		<b>143</b>	<b>9,944</b>

Year	Sector	Number of vessels	Retained tons (mt)	Percent of total
2003	Non-AFA Trawl CPs	22	9,124	100%
	All other sectors	35	30	0%
	AFA CVs	91	9	0%
	Non AFA Trawl CVs	8	1	0%
	<b>Total</b>	<b>156</b>	<b>9,165</b>	<b>100%</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.2.4 Atka Mackerel Fishery

Atka mackerel became a reported species group in the BSAI Groundfish FMP in 1978. The patterns of the Atka mackerel fishery generally reflect the behavior of the species: (1) the fishery is highly localized and usually occurs in the same few locations each; (2) the schooling semi-pelagic nature of the species makes it particularly susceptible to trawl gear fished on the bottom; and (3) trawling occurs almost exclusively at depths less than 200 m. In the early 1970s, most Atka mackerel catches were made in the western Aleutian Islands (west of 180° W. longitude). In the late 1970s and through the 1980s, fishing effort moved eastward. A majority of these landings occurred near Seguam and Amlia Islands. In 1984 and 1985 the majority of landings came from a single 1/2° latitude by 1° longitude block bounded by 52° 30' N. and 53° N. latitude, and 173° W. longitude in Seguam Pass (73 percent in 1984, 52 percent in 1985).

Prior to 1992, ABCs for Atka mackerel were allocated to the entire Aleutian management district with no additional spatial management. However, because of increases in the ABC beginning in 1992, the Council recognized the need to disperse fishing effort throughout the range of the stock to minimize the likelihood of localized depletions. In 1993, an initial Atka mackerel TAC of 32,000 mt was caught by March 11, almost entirely south of Seguam Island (Seguam Bank). This initial TAC release represented the amount of Atka mackerel which the Council thought could be appropriately harvested in the eastern portion of the Aleutian Islands subarea (based on the assessment for 1993; Lowe 1992) since there was no mechanism in place at the time to spatially allocate TACs in the Aleutians to minimize the likelihood of localized depletions. In mid-1993, however, Amendment 28 to the BSAI Groundfish FMP became effective, dividing the Aleutian Island subarea into three districts at 177° W. and 177° E. longitudes for the purposes of spatially apportioning TACs. On August 11, 1993, an additional 32,000 mt of Atka mackerel TAC was released to the Central (27,000 mt) and Western (5,000 mt) districts. Since 1994, the BSAI Atka mackerel TAC has been allocated to the three regions based on the average distribution of biomass estimated from the Aleutian Islands bottom trawl surveys. Amendment 34 allocates up to 2 percent of the Atka mackerel TAC specified for the eastern BSAI to vessels using jig gear.

In June 1998, the Council passed a fishery regulatory amendment that proposed a four-year timetable to temporally and spatially disperse and reduce the level of Atka mackerel fishing within Steller sea lion critical habitat in the Aleutian Islands. Temporal dispersion was accomplished by dividing the BSAI Atka mackerel TAC into two equal seasonal allowances, an A-season beginning January 1 and ending April 15, and a B-season from September 1 to November 1. Spatial dispersion was accomplished through a planned 4-year reduction in the maximum percentage of each seasonal allowance that could be caught within critical habitat in the Central and Western Aleutian Islands. This was in addition to bans on trawling within 10 nm of all sea lion rookeries in the Aleutian district and within 20 nm of the rookeries on Seguam and Agligadak Islands (in area 541), which were instituted in 1992. The goal of spatial dispersion was to reduce the proportion of each seasonal allowance caught within critical habitat to no more than 40 percent by the year 2002. No critical habitat allowance was established in the eastern subarea because of the year-round 20 nm trawl exclusion zone around the sea lion rookeries on Seguam and Agligadak Islands that minimized effort within critical habitat. The regulations implementing this four-year phased-in change to Atka mackerel fishery management became effective on 22 January 1999 and lasted only 3 years (through 2001). In 2002, new regulations affecting management of the Atka mackerel, pollock, and

Pacific cod fisheries went into effect. Furthermore, all trawling was prohibited in critical habitat from 8 August 2000 through 30 November 2000 by the Western District of the Federal Court because of violations of the Endangered Species Act (ESA).

As part of the plan to respond to the Court and comply with the ESA, NOAA Fisheries and the Council formulated new regulations for the management of Steller sea lion and groundfish fishery interactions that went into effect in 2002. The objectives of temporal and spatial fishery dispersion, cornerstones of the 1999 regulations, were retained. Season dates and allocations remained the same (A season: 50 percent of annual TAC from 20 January to 15 April; B season: 50 percent from 1 September to 1 November). However, the maximum seasonal catch percentage from critical habitat was raised from the goal of 40 percent in the 1999 regulations to 60 percent. To compensate, effort within critical habitat in the Central (542) and Western (543) Aleutian fisheries was limited by allowing access to each subarea to half the fleet at a time. Vessels fishing for Atka mackerel are randomly assigned to one of two teams, which start fishing in either area 542 or 543. Vessels may not switch areas until the other team has caught the critical habitat allocation assigned to that area. In the 2002 regulations, trawling for Atka mackerel was prohibited within 10 nm of all rookeries in areas 542 and 543; this was extended to 15 nm around Buldir Island and 3 nm around all major sea lion haulouts. Steller sea lion critical habitat east of 178°W in the Aleutian district, including all critical habitat in subarea 541 and a 1° longitude-wide portion of subarea 542, is closed to directed Atka mackerel fishing. Seasonal and spatial fishery dispersion for 2005 and 2006 are shown in Table 3-8.

**Table 3-8 2005 and 2006 seasonal and spatial allowances, gear shares, and CDQ reserve of the BSAI Atka Mackerel TAC (amounts are in metric tons)**

Subarea and component	2005 and 2006 TAC	CDQ Reserve	CDQ reserve HLA limit <sup>3</sup>	ITAC	Seasonal Allowance <sup>1</sup>			
					A season <sup>2</sup>		B season <sup>2</sup>	
					Total	HLA limit <sup>3</sup>	Total	HLA limit <sup>3</sup>
Western AI District (543)	20,000	1,500	900	18,500	9,250	5,550	9,250	5,550
Central AI District (542)	35,500	2,663	1,598	32,838	16,419	9,851	16,419	9,851
EAI (541)/BS subarea <sup>4</sup>	7,500	563	.....	6,938	.....	.....	.....	.....
Jig (1%) <sup>5</sup>	.....	.....	.....	69	.....	.....	.....	.....
Other gear (99%)	.....	.....	.....	6,868	3,434	.....	3,434	.....
<b>Total</b>	<b>63,000</b>	<b>4,725</b>	.....	<b>58,275</b>	<b>29,103</b>	.....	<b>29,103</b>	.....

<sup>1</sup>The seasonal allowances of Atka mackerel are 50% in the A season and 50% in the B season.

<sup>2</sup>The A season is January 1 (January 20 for trawl gear) to April 15 and the B season is September 1 to November 1.

<sup>3</sup>Harvest Limit Area (HLA) refers to the amount of each seasonal allowance that is available for fishing inside the HLA.

In 2005 and 2006, 60% of each seasonal allowance is available for fishing inside the HLA in the Western and Central Aleutian Districts.

<sup>4</sup>Eastern Aleutian District and the Bering Sea subarea.

<sup>5</sup>Regulations require that up to 2 percent of the Eastern Aleutian District and the Bering Sea subarea ITAC be allocated to jig gear.

The amount of this allocation is 1 percent. The jig gear allocation is not apportioned by season.

Table 3-9 provides annual catch of Atka mackerel in the BSAI from 1995 to 2003 by gear. Table 3-10 provides annual catch of Atka mackerel in the BSAI from 1995 to 2003 by trawl sector. Figure 3-1 presents annual trawling harvest of Atka mackerel by Aleutian Islands subarea.

**Table 3-9 Catch of Atka mackerel in the BSAI by Gear Type, in mt, 1993-2003**

Year	Trawl	Hook and Line	Pot	Total
1995	81,413	61	81	81,555
1996	103,853	36	54	103,943
1997	65,755	40	50	65,845
1998	55,768	90	15	55,873
1999	53,561	71	11	53,643
2000	42,293	138	9	42,440
2001	56,249	270	17	56,536
2002	41,945	43	53	42,041
2003	54,052	21	206	54,279
2004	54,814	36	105	54,955

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.**Table 3-10 BSAI Atka mackerel catch history for the trawl sectors from 1995 to 2003**

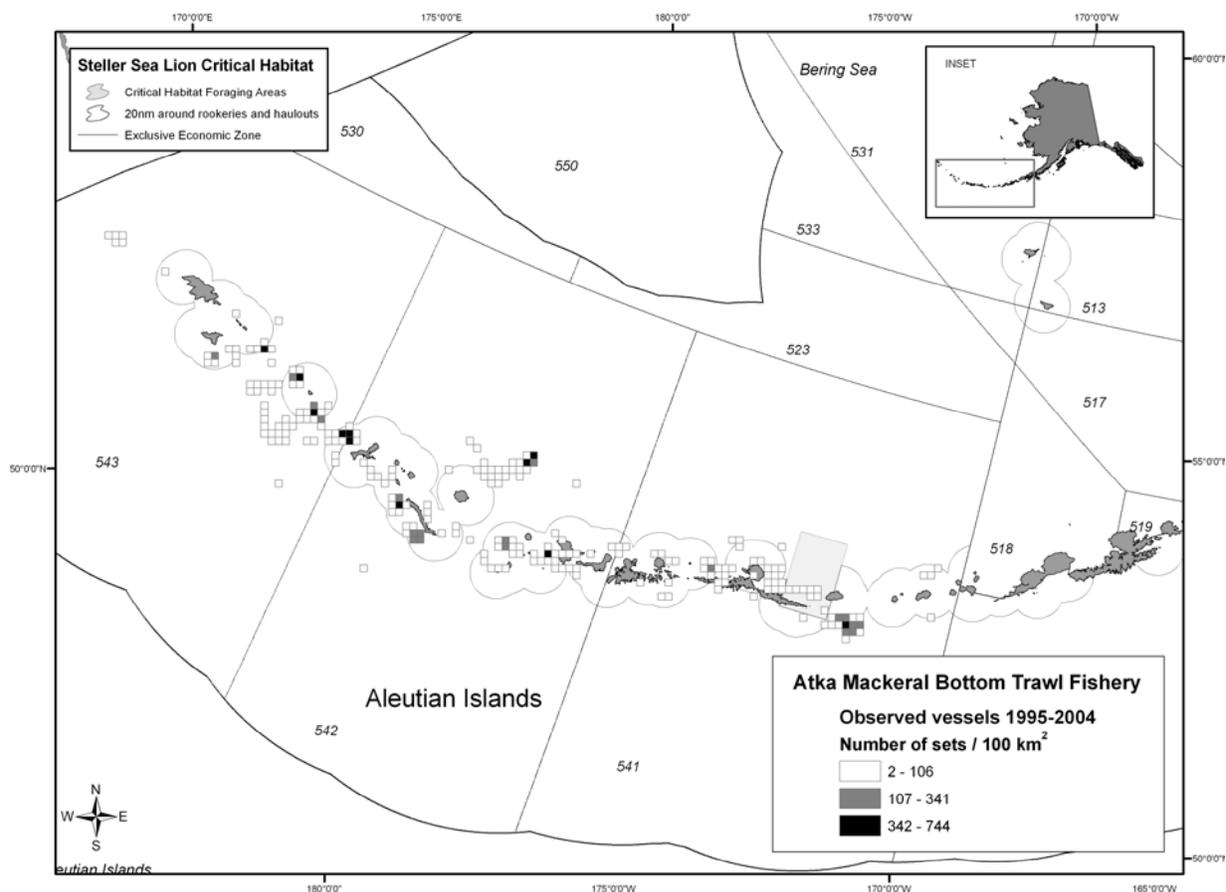
Year	Sectors	Number of vessels	Retained tons	Percent of total
1995	Non-AFA Trawl CP	15	52,200	85%
	All other sectors	4	7,440	12%
	AFA Trawl CP	8	1,824	3%
	AFA CV	11	16	0%
	<b>Total</b>	<b>38</b>	<b>61,480</b>	<b>100%</b>
1996	Non-AFA Trawl CP	18	77,627	92%
	All other sectors	20	5,503	7%
	AFA Trawl CP	4	1,392	2%
	AFA CV	18	13	0%
	<b>Total</b>	<b>60</b>	<b>84,535</b>	<b>100%</b>
1997	Non-AFA Trawl CP	11	42,344	79%
	All other sectors	19	7,527	14%
	AFA Trawl CP	4	3,869	7%
	AFA CV	3	<sup>a</sup>	
	<b>Total</b>	<b>37</b>	<b>53,741</b>	<b>100%</b>
1998	Non-AFA Trawl CP	21	39,911	84%
	All other sectors	18	7,380	16%
	AFA CV	26	0	0%
	<b>Total</b>	<b>65</b>	<b>47,292</b>	<b>100%</b>
1999	Non-AFA Trawl CP	19	44,212	99%
	AFA Trawl CP	10	438	1%
	All other sectors	9	1	0%
	AFA CV	12	0	0%
	<b>Total</b>	<b>50</b>	<b>44,652</b>	<b>100%</b>
2000	Non-AFA Trawl CPS	16	36,424	100%
	All other sectors	8	3	0%
	Non AFA Trawl CV	1	<sup>a</sup>	
	<b>Total</b>	<b>25</b>	<b>36,426</b>	<b>100%</b>
2001	Non-AFA Trawl CP	18	45,527	100%
	All other sectors	20	73	0%
	AFA CV	27	16	0%
	<b>Total</b>	<b>65</b>	<b>45,616</b>	<b>100%</b>
2002	Non-AFA Trawl CP	17	31,125	100%
	AFA CV	47	78	0%
	All other sectors	9	2	0%
	Non AFA Trawl CV	2	<sup>a</sup>	
	<b>Total</b>	<b>75</b>	<b>31,205</b>	<b>100%</b>

Year	Sectors	Number of vessels	Retained tons	Percent of total
2003	Non-AFA Trawl CP	17	37,757	100%
	AFA CV	72	86	0%
	AFA Trawl CP	13	3	0%
	All other sectors	22	0	0%
	Non AFA Trawl CV	6	0	0%
	<b>Total</b>	<b>130</b>	<b>37,848</b>	<b>100%</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

**Figure 3-1 Annual harvest of Atka mackerel inside and outside Steller Sea lion critical habitat by Aleutian Islands subarea (541, 542, and 543) from 1995 to 2004.**



### 3.1.2.5 Pacific Ocean Perch Fishery

Pacific ocean perch (POP), and four other associated species of rockfish (northern rockfish; roughey rockfish; shorttraker rockfish; and sharpchin rockfish) were managed as a complex in the two distinct areas from 1979 to 1990. Known as the POP complex, these five species were managed as a single entity with a single TAC (total allowable catch). In 1991, the Council separated POP from the other red rockfish in order to provide protection from possible overfishing. Of the five species in the former POP complex, Pacific Ocean perch has historically been the most abundant rockfish in this region and has contributed

most to the commercial rockfish catch. Since 2001, Pacific Ocean perch in the Bering BSAI area have been assessed and managed as a single stock.

Pacific Ocean perch were highly sought by Japanese and Soviet fisheries and supported a major trawl fishery throughout the 1960s. Apparently, these stocks were not productive enough to support such large removals. Catches continued to decline throughout the 1960s and 1970s, reaching their lowest levels in the mid 1980s. With the gradual phase-out of the foreign fishery in the U.S. Exclusive Economic Zone, a small joint-venture fishery developed but was soon replaced by a domestic fishery by 1990. In 1990, the domestic fishery recorded the highest Pacific ocean perch removals since 1977.

Estimates of retained and discarded Pacific Ocean perch from the fishery have been available since 1990. The eastern Bering Sea region generally shows a higher discard rate than in the Aleutian Islands region. For the period from 1990 to 2003, the Pacific Ocean perch discard rate in the eastern Bering Sea averaged about 33 percent, and the 2003 discard rate was 52 percent. In contrast, the discard rate from 1990 to 2002 in the Aleutian Islands averaged about 15 percent, and the 2003 discard rate was 16 percent.

There has been little change in the distribution of observed Aleutian Islands POP catch from the foreign and joint venture fisheries (years 1977-1988) and the domestic fishery (years 1990-present) with respect to fishing depth and management area. Management area 541 contributes the largest share of the observed catch in each fishery, with 46 percent and 41 percent in the foreign/joint venture and domestic fisheries, respectively. In contrast, area 543 contributes the largest share of the catch in the 2002 fishery due to the spatial allocation of harvest quotas. Although the catch by management area between the two time periods was similar, variations appeared to occur within each of these periods. For example, area 543 contributed a large share of the catch in the late 1970s foreign fishery, as well as the domestic fishery from the mid-1990s to the present. In the late 1980s to the early 1990s, area 541 contributed a large share of the catch, and prompted management changes to spatially allocate POP harvest. Note that the extent to which the patterns of observed catch can be used as a proxy for patterns in total catch is dependent upon the degree to which the observer sampling represents the true fishery. In particular, the proportions of total POP caught that were actually sampled by observers were very low in the foreign fishery, due to low sampling ratio prior to 1984.

Table 3-11 provides annual catch of Atka mackerel in the BSAI from 1995 to 2003 by gear. Table 3-12 provides annual catch of Atka mackerel in the BSAI from 1995 to 2003 by trawl sector.

**Table 3-11 Catch of Pacific Ocean Perch in the BSAI by Gear Type, in mt, 1993-2003**

Year	Trawl	Hook and Line	Pot	Total
1993	17,065	11	-	17,076
1994	12,548	4	-	12,552
1995	11,492	17	1	11,510
1996	15,679	2	1	15,682
1997	13,465	-	-	13,465
1998	10,003	-	-	10,003
1999	12,260	-	-	12,260
2000	9,018	10	-	9,028
2001	8,807	5	-	8,812
2002	10,526	3	-	10,529
2003	13,914	2	1	13,917
2004	10,826	2	-	10,828

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.

**Table 3-12 Annual catch of AI POP for trawl sectors from 1995 to 2003**

Year	Sectors	Number of Vessels	Retained tons	Percent of total
1995	Non-AFA Trawl CPs	14	8,053	98%
	AFA Trawl CPs	17	198	2%
	AFA CVs	10	8	0%
	All other sectors	3	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>44</b>	<b>8,259</b>	<b>100%</b>
1996	Non-AFA Trawl CPs	14	8,950	99%
	AFA Trawl CPs	14	122	1%
	AFA CVs	14	6	0%
	All other sectors	4	1	0%
	<b>Total</b>	<b>46</b>	<b>9,079</b>	<b>100%</b>
1997	Non-AFA Trawl CPs	10	10,325	100%
	AFA CVs	16	30	0%
	All other sectors	6	13	0%
	AFA Trawl CPs	14	0	0%
	<b>Total</b>	<b>46</b>	<b>10,368</b>	<b>100%</b>
1998	Non-AFA Trawl CPs	12	7,702	100%
	AFA Trawl CPs	7	1	0%
	AFA CVs	13	1	0%
	All other sectors	2	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>34</b>	<b>7,703</b>	<b>100%</b>
1999	Non-AFA Trawl CPs	12	9,580	100%
	All other sectors	2	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>14</b>	<b>9,580</b>	<b>100%</b>
2000	Non-AFA Trawl CPs	10	6,996	100%
	All other sectors	1	<sup>a</sup>	<sup>a</sup>
	Non AFA Trawl CVs	1	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>12</b>	<b>6,996</b>	<b>100%</b>
2001	Non-AFA Trawl CPs	11	6,320	100%
	All other sectors	5	0	0%
	<b>Total</b>	<b>16</b>	<b>6,320</b>	<b>100%</b>
2002	Non-AFA Trawl CPs	11	8,249	100%
	<b>Total</b>	<b>11</b>	<b>8,249</b>	<b>100%</b>
2003	Non-AFA Trawl CPs	10	9,823	96%
	AFA Trawl CPs	2	<sup>a</sup>	<sup>a</sup>
	<b>Total</b>	<b>12</b>	<b>9,823</b>	<b>96%</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.2.6 Other BSAI Groundfish Fisheries

The only other groundfish target fishery that is affected by the proposed allocation is the Pacific cod fishery, therefore it is the only fishery discussed here.

Presently, the Pacific cod stock is exploited by a multiple-gear fishery, including trawl, longline, pot, and jig components. From 1980 through 2004, TAC averaged about 77 percent of ABC, and aggregate commercial catch averaged about 88 percent of TAC. In 8 of these 24 years (32 percent), TAC equaled ABC exactly, and in 5 of these 25 years (20 percent), catch exceeded TAC. Changes in ABC over time are typically attributable to three factors: 1) changes in resource abundance, 2) changes in management strategy, and 3) changes in the stock assessment model. For example, from 1980 through 2004, five different assessment models were used, though the present model has remained unchanged since 1997 (except for the addition of a new fishery selectivity era beginning in 2000). Historically, the great majority of the BSAI catch has come from the eastern Bering Sea area. During the most recent five-year period (1999-2003), the eastern Bering Sea accounted for an average of about 84 percent of the BSAI catch.

**Table 3-13 Catch of Pacific Cod in the BSAI by Gear Type, in mt, 1993-2003**

Year	Trawl	Hook and Line	Pot	Total
1993	99,051	65,688	2,098	166,837
1994	99,313	86,303	8,184	193,800
1995	121,530	103,199	20,299	245,028
1996	113,089	94,968	32,617	240,674
1997	111,212	124,406	22,047	257,665
1998	81,308	98,286	13,657	193,251
1999	67,190	79,021	16,150	162,361
2000	73,476	85,177	18,783	177,436
2001	50,752	96,945	16,507	164,204
2002	78,178	89,968	15,054	183,200
2003	78,576	94,325	21,960	194,861
2004	81,946	96,465	17,108	195,519

Source: NMFS website <http://www.fakr.noaa.gov/sustainablefisheries/catchstats.htm>.

Current regulations specify that catches of Pacific cod will be allocated according to gear type as follows: the trawl fishery will be allocated 47 percent, the fixed gear (longline and pot) fishery will be allocated 51 percent, and the jig fishery will be allocated 2 percent; of the fixed gear allocation, the longline fishery will be allocated 80.3 percent (not counting catcher vessels less than 60 ft LOA), the pot fishery will be allocated 18.3 percent (not counting catcher vessels less than 60 ft LOA), and fixed-gear catcher vessels less than 60 ft LOA will be allocated 1.4 percent. Typically, as the harvest year progresses, it becomes apparent that one or more gear types will be unable to harvest their full allotment(s) by the end of the year. This is addressed by reallocating TAC between gear types in September of each year. Most often, such reallocations shift TAC from the trawl, jig, and sometimes pot components of the fishery to the longline catcher/processors. The longline catcher/processors typically receive 15,000-20,000 mt per year through such transfers.

### 3.1.3 Description of the Trawl Sectors

#### 3.1.3.1 Description of the Non-AFA Trawl Catcher Processor Sector

The Non-AFA Trawl CP sector is the most diverse of the processing sectors in the BSAI and the only sector that consistently targets a significant amount of flatfish. However, the flatfish market is characterized as having significant constraints. The rock sole market, for example, prefers females with roe over smaller males. Similarly, large yellowfin sole and flathead sole are preferred over small fish of the same species. There are few incentives to keep small fish because they fill limited hold space with product that is largely unmarketable. In the “race for fish” regime under which the Non-AFA Trawl CP sector operate, if a vessel tries to minimize discards by reducing throughput and keeping and processing less valuable fish, its share of total catch may be reduced if others in the fleet do not follow suit. In addition, unlike larger catcher processors and shore-plants, the Non-AFA Trawl CP vessels are generally constrained from process fish-meal. Because of size constraints the Non-AFA Trawl CP sector have fewer options for processing lower value products and, therefore, are typically more likely to discard less valuable fish.

The Non-AFA Trawl CP fleet consists of a relatively wide variety of vessels that range from 103 ft to 295 ft in length. As would be expected, the smaller vessels are relatively less productive than the larger vessels. From 1995-2001, the smaller vessels generated approximately 12 percent of both catch and product value (Table 3-14). However, the smaller vessels accounted for roughly 18 percent of the total discards in the sector. Vessels less than 125 ft discarded 48 percent of their catch over the seven year period, while vessels 125 ft or greater discarded 38 percent. Industry sources indicate that the smaller

vessels are unable to retain as many fish as larger vessels because of limitations in hold size and processing space.

**Table 3-14 Fishing Activity in the Non-AFA Trawl CP Sector in 1995-2003, by Size Class**

Length Class	1995	1996	1997	1998	1999	2000	2001	2002	2003
<b>Number of Vessels</b>									
< 125'	8	7	10	7	8	7	6	7	7
> 125'	24	21	18	16	16	16	16	14	14
<b>Product Value (\$ Millions)</b>									
< 125'	6.2	12.2	13.5	11.9	14.7	20.1	8.6	26.2	27.2
> 125'	142.9	158.6	131.9	92.7	100.7	106.6	124.8	111.6	109.9
<b>Product Value as a Percent of Non-AFA Trawl CP Value</b>									
< 125'	4.4	7.1	9.3	11.4	12.7	15.9	6.5	19	19.8
> 125'	95.7	92.9	90.7	88.6	87.3	84.1	93.6	81	80.2
<b>Total Groundfish Catch (1,000 mt)</b>									
< 125'	19.2	34.5	50.6	37.4	34.3	42.7	20.9	44.1	40.8
> 125'	284	293	303	234	234	251	241	243	232
<b>Percent of Non-AFA Trawl CP Total Groundfish Catch</b>									
< 125'	6.3	10.5	14.3	13.8	12.8	14.5	8	15.4	14.9
> 125'	93.7	89.5	85.7	86.2	87.2	85.5	92	84.6	85.1
<b>Discards as a Percent of Total Groundfish Catch of Length Class</b>									
< 125'	60.7	55.1	52	46.9	41.2	41	39.9	40.1	42.1
> 125'	39.4	36.3	34.1	27.1	32.1	29.3	27.9	28.7	28.3
<b>Discards as a Percent of Non-AFA Trawl CP Total Discards</b>									
< 125'	12.1	13.5	18.4	20.4	17.8	17.2	13.8	20.2	20.7
> 125'	87.9	86.5	81.6	79.6	82.2	82.8	86.2	79.8	79.3

Source: NPFMC Sector Profiles Database for data from 1995 to 2001 and COAR data for 2002 and 2003.

The following information on employment for the Non-AFA Trawl CP sector is from the *Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement* that was published on June 2004. The average crew size for a Non-AFA Trawl CP vessel is about 34 persons, which is about one-third of the average employment on a surimi catcher processor and less than half of the average crew of a fillet catcher processor. A typical crew might include a captain, a mate, two engineers (one each for the vessel and processing equipment), a cook/housekeeper, two to three crew members dedicated to the deck, a processing foreman and assistant, and about 25 processing workers. On some vessels two or three crew members may split their time between processing and deck work. Any variation in crew size usually is the result of a change in the number of processing workers employed. An annual average of 1,022 FTE positions were generated by this vessel class during the 1992-2001 period, and estimated yearly payments to labor average \$55 million.

### 3.1.3.1.1 History of the Non-AFA Trawl CP Sector

The first US-flagged trawl catcher processors were head and gut factory trawlers, and entered the fishery in 1980. [Paul MacGregor 2003, Mary Furuness 2003] These boats focused their effort primarily on Pacific cod, rockfish, sablefish and flatfish. Pollock, while ubiquitous, were not generally targeted because of their relatively low value.

A key development in the history of the factory trawler was the introduction in 1983 and rapid acceptance of high-speed at-sea filleting machinery, such as the Baader 182 and other similar machinery by Toyo [Wulff 2003]. These machines made at-sea processing of pollock into fillets and subsequent processing into surimi financially feasible [Wulff 2003]. Vessels that were large-enough and met Coast Guard stability and load line requirements to install this machinery, were able to tap into the huge pollock resource in the Bering Sea. Other trawl CPs, typically smaller vessels without loadline certifications, were limited to head and gut processing.

The 1987 Anti-reflagging Act also contributed to the growth of the US flagged trawl CP fleet. The act prohibited vessels that were not originally constructed in the US from being re-flagged as a US vessel. There was, however, a three-year window in which vessels that were already under conversion/construction were allowed to enter [IAI 1994].

The coincidental timing of the introduction of the Baader and the conversions provisions in the Anti-Reflagging Act led to a dramatic increase in the number of U.S. flagged trawl CPs operating in the Alaskan EEZ. In 1986, NMFS reported 12 active U.S. trawl CPs operating in the Alaskan EEZ. However, the number of U.S. trawl CPs doubled in 1987 [IAI, 1994], and by 1990, there were a total of 72 U.S. flagged trawl CPs operating in the Alaskan EEZ [NPFMC 1995]. Although the exact number of Non-AFA Trawl CP vessels was not explicitly tracked at the time, estimates developed in 1995 for the Groundfish and Crab License Limitation program [NPFMC, 1995] indicated that there were a total of 23 Non-AFA Trawl CP vessels in 1988—12 of which fished only with trawl gear and 11 of which reported fishing with both trawl and non-trawl gears. The same source indicated that in 1990, a total of 33 vessels were Non-AFA Trawl CP vessels, 17 of which had reported only using trawl gear.

During the early and mid 1990's, the Council process was primarily focused on allocation and rationalization issues. While these issues indirectly affected the Non-AFA Trawl CP sector, other sectors were affected in much more significant ways. However, an add-on to the License Limitation Program in 1995 closed the Eastern Gulf of Alaska (EG) to trawling. While trawling catches in the EG were not large compared to non-trawl catches in the EG or to trawl catches in other areas, the Non-AFA Trawl CP fleet were the primary participants—trawling for high value rockfish species. The closure further limited the opportunities for the Non-AFA Trawl CP sector.

In the early 1990's, there was a marked increase in public awareness and dislike with the problems of incidental catch, prohibited species catch, and discards of both target species and of incidental catch species. In response to the growing perception of unnecessary waste in the fisheries, the Council in 1994, initiated analysis to improve utilization and retention, and to provide better incentives to reduce incidental catches of non-target species. The growing awareness and controversy led to a formulation of a national policy to reduce bycatch, which was included in the reauthorization of the Magnuson Stevens Act in 1996.

The waste reduction initiatives resulted in the Council's 1996 approval of IR/IU for the BSAI (Amendment 49). A similar program was approved for the GOA in 1997 (Amendment 49). The IR/IU measures for pollock and Pacific cod were implemented in 1998 for both the GOA and BSAI. They were initially directed primarily at the surimi and fillet trawl CPs, which over time installed fish-meal plants and otherwise changed their fishing and processing methods to catch fewer unusable fish and to more fully utilize those fish harvested. For the Non-AFA Trawl CP vessel, which are generally too small to be outfitted with fish-meal plants, the IR/IU regulations were more difficult to meet. However, one outcome of the measure has been the development of a more consistent market for headed and gutted pollock in Asia—these fish are partially thawed and further processed before entering global consumer.

In approving the IR/IU Amendment, the Council also approved IR/IU for flatfish, but recognized that the Non-AFA Trawl CP sector would be unable to meet the IR/IU standard in the near term, and advised NOAA Fisheries to delay implementation of the flatfish portions of the regulations until 2003. The delay was intended to give the Non-AFA Trawl CP fleet time to alter their fishing methods and gear to avoid

unwanted catch and to develop markets for catches of flatfish that are unavoidable and that would otherwise be discarded.

Since 1997, the Non-AFA Trawl CP sector has improved their fishery in terms of retention and utilization. Retention by the Non-AFA Trawl sector has been aided in recent years by unusually large flatfish sizes and a global decline in whitefish supply. In addition, the Non-AFA Trawl CP sector has made significant internal efforts, beginning with the formation of Groundfish Forum—an association of Non-AFA Trawl CP sector owners. During the period following passage of IR/IU, the Non-AFA Trawl CP fleet led by Groundfish Forum has taken steps to reduce their unwanted catch. Since 1997, for example, 100 percent of the vessels in the sector have participated in SeaState, an industry sponsored organization that tracks fishing areas of participants and provides reports of areas of high rates of incidental catches. The sector has also engaged in several experimental fisheries to test new and different gear configurations in order to reduce bycatch. The sector has also tested methods to reduce halibut mortality and broaden markets for fish that had previously gone unprocessed.

This level of cooperation can be considered quite remarkable given that vessels in Non-AFA Trawl CP sector operate in an intensely competitive environment in which the actions of one vessel or one company can have significant negative effects on all of the other vessels and companies in the sector. Because of this highly competitive environment, operators are forced to fish as hard and fast as possible before another company's activities or the activities of the fleet as a whole force a fishery closure.

The primary factor contributing to this environment is the common property nature of the fishery resource itself. At the beginning of the year, NOAA Fisheries set the TACs for each groundfish species as well as limits for prohibited species (PSC limits). When the season begins on January 20, each vessel must race to catch as much fish as possible before the season ends when the TAC or a PSC limit is reached. If an individual vessel or company slows its activity to avoid catches of unwanted fish or areas of high concentrations of PSCs, they will very likely suffer a loss of revenue, particularly if other vessels or companies do not fish conservatively.

While the race-for-fish problem is endemic throughout the North Pacific, for the Non-AFA Trawl CP sector it is only one of many factors that contribute to the aggressive fishing practices of the sector. Other contributing factors are listed below:

- The diversity of products produced by the Non-AFA Trawl CP sector is relatively large and the number of wholesale buyers in the market is quite limited.
- The demand for many of these products is relatively small, and prices are very sensitive to fluctuations in quantity. [NPFMC, 2001]
- Most companies have semi-exclusive agreements with purchasers
- There are relatively few fishing vessels participating in the sector (22 in 2002 and 22 in 2003) and even fewer companies—a total of 12 companies owning or operating the 26 qualified vessels, 16 of which are concentrated in 4 companies.

Other sectors have also been plagued by the common property nature of the fisheries in the North Pacific. This was particularly true of the pollock industry. However, the pollock fishery was rationalized with the approval of the American Fisheries Act in 1998 by the US Congress. The AFA created exclusive pollock allocations to AFA eligible vessels and allowed the formation of cooperatives in both offshore and inshore sectors. Non-AFA vessels that took pollock as incidental catch were prohibited from targeting pollock, and now operate year-round under MRAs for pollock—retained pollock may not exceed 20 percent of other retained groundfish between consecutive offloads.

The AFA has also resulted in an additional burden on the Non-AFA Trawl CP sector. Because of the combination of AFA and IR/IU regulations, the Non-AFA Trawl CP sector are continual struggling to comply with the conflicting pollock regulations. The sector must keep all pollock they catch because of

IR/IU, unless their pollock catch exceeds 20 percent of total retained non-pollock groundfish, at which point they must discard pollock, as long as they do not discard so much as to fall below the 20 percent standard.

By 2002, Non-AFA Trawl CP sector realized that IR/IU flatfish requirements could significantly increase the costs of the sector. In April 2002, public testimony provided by Non-AFA Trawl CP sector to the Council described that some vessels in that sector would be forced to exit flatfish and other fisheries if a requirement to retain flatfish species were imposed. These exit decisions were reported to be due to their inability with existing technology to consistently haul target species with low proportions of non-target catch, and adapt to the limited space available on some vessels to hold and process mixed species hauls.

While retention and utilization of flatfish by all sectors, including the Non-AFA Trawl CP sector improved between 1995 and 2000 the Non-AFA Trawl CP fleet felt that it still did not have the capability (e.g., markets and gears) to remain viable participants once IR/IU was implemented in 2003. The industry proposed that alternatives to full retention of flatfish be examined, and the Council added options to the ongoing analysis of processing limits under the American Fisheries Act.

Based on the experience of the AFA-CPs, the Non-AFA Trawl CP sector has also expressed the general conclusion that their best hope of facilitating the reduction of discards and incidental catch is regulated reductions of discards and some form of dedicated access privileges. The sector has tried to negotiate a voluntary cooperative within the existing fishery regulations, albeit unsuccessfully. For a voluntary cooperative to be successful in providing secure fishing privileges, under existing regulations, it may be necessary for every participant in the sector to participate in the coop. The Non-AFA Trawl CP sector has been unable to gain 100 percent agreement.

### 3.1.3.2 Description of the AFA Trawl Catcher Processor Sector

Description of the Sector. Includes vessels that are listed by name in the AFA as eligible to target BSAI pollock in the directed fishery.

Participation in Groundfish Fisheries. These large factory trawlers have the processing equipment to produce surimi and/or fillets from pollock, Pacific cod, and other groundfish. The large size of these vessels also provides room for equipment to produce fishmeal, minced product, and other product forms. The size of these vessels enables them to operate in the Bering Sea during poor weather. However, they now operate in a pollock cooperative under AFA, which, along with the resulting quasi-property rights, allows them to modify operations in terms of when they fish and what they process to account for changing weather, markets, and management restrictions. The number of catcher/processors in this sector has decreased since 1995 as a result of a combination of excess capacity, reduced quotas for the offshore sector, and the decommissioning of vessels under the AFA

Groundfish Landings by Species. Table 3-15 provides retained tons and number of vessels by species from 1995 to 2003 for the AFA Trawl CP sector. Pollock is the primary species harvested by this sector, but Pacific cod are also targeted by the AFA trawl catcher/processors. Of the species allocated under this action, yellowfin sole is the primary species harvested followed by Atka mackerel. Catch of yellowfin sole and Atka mackerel declined after 1998.

**Table 3-15 Catch history for the AFA Trawl CP sector from 1995 to 2003**

Year	Species	Number of Vessels	Retained tons
1995	Atka mackerel	8	1,824
	Flathead sole	20	241
	Pacific Ocean Perch	17	198
	Rock sole	20	717
	Yellowfin sole	19	14,558
	<b>Total</b>	<b>84</b>	<b>17,538</b>

Year	Species	Number of Vessels	Retained tons
1996	Atka mackerel	4	1,392
	Flathead sole	19	57
	Pacific Ocean Perch	14	122
	Rock sole	19	406
	Yellowfin sole	19	21,687
	<b>Total</b>	<b>75</b>	<b>23,664</b>
1997	Atka mackerel	4	3,869
	Flathead sole	19	70
	Pacific Ocean Perch	14	0
	Rock sole	19	482
	Yellowfin sole	14	17,163
	<b>Total</b>	<b>70</b>	<b>21,584</b>
1998	Flathead sole	19	247
	Pacific Ocean Perch	7	1
	Rock sole	18	476
	Yellowfin sole	19	10,379
	<b>Total</b>	<b>63</b>	<b>11,103</b>
1999	Atka mackerel	10	438
	Flathead sole	15	22
	Rock sole	15	39
	Yellowfin sole	16	5,628
	<b>Total</b>	<b>56</b>	<b>6,127</b>
2000	Rock sole	14	118
	Yellowfin sole	14	2,334
	<b>Total</b>	<b>28</b>	<b>2,452</b>
2001	Flathead sole	15	0
	Rock sole	16	115
	Yellowfin sole	14	1,217
	<b>Total</b>	<b>45</b>	<b>1,332</b>
2002	Flathead sole	15	10
	Rock sole	16	26
	Yellowfin sole	15	1,341
	<b>Total</b>	<b>46</b>	<b>1,376</b>
2003	Atka Mackerel	13	3
	Pacific Ocean Perch	2	<sup>a</sup>
	Rock sole	13	3
	Yellowfin sole	13	2,988
	<b>Total</b>	<b>41</b>	<b>2,994</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.3.3 Description of the AFA Trawl Catcher Vessel Sector

Description of the Sector. Includes all trawl catcher vessels that are issued an AFA permit making them eligible to target BSAI pollock. As of 2004, 112 catcher vessels held an AFA permit to participate in the directed BSAI pollock fisheries.

Participation in Groundfish Fisheries. The majority of these vessels rely almost exclusively on pollock harvested in the Bering Sea. Some of these vessels also participate in the summer Pacific whiting fishery

off the coasts of Oregon and Washington. In addition, some vessels in this category may tender salmon or undergo maintenance in June and July if they are not engaged in the whiting fishery. The bimodal distribution of groundfish activity of most of the vessels in this sector is a function of the two primary regulatory seasons for pollock—the roe season in the winter and spring and the non-roe season in the summer and fall. Because of the sector’s reliance on the pollock resource, the BS FMP subarea is clearly the most important fishing area. While nearly all of the groundfish harvested by the larger vessels is delivered to shoreside processors, many of the smaller vessels deliver their catch to motherships or catcher/processors. The number of vessels in this sector has declined as a result of the removal of less efficient vessels.

**Groundfish Landings by Species.** Table 3-16 shows retained tons and number of vessels by species from 1995 to 2003 for the AFA Trawl CV sector. Pollock is clearly the most important fishery for the sector, accounting for nearly all of the retained groundfish landings. Pacific cod has been the second most important species in terms of volume. Of the species allocated under this proposed action, yellowfin sole is the primary species harvested. Landings of yellowfin sole by the AFA Trawl CV sector declined dramatically after 1997.

**Table 3-16 Catch history for the AFA Trawl CV sector from 1995 to 2003**

Year	Species	Number of Vessels	Retained tons
1995	Atka mackerel	11	16
	Flathead sole	48	218
	Pacific Ocean Perch	10	8
	Rock sole	47	487
	Yellowfin sole	42	10,159
	<b>Total</b>	<b>158</b>	<b>10,887</b>
1996	Atka mackerel	18	13
	Flathead sole	40	251
	Pacific Ocean Perch	14	6
	Rock sole	30	82
	Yellowfin sole	28	5,906
	<b>Total</b>	<b>130</b>	<b>6,258</b>
1997	Atka mackerel	3	<sup>a</sup>
	Flathead sole	50	337
	Pacific Ocean Perch	16	30
	Rock sole	49	1,092
	Yellowfin sole	27	14,196
	<b>Total</b>	<b>145</b>	<b>15,655</b>
1998	Atka mackerel	26	0
	Flathead sole	59	39
	Pacific Ocean Perch	13	1
	Rock sole	46	8
	Yellowfin sole	27	282
	<b>Total</b>	<b>171</b>	<b>330</b>
1999	Atka mackerel	12	0
	Flathead sole	64	9
	Rock sole	35	32
	Yellowfin sole	18	1,209
	<b>Total</b>	<b>129</b>	<b>1,250</b>

Year	Species	Number of Vessels	Retained tons
2000	Rock sole	80	90
	Yellowfin sole	67	1,524
	<b>Total</b>	<b>147</b>	<b>1,614</b>
2001	Atka mackerel	27	16
	Flathead sole	79	0
	Rock sole	70	2
	Yellowfin sole	41	0
	<b>Total</b>	<b>217</b>	<b>18</b>
2002	Atka mackerel	47	78
	Flathead sole	68	1
	Rock sole	60	7
	Yellowfin sole	33	0
	<b>Total</b>	<b>208</b>	<b>85</b>
2003	Atka mackerel	72	86
	Flathead sole	91	9
	Rock sole	86	10
	Yellowfin sole	59	0
	<b>Total</b>	<b>308</b>	<b>105</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.3.4 Description of the Non-AFA Trawl Catcher Vessel Sector

Description of the Sector. Includes trawl catcher vessels that are not AFA-eligible to participate in the directed BSAI pollock fishery. Vessels in this sector are typically between 60 and 125 feet, but occasionally vessels less than 60 feet participate in this sector.

Participation in Groundfish Fisheries. The annual cycle of operations of vessels in this sector differs from that of AFA-eligible trawl catcher vessels. Differences include the reliance of the non-AFA fleet on the GOA groundfish fishery and the participation of several vessels in this sector in the halibut IFQ fishery using longline gear. In addition, the smaller vessels in this sector are allowed to participate in the State of Alaska commercial seine fisheries for salmon. Alaska's limited entry program for salmon fisheries established a 58-foot length limit for seine vessels entering these fisheries after 1976. Many trawl catcher vessels less than 60 feet in length were built to be salmon purse seine vessels, while others were designed to function as both trawlers and seiners.

Groundfish Landings by Species. Table 3-17 shows retained tons and number of vessels by species from 1995 to 2003 for the Non-AFA CV sector. As with AFA-eligible trawl catcher vessels, pollock is the primary groundfish species in terms of retained tonnage for vessels in the non-AFA trawl catcher vessel sector.

**Table 3-17 Catch history for the Non-AFA Trawl CV sector from 1995 to 2003**

Year	Species	Number of Vessels	Retained tons
1995	Flathead sole	3	<sup>a</sup>
	Rock sole	3	<sup>a</sup>
	<b>Total</b>	<b>6</b>	<sup>a</sup>
1996	Flathead sole	6	<sup>a</sup>
	Yellowfin sole	3	<sup>a</sup>
	<b>Total</b>	<b>9</b>	<b>1</b>

Year	Species	Number of Vessels	Retained tons
1997	Flathead sole	2	<sup>a</sup>
	Rock sole	4	<sup>a</sup>
	Yellowfin sole	3	<sup>a</sup>
	<b>Total</b>	<b>9</b>	<b>0</b>
1998	Flathead sole	6	0
	<b>Total</b>	<b>6</b>	<b>0</b>
2000	Atka mackerel	1	<sup>a</sup>
	Flathead sole	7	1
	Pacific Ocean perch	1	<sup>a</sup>
	Rock sole	4	11
	<b>Total</b>	<b>13</b>	<b>12</b>
2002	Atka mackerel	2	<sup>a</sup>
	Flathead sole	7	<sup>a</sup>
	Rock sole	4	4
	<b>Total</b>	<b>13</b>	<b>4</b>
2003	Atka mackerel	6	0
	Flathead sole	8	1
	Rock sole	8	23
	<b>Total</b>	<b>22</b>	<b>24</b>

<sup>a</sup> Data was withheld to protect confidentiality

Source: Data summarized from 1995-2003 NMFS Weekly Production Reports and 1995-2003 ADFG groundfish fish tickets. The 2003 fish ticket data should be considered preliminary.

### 3.1.4 Value of BSAI Groundfish Fisheries

Relative to first wholesale value, the Non-AFA Trawl CP sector is more diversified across the fisheries than other sectors. Two primary fisheries have historically contributed relatively equal shares of the first wholesale value for the Non-AFA Trawl CP fleet. Of the allocated species in the proposed action, Atka mackerel at \$21 million and yellowfin sole at \$32 million were two of the largest contributors to in 2003, each contributing 14 percent and 19 percent, respectively to first wholesale value (Table 3-18). Other fisheries which have historically contributed a significant share of the total wholesale value for the head and gut fleet are Pacific cod, rock sole, flathead sole, other BSAI Groundfish, and Gulf groundfish.

**Table 3-18 Wholesale product value (millions of dollars) by BSAI target fishery and GOA groundfish for the Non-AFA Trawl CP sector, 1995-2001**

Species	1995	1996	1997	1998	1999	2000	2001	2002	2003
Al Pacific Ocean perch	9.6	6.8	8.0	3.5	5.0	4.1	3.7	5.0	6.4
BSAI Alaska plaice	2.7	1.6	0.8	0.8	0.0	0.3	0.1	0.0	0.0
BSAI Arrowtooth	0.1	0.4	0.3	0.8	1.2	3.1	1.6	1.5	1.9
BSAI Atka mackerel	40.6	65.5	33.6	17.1	20.8	19.4	42.1	23.0	20.7
BSAI Flathead sole	7.8	13.0	11.2	14.0	10.7	11.7	10.6	10.3	8.4
BSAI Other groundfish	13.3	12.5	6.1	8.7	12.4	18.0	15.2	17.0	15.4
BSAI Pacific cod	11.3	14.4	11.9	22.3	29.2	34.1	29.3	33.2	35.1
BSAI Rock sole	27.8	27.7	26.5	13.3	14.4	15.7	15.3	21.3	16.6
BSAI Yellowfin sole	35.7	31.5	51.1	22.4	16.2	23.9	21.5	29.9	31.6
Gulf Groundfish	25.2	28.7	17.5	17.2	22.5	22.7	15.1	19.7	21.8
<b>Total</b>	<b>174.1</b>	<b>202.1</b>	<b>166.9</b>	<b>120.1</b>	<b>132.5</b>	<b>152.9</b>	<b>154.4</b>	<b>160.8</b>	<b>157.7</b>

Source: NMFS

### 3.1.4.1 BSAI Groundfish Products and Secondary Processing Activity

This section describes primary and secondary products produced in the BSAI groundfish fisheries. The discussion provides an aggregated perspective and does not examine production on a sector-by-sector basis. This section is based mainly on information provided in the document, *Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement* (NMFS 2004b).

#### Primary Products

Groundfish harvested in the Alaska fisheries are made into a wide range of primary products. In this analysis primary product is defined as the product form after the initial stage of processing.<sup>1</sup> By this definition, all products produced directly from raw fish are considered primary products. These products may be table-ready or final product, but more often they are reprocessed before they are sent to retail markets or foodservice establishments. Secondary processing is defined as any processing that occurs after the primary products have been transferred to a different facility. Secondary processing includes the production of kamaboko from surimi and the production of breaded fish sticks from fillets.

Table 3-19 shows the various primary products by weight made from BSAI groundfish during the 1998-2003 period. A large percentage of flatfish are frozen whole, while a small percentage, primarily yellowfin sole, are made into kiriti, a steak-like product. Atka mackerel is primarily produced as a headed and gutted or whole product. Most flatfish by volume are also headed and gutted, often with the roe left intact. It should be noted that comparing products by weight can be misleading. For example, fillets are typically skinless and boneless product, so a 5-lb yellowfin sole might yield 1.25 lbs of fillets. The price per pound for fillets is higher than for head-and-gut product, primarily because fillets require less secondary processing.

**Table 3-19 Volume of BSAI Groundfish Products by Species and Product Type (1,000 mt), 1998–2003**

Species/Product	1998	1999	2000	2001	2002	2003
<b>Flatfish</b>						
Whole fish	31.35	9.64	11.88	7.75	13.10	10.20
Head and gut	37.81	36.44	42.32	35.16	45.84	48.82
Kiriti	6.30	4.21	6.37	6.15	2.86	3.68
Fillets	-	-	-	-	-	.00
Other products	.86	.70	.85	.42	.74	.73
<b>Atka mackerel</b>						
Whole fish	4.87	10.10	2.92	4.81	3.27	7.13
Head and gut	21.90	22.18	22.49	26.66	18.53	20.72
Other products	-	.03	-	.00	.00	.00
<b>Rockfish</b>						
Whole fish	.04	1.73	.17	.46	.71	.74
Head and gut	4.45	5.04	4.30	2.94	4.58	5.77
Other products	.01	.02	.01	2.14	.00	.04

Source: NMFS

#### Overview of Secondary Processing Activities

During the period covered in this analysis (1995-2003) there were no major secondary processors operating in Alaska. Groundfish harvested in Alaska is most often exported as primary product, although

<sup>1</sup> This definition of primary processing differs from definitions used by processors when they report production to NOAA Fisheries in Weekly Processor Reports. In weekly reports processors differentiate primary products, such as fillets or surimi, from ancillary products, such as roe and fish meal.

some leaves in a raw form, such as whole frozen fish. How much remain in the U.S. and how much are shipped abroad varies from year to year.

#### **3.1.4.2 Product Flows and Markets for BSAI Flatfish, and Rockfish Species**

Non-AFA Trawl CPs currently produce almost exclusively, high quality whole and head and gut products. Catch is typically processed quickly after it is brought on board, maintaining relatively high quality across the fleet. At times, however, quality may suffer because of pressure of the current race for fish, under which participants can be compelled to bring catch on board more quickly than it can be processed to maintain share of the total catch. A large majority of the primary processed output of this fleet is shipped to Asia for reprocessing. A small portion of the output remains in the U.S., going directly to domestic markets. Historically, much of the production has been shipped to Japan and Korea. In recent years, however, China has played a more prominent role in the reprocessing of groundfish from the Non-AFA trawl CP sector. In particular, a large portion of the flatfish, Atka mackerel, and AI POP harvested from the BSAI is shipped to China, where it is reprocessed into finished products and then exported to final consumer markets around the world. In addition, some of the various groundfish species are reprocessed in Thailand and Vietnam. After reprocessing, production from the fisheries reaches a variety of markets, including the U.S., Europe, Japan, and other Asian countries.

In addition to these generalities, some greater definition of markets for specific species and products is discernable. While the general pattern of production for the fleet is similar across all species and products, a few specific markets exist for particular products of the sector. 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. Smaller grades (S and M) are shipped directly to Japan where the product is used in lunch boxes. Larger grades (L, 2L, & 3L) are typically first shipped to China for reprocessing before being shipped to the U.S. and European markets. A typical Non-AFA Trawl CP vessel will often produce up to 10 species per trip (including incidental catch species), with four or five grades per species.

Other distinguishable markets have developed for rocksole with roe, Atka mackerel, and AI POP. The major market for rock sole with roe is Japan; most rock sole with roe is shipped frozen, whole directly to Japan, where it is reprocessed. Most of this production remains in the Japanese consumer market. Rock sole without roe follows the path of other flatfish, with most shipped to China for reprocessing. Atka mackerel is more popular in Japan and Korea than elsewhere; most of the fleet's production exported to Japan or Korea for secondary processing and consumption. Nearly all of the AI POP harvested in the BSAI is exported to China where it is reprocessed and then shipped to Japan for final consumption.

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

#### **3.1.5 Community Information**

Fisheries influence communities through the economics and social activities generated through participants in the different industry sectors and through supporting industry and business. Some information concerning these impacts can be gleaned from examining the residence of participants in the fisheries. Participation by residence estimates can be generated for the Non-AFA Trawl CP sector. Care should be taken in evaluating the importance of the estimates, as the information available to estimate participation by residence will not fully reflect the distribution of regional and local impacts. For example, a vessel owner may not reside in the community that is used as a registered mailing address. In addition, participants in the Non-AFA Trawl CP sector likely purchase inputs and hire crew from outside of their communities of residence. In addition, impacts of similar magnitudes will have differing

importance with the size of the local and regional economy. Small communities could be greatly affected by impacts that are likely to go unnoticed in large cities.

### **Seattle Region**

The fishing communities that are expected to benefit from this proposed action are the locations the vessels offload, take on supplies, and the owners and crew live. Twenty-seven catcher processors appear to be eligible for the Non-AFA Trawl CP sector. Of these vessels, nearly all are based out of Seattle or other Washington communities. A few catcher processors are based in Rockland, Maine. Although the BSAI non-pollock groundfish fisheries may be important to the Seattle-based participants in these fisheries, the effects of these fisheries are largely overshadowed by both the large fishing and processing industry in Seattle and the general Seattle economy as a whole. A brief profile of the Seattle economy is attached as Appendix 1.

### **Alaska Peninsula/Aleutian Islands Region**

Groundfish catcher vessel ownership is lower in the Alaska Peninsula/Aleutian Islands region than in any other region. In recent years, none of the AFA trawl catcher vessels which supply a very large proportion of the groundfish processed in the region have been locally owned. Ownership is concentrated in two sectors (<60' hook-and-line/pot catcher vessels and jig catcher vessels) that tend to work the nearshore fisheries in the GOA. Vessel ownership within the region is strongly clustered in Sand Point and King Cove, with a secondary cluster in Unalaska. No other community accounted for more than 3 percent of regional vessels or one percent of regional value landed by regionally owned vessels

### **Kodiak Island Region**

The Kodiak Island region-owned fleet is very diverse. Some vessel sectors, especially the larger trawl vessels, have displayed remarkable stability over time. The number of smaller trawlers has declined, while fixed gear vessels have increased in number. Most of the fleet's fishing activity is in the central GOA, and product is delivered to Kodiak shoreside plants. Regional vessel ownership is heavily concentrated in the City of Kodiak.

### **Southcentral Alaska Region**

More groundfish catcher vessels are owned by Southcentral Alaska region residents than by residents of either the Alaska Peninsula/Aleutian Islands or Kodiak Island regions. Fixed gear catcher vessels predominate, and since 1995, five or fewer trawl vessels have been locally owned. In the fixed gear vessel sector, smaller vessel sectors predominate by a large margin. This pattern is due, in part, to the relatively small scale of fisheries (and processing capacity) in the Southcentral Alaska region, the diversified nature of the fisheries pursued, and the presence of relatively sheltered waters. Ownership of vessels is spread through numerous communities in the region, but (in order of importance) Homer, Anchorage, Cordova, and Seward.

### **Southeast Alaska Region**

The catcher vessels based in this region are more dependent on limited quantities of Pacific cod, rockfish, and sablefish pursued with longline gear than on higher volumes of groundfish pursued with trawl gear. Most locally owned vessels are relatively small and are likely to also participate in non-groundfish fisheries. Sitka, Petersburg, Juneau, and Ketchikan are the most important communities in terms of regional vessel ownership. Southeast Alaska has had the largest number of vessel owners among the Alaska regions since the late 1980s. However, the data reveal that there has been a marked decline in participation of vessels owned by residents of Southeast (and Southcentral) Alaska, while participation by other Alaska regions has remained relatively stable or increased. The regional differences may be due to the opportunistic nature of participation by small boats in groundfish and other fisheries. Residents of Southeast and Southcentral Alaska have relatively more non-fishing income-generating opportunities than

residents of Kodiak and the Alaska Peninsula. If the likelihood of big pay-offs in fishing decline, those individuals that can are more likely to engage in non-fishing occupations.

### **Unalaska/Dutch Harbor**

Unalaska is in a unique position with respect to the Bering Sea groundfish fisheries. It is the site of both the most intense onshore and offshore sector activity. Unalaska is a community whose economy is strongly tied to Bering Sea commercial fisheries in general and the groundfish fisheries in particular. Among groundfish species, pollock plays a particularly important role in local operations.

The four major local seafood plants in Unalaska/Dutch Harbor are UniSea, Westward Seafoods, Alyeska Seafoods and Royal Aleutian Seafoods. Other local shoreside processors include Osterman Fish and Prime Alaska Seafoods. Some of the largest processors in Unalaska/Dutch Harbor are wholly- or partially-owned by Japanese companies. For example, Maruha has ownership stakes in Westward Seafoods and Alyeska Seafoods, and Nippon Suisan is owner of the UniSea plant. Royal Aleutian Seafoods and Icicle Seafoods, which owns a stationary floating processor anchored in Beaver Inlet of Unalaska Island and two non-motorized processing barges moored in Dutch Harbor during part of the year, are owned by U.S. corporations based in Seattle. These facilities process a wide variety of seafood, including crab, halibut, salmon, herring, Pacific cod, pollock, and other groundfish.

### **Akutan**

Akutan is a unique community in terms of its relationship to the BSAI groundfish fisheries. It is the site of one of the largest shoreside facilities that process Bering Sea pollock (the facility is owned by the Seattle-based Trident Seafoods), but it is also the site of a village that is geographically and socially distinct from the shoreside plant. This “duality” of structure has markedly affected the relationship between Akutan and the BSAI groundfish fisheries. The community of Akutan, per se, is separate and distinct from the seafood processing plant, which is located some distance away from the residential concentration of the community; interactions between the community and the plant are of a limited nature; and the plant is not incorporated in the fabric of the community such that little opportunity exists for Akutan residents to participate meaningfully in the Bering Sea pollock fishery.

### **3.1.6 Description of the Western Alaska Community Development Quota (CDQ) Program**

This section provides general information about the Western Alaska CDQ Program. More detailed information about the CDQ Program and CDQ groups may be found at: the NOAA Fisheries, Alaska Region web site at <http://www.fakr.noaa.gov/cdq/default.htm>, the Alaska Department of Commerce, Community and Economic Development web site at <http://www.dced.state.ak.us/bsc/CDQ/cdqstats.htm>, and the Bering Sea Fishermen’s Association’s web site <http://www.cdqdb.org>.

#### **3.1.6.1 Establishment and Purpose of the CDQ Program**

The Western Alaska CDQ Program was created by the Council in 1992 as part of the inshore/offshore allocations of pollock in the BSAI fishery. As stated in the BSAI Groundfish FMP, the purpose of the CDQ Program is as follows:

The Western Alaska Community Development Quota Program is established to provide fishermen who reside in western Alaska communities a fair and reasonable opportunity to participate in the Bering Sea/Aleutian Islands groundfish fisheries, to expand their participation in salmon, herring, and other nearshore fisheries, and to help alleviate the growing social economic crisis within these communities. Through the creation and implementation of community development plans, western Alaska communities will be able to diversify their local economies, provide community residents with new opportunities to obtain stable, long-term employment, and participate in the Bering

Sea/Aleutian Islands fisheries which have been foreclosed to them because of the high capital investment needed to enter the fishery.

As practically implemented, the purpose of the CDQ Program is to help western Alaska communities strengthen their local economies by investing in both commercial fisheries and other fisheries-related projects, and to provide residents with education, training, and job opportunities in the fishing industry. The original CDQ Program regulations went into effect on November 18, 1992 and have been amended numerous times since then. In 1996, the Magnuson-Stevens Act institutionalized the program as part of the BSAI Groundfish FMP.

The fishery resources allocated under the CDQ Program are under federal jurisdiction, but the program is jointly managed by NOAA Fisheries and the State of Alaska (State). The State is primarily responsible for the day-to-day administration and oversight of the economic development aspects of the program and for recommending quota allocations for each CDQ applicant. NOAA Fisheries is primarily responsible for fisheries management aspects of the groundfish and halibut CDQ fisheries and broad program oversight. The specific criteria used to evaluate applications and make CDQ allocation recommendations are implemented in State regulations. The Alaska Regional Administrator, NOAA Fisheries, acting on behalf of the U.S. Secretary of Commerce, and the Council review the State's recommendations and make the final decision about allocations among CDQ applicants.

### **3.1.6.2 CDQ Communities and Groups**

The communities in the CDQ Program are predominantly Alaska Native villages. The communities are typically remote, isolated settlements with few natural assets with which to develop and sustain a viable diversified economic base. Basic community and social infrastructure is often underdeveloped or lacking, and transportation and energy costs are high. Historically, economic opportunities have been few, unemployment rates have been chronically high, and these communities (and the region) have been economically depressed.

While the CDQ communities border very productive fishing grounds, they were unable to exploit this proximity as the BSAI groundfish fisheries developed. The full development of the domestic fishing and processing industry in these fisheries occurred relatively quickly between 1976 and 1990. However, the very high capital investment required to compete in these fisheries precluded small communities from participating in them. The CDQ Program serves to ameliorate some of these circumstances by extending an opportunity to qualifying communities to directly benefit from the productive harvest and use of these publicly owned resources.

Currently, 65 communities participate in the CDQ Program, based on eligibility criteria listed in both the Magnuson-Stevens Act and federal regulation. The eligible 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 Aleutian Pribilof Island Community Development Association (APICDA), Bristol Bay Economic Development Corporation (BBEDC), Central Bering Sea Fishermen's Association (CBSFA), Coastal Villages Region Fund (CVRF), Norton Sound Economic Development Corporation (NSED), and Yukon Delta Fisheries Development Association (YDFDA).

### **3.1.6.3 CDQ Program Allocations, Harvest, and Value**

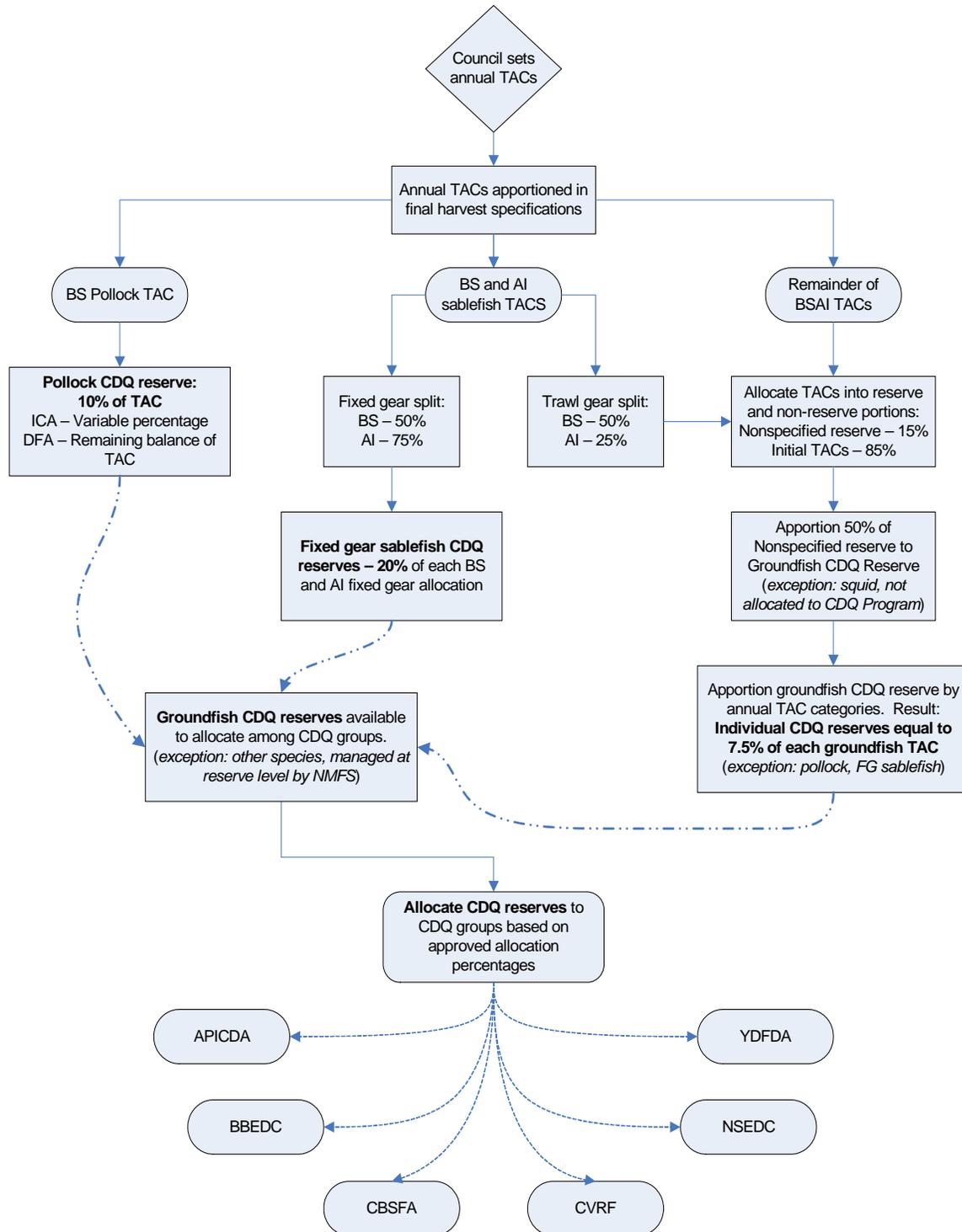
Since 1992, the CDQ Program has expanded several times and now includes allocations of pollock, halibut, sablefish, crab, all of the remaining groundfish species (cod, Atka mackerel, flatfish, and rockfish), and prohibited species catch (i.e., as bycatch allowances for salmon, halibut, and crab). CDQ Program allocations vary by species. While originally set at 7.5 percent, Congress increased the pollock CDQ allocation to 10 percent in 1998 as part of the American Fisheries Act. The percentage of other catch limits allocated to the CDQ Program (as CDQ reserves) is determined by: the BSAI Crab Rationalization Program (10 percent of crab species, except for Norton Sound red king crab, which is 7.5

percent. See 70 FR 10174, March 2, 2005); the BSAI FMP for all other groundfish and prohibited species (7.5 percent, except 20 percent for fixed gear sablefish); and, 50 CFR 679 for halibut (20 percent to 100 percent, depending on management area).

Establishment of the annual groundfish CDQ reserves is an extension of the groundfish harvest specifications process. Once annual BSAI species categories and TAC amounts are established, an initial TAC amount of 85 percent of the aggregated BSAI TACs is calculated for all species, except pollock and fixed gear sablefish. The remaining 15 percent of annual TAC is equally split between the CDQ Program and a non-specified groundfish reserve. This is the basis for the annual 7.5 percent groundfish CDQ reserve, which is then apportioned back among the TAC categories in place for a given year, based on the proportion each TAC category contributes to the aggregate BSAI TAC limit. The BS and AI pollock TACs each contribute 10 percent to CDQ reserves, while the fixed gear sablefish TAC contributes 20 percent to a CDQ reserve. A parallel process is used to allocate 7.5 percent of each BSAI prohibited species catch limits to the CDQ Program as prohibited species quota (PSQ). Annual groundfish CDQ and PSQ allocations for 1998 to 2004 are available at the NOAA Fisheries web site cited in the introductory paragraph to Section 3.3.5. Figure 3-2 illustrates the process involved in establishing the annual CDQ reserves. The process establishing PSQ reserves is similar.

Each CDQ group is eligible to receive a percentage allocation of each CDQ reserve and prohibited species quota (PSQ) reserve as recommended by the State and approved by the NOAA Fisheries. The percentages can vary by CDQ group, management area, and species. Such percentages are reviewed and amended on a periodic basis. Under the current regulations, all groundfish (except for squid and “other species,” as discussed in Section 3.4) and prohibited species caught by vessels fishing for a particular CDQ group accrues against that group’s CDQ and PSQ allocations. Besides squid and “other species,” none of the groundfish or prohibited species caught in the groundfish CDQ fisheries accrue against the non-CDQ apportionment of TAC or PSC limits. The CDQ groups must manage their catch to stay within each of their annual CDQ allocations, as they are prohibited from exceeding them. This may have a bearing on how successfully or aggressively CDQ groups prosecute some target species.

**Figure 3-2 Establishment and distribution of groundfish CDQ reserves.**



The 2004 CDQ allocations included approximately 187,000 metric tons of groundfish, over 2 million pounds of halibut, and approximately 3 million pounds of crab. 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. The six CDQ groups had total revenues in 2003 of approximately \$87 million, primarily from pollock royalties. Since 1992, the CDQ groups have accumulated net assets worth approximately \$231 million (as of 2003), including ownership of small local processing plants, catcher vessels, and catcher/processors that participate in the groundfish, crab, salmon, and halibut fisheries.

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 has 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 recent years, annual CDQ-related jobs has ranged from 1,339 people in 1999 to 2,080 in 2003. CDQ wages in those same years has ranged from \$10.6 million to \$11.9 million. CDQ groups continue to explore the means to provide both continuing and additional employment opportunities for local residents.

### **3.2 Components and Option Analysis**

Amendment 80 would allocate a percentage of the BSAI flatfish, Atka mackerel, and Aleutian Islands Pacific Ocean perch TACs to the Non-AFA Trawl CP sector. The unallocated portion will be available for a limited access fishery for the remaining trawl sectors with retained trawl catch history from 1995-2004 and the appropriate LLP endorsement. The amount of catch allocated to the Non-AFA Trawl CP sector will be based on the catch made by all vessels operating as a Non-AFA Trawl CP during the years selected for the allocation calculation. A vessel's catch history will be assigned to the sector regardless of whether they qualify to participate in that sector based on the BSAI Catcher Processor Capacity Reduction Program. For example, a vessel that harvested yellowfin sole would have the portion of their catch to the Non-AFA Trawl CP section. The vessel would then be required to meet the sector's minimum landings requirements set out in the BSAI Catcher Processor Capacity Reduction Program to fish in the sector. If the vessel does not meet the sector's minimum landings requirements, their catch would still be assigned to the sector, in proportion to how the landings were made. That vessel would still only be allowed to harvest fish from the sector's allocation in which they qualify.

A description of the four trawl sectors is presented in Table 3-20.

**Table 3-20 Description of the four trawl sectors**

Sector	Description
Non-AFA Trawl CPs	Trawl catcher/processor vessels that have harvested the required amount of BSAI groundfish, during the qualifying period, and are not listed by name in the AFA as being eligible to participate in the directed pollock target fisheries. This sector includes any catcher/processors that are not listed by name in the AFA, but are allowed to harvest less than 2,000 mt of pollock annually from the directed BSAI pollock fishery.
AFA Trawl CPs	The 20 trawl vessels listed by name in the AFA that are eligible to participate in the BSAI pollock fishery as catcher/processors. (A decision must be made regarding the assignment of catch made during the qualification period by the 9 vessels retired under the AFA.)
Non-AFA Trawl Catcher Vessels	Trawl catcher vessels that do not hold an AFA permit to participate in the directed BSAI pollock fishery and meet the sector's minimum landings requirements.
AFA Trawl Catcher Vessels -	All catcher vessels assigned an AFA permit that makes them eligible to target BSAI pollock. As of 2004, 112 catcher vessels held an AFA permit to participate in the directed BSAI pollock fisheries. Vessels must meet the minimum landings requirements as catcher vessels using trawl gear to participate in this sector.

### 3.2.1 Component 1 – Species to be included in sector allocations

Component 1 identifies the BSAI groundfish species that will comprise the primary target species group. Primary target species, in Amendment 80, are those species that will be assigned to the Non-AFA Trawl Catcher Processor (CP) sector as a direct allocation. The amount of each primary target species assigned to the Non-AFA Trawl CP sector will be calculated based on the allocation formula developed by the Council as part of this amendment. The Council's motion from the December 2004 meeting that defines the species to be allocated to the Non-AFA Trawl CP sector is listed in the box below.

**Component 1 Identifies which species will be included in the sector allocations**

**\*Allocate only the following primary target species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Islands Pacific ocean perch. Species could be added or deleted through an amendment process.**

The species to be allocated under the Council's preferred alternative in Amendment 80 are BSAI yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Islands Pacific ocean perch. BSAI species may be added or deleted from the current list of species allocated to the Non-AFA Trawl CP sector in the future. Species would be added through a new FMP amendment, if it is deemed to be desirable. Species that are not allocated to the Non-AFA Trawl CP sector under this option would be managed as a non-target species. Management of non-target species is expected to remain as it is currently managed for all sectors other than the Non-AFA Trawl CP sector, which could potentially be managed using sideboards. Further discussions of non-allocated species are presented below and in Section 3.2.11. The harvest of species allocated under this amendment, by members of the Non-AFA Trawl CP sector are shown in Table 3-21.

**Table 3-21 Non-AFA Trawl vessel catch of allocated species**

Area	Species	Total Catch 1995-2003	Average Catch 1995-2003
Aleutian Islands	Atka Mackerel	448,562	56,070
	Flathead	86	11
	POP Complex	119,714	14,964
	Rock Sole	1,770	221
	Yellowfin Sole	0	0
Bering Sea	Flathead Sole	124,204	15,525
	Rock Sole	262,307	32,788
	Yellowfin Sole	613,004	76,626

Source: Amendment 80 database

Table 3-22 below shows the target fisheries that various segments of the BSAI fleet participated in during the 2000 fishing year, as reported in NOAA Fisheries Blend data for that year. This year was selected because it is included in most of the allocation alternatives under consideration in this amendment, and it is the year prior to the substantial increases in the BSAI pollock ITACs that have limited the size of many flatfish ITACs in recent years. Variation in the target fisheries that vessel groups participate in may occur from year-to-year, but those changes are usually minor since vessels in specific sectors tend to focus on a few primary species over time

**Table 3-22 Target fisheries participated in by various segments of the fleet during 2000**

Vessel Group	Target Species
H&L CPs	Pacific cod, rockfish*, other species, and Greenland turbot
H&L CVs	Pacific cod, rockfish*, other species*, Greenland turbot, and arrowtooth flounder*
Jig	Pacific cod, rockfish*, and Greenland turbot*
Non-AFA Trawl CP	Atka mackerel, Pacific cod, other flatfish, rockfish, flathead sole, rock sole, Greenland turbot, arrowtooth flounder, yellowfin sole, and pollock <sup>1</sup>
AFA Trawl CP	Pollock, Pacific cod, other flatfish*, rockfish*, rock sole, arrowtooth flounder, and yellowfin sole.
Trawl CV	Pollock <sup>2</sup> , Pacific cod, other flatfish*, rockfish*, rock sole*, and yellowfin sole

Source: NOAA Fisheries Blend data, 2000

Note: An asterisk indicates that minimal amounts of that species were harvested in a target fishery for that species. It is unlikely those species would be opened to directed fishing by NOAA Fisheries in that sector, unless they formed a cooperative that defined strict penalties for over-harvesting their portion of the TAC.

<sup>1</sup>Pollock may only be targeted by the Ocean Peace. They may only target up to 2,000 mt of pollock under current AFA regulations.

<sup>2</sup>Only trawl catcher vessels that have AFA permits are allowed to participate in the Non-CDQ directed pollock fishery.

Notably absent from the list of species to be allocated to the Non-AFA Trawl CP sector is Pacific cod. It is anticipated that the Non-AFA Trawl CP sector's harvest of Pacific cod will be managed through current management measures and/or sideboard limits if this amendment is implemented. However, it is important to note that a separate FMP amendment is being developed, albeit on a slower time line, that will focus strictly on Pacific cod allocations. If that amendment is implemented, it is expected to clearly define the amount of Pacific cod that may be harvested by each sector of the fleet. Recall that Pacific cod is currently allocated among various fixed gear and trawl components of the fleet. The trawl CP component of the fleet is allocated 47 percent of the Pacific cod TAC after deductions are made for CDQ allocations and Pacific cod incidental catch needs in other fisheries. The trawl allocation is then allocated equally between catcher vessels and catcher processors. AFA Trawl CPs Pacific cod harvests are limited to be within their sideboard restrictions. Sideboards for the Non-AFA Trawl CP sector would be defined as the maximum amount of Pacific cod they would be allowed to harvest. Depending on the size of each sideboard and the number of trawl catcher processors operating outside of the two sectors, the competition for the trawl CP cod could be limited. That is especially true if the sum of the two sectors sideboards is equal to 100 percent or less of the total trawl catcher processor Pacific cod allocation. Given

that the AFA Trawl CP sector is limited to 25.8 percent of the trawl cp allocation of Pacific cod, the remaining catcher processor vessels can harvest a minimum of 74.2 percent of the overall allocation.

Members of the Non-AFA Trawl CP sector will still likely race to catch species that are not allocated to them in this amendment. Users of common property resources often try to increase their profitability by utilizing more of the available public resources before other participants in the fishery can harvest them. This phenomenon is well documented in the economic literature (National Academy of Sciences, 1999). However, creating a race for fish should only be a problem if harvesting those species creates some benefit to the harvester. Benefits could either be that 1) they can sell those species at prices that would increase their profitability or 2) that catching the non-target species at a higher rate allows harvesters to more efficiently harvest their target species. If the species that are not allocated to sectors do not meet either of these criteria, then allowing them to remain unallocated should not result in a race to catch them. In that instance, harvesters will continue to catch them at “normal” incidental catch rates when harvesting their target species. Conversely, if either criterion is met, a race-for-fish could result.

The species allocated to the Non-AFA Trawl CP sector accounted for a substantial percentage of their revenue generated at the 1<sup>st</sup> wholesale level during the years 1995-2002 (see Table 3-23). This percentage will fluctuate depending on a variety of factors including 1<sup>st</sup> wholesale prices and TACs. In the future it could vary by those factors and the allocation formulas developed in this amendment.

The revenues reported in the table below show that on average 62.5 percent of the 1<sup>st</sup> wholesale revenue of Non-AFA Trawl CP vessels is generated by species that are directly allocated to them under this amendment. Another species of value to the Non-AFA Trawl CP sector is Pacific cod. Pacific cod represented over 16.7 percent of their 1<sup>st</sup> wholesale revenue over the 1995-2002 time period. The remaining species harvested by these vessels accounted for just over 20 percent of their 1<sup>st</sup> wholesale revenue. Non-AFA Trawl CP vessels will be expected to continue to generate revenue from species that are not directly allocated to them. The amount of revenue generated by those species will depend on the amount of PSC the sector is allocated and the harvest limits that are placed on those species in Component 12.

**Table 3-23 Percentage of first wholesale revenue generated by Non-AFA Trawl CP vessels**

Year	Amendment 80 Species	Pacific Cod	Other Species
1995	68.2%	7.1%	24.7%
1996	72.1%	7.2%	20.7%
1997	79.2%	7.7%	13.1%
1998	59.5%	21.8%	18.7%
1999	52.1%	24.5%	23.5%
2000	49.5%	23.9%	26.6%
2001	61.2%	20.8%	18.0%
2002	58.1%	20.9%	21.0%
Average 1995-2002	62.5%	16.7%	20.8%

Source: 1995-2002 NOAA Fisheries Weekly Production Report data and 1<sup>st</sup> wholesale prices developed by Terry Hiatt.

Selecting the Council’s preferred alternative to define target species would exclude species like Aleutian Islands Northern rockfish from the direct allocation. Northern rockfish have traditionally been targeted in the GOA, but have often been discarded in the BSAI. Individuals have expressed concern that Aleutian Islands Northern rockfish may become a target fishery under this rationalization program. Even if Northern rockfish are not opened to directed fishing, any vessel licensed to operate in the Aleutian Islands would be allowed to retain this species as incidental catch against the amount of the target species they retain. That behavior could lead to vessels harvesting up to the legal amount of this potentially valuable species (topping-off) in order to increase overall profits from their allocation of target species. If this practice is prevalent throughout the fishery it may result in vessel operators trying to harvest more of the

non-target species before they are placed on PSC status. This could lead to a race to catch the valuable non-target species<sup>4</sup>.

If a race to catch non-target species does occur, management of those TACs would become more of a focus. NOAA Fisheries would need to closely monitor the harvests of those species to ensure that the TAC is not exceeded. In addition to closely monitoring these species, they could be managed by limiting the maximum percentage of the TAC the Non-AFA Trawl CP sector would be allowed to harvest (i.e., sideboards). Component 12 of Amendment 80 will address issues related to managing the Non-AFA Trawl CP sector's harvest of species not directly allocated to them.

### 3.2.2 Component 2 – CDQ allocations

Amendment 80 contains two separate component (Components 2 and 5) that could increase the percentage amounts of the groundfish TACs and PSC allocated to the CDQ Program. Component 2 contains three options that would allocate between 7.5 percent and 15 percent of the primary target species under consideration in Amendment 80 to the CDQ Program. Additionally, Component 2 contains five suboptions that would specify the percentage amount of incidental catch species (except Pacific cod) that would be allocated to the CDQ Program along with allocations of primary target species.

Component 5 would specify the percentage of PSC limits allocated to the CDQ Program. Given the options under consideration, the PSC allocation percentage could range from 7.5 percent to 15 percent of each of the PSC species currently allocated to the CDQ Program, except for Chinook salmon. Component 2 and Component 5 are similar in that they both provide options for increasing BSAI TAC and PSC allocations to the CDQ Program. Each of these components is discussed in more detail in Sections 3.4.2.1 and 3.4.2.5.

#### 3.2.2.1 Specific CDQ Allocation Options under Component 2

**Component 2. CDQ allocations for each primary target (Component 1) species in the program shall be removed from the TACs prior to allocation to sectors at percentage amounts equal to one of the following:**

Option 2.1 7.5%

**\*Option 2.2 10%**

Option 2.3 15%

**\*For Amendment 80 species, the reserves would be set at 10% of the TAC and all would be allocated to the CDQ reserves.**

**CDQ allocations for secondary groundfish species (except Pacific cod) taken incidental in the primary trawl target fisheries shall be removed from the TACs prior to allocation to sectors at percentage amounts equal to the following:**

Suboption 2.1 7.5%

**\*Suboption 2.2 10%**

Suboption 2.3 15%

Suboption 2.4 At species specific percentages that reflect historical incidental catch rates in the directed fisheries for the primary species by the Non-AFA Trawl Catcher Processor sector during 1998-2003.

<sup>4</sup> NOAA Fisheries needs over fishing level (OFL) type authority to close all fishing at the cooperative level if the harvest level approaches OFL. This approach could also be applied to the sideboards for the cooperatives. With NOAA Fisheries having the ability to close a particular fishery if a cooperative were approaching the OFL for a particular species, this would avoid closing the entire fishery to all sectors.

Component 2 provides a range of options associated with modifying the CDQ percentage allocations of the primary target species TACs. This includes three options for the percentage allocations of yellowfin sole, rock sole, flathead sole, Atka mackerel, and AI Pacific Ocean perch that could be made to the CDQ Program: 7.5 percent (the current percentage amount), 10 percent, and 15 percent.

In April 2006, the Council added language to the proposed action to reduce the reserves to 10 percent of the TAC for the species allocated under this action and would allocate the entire reserve to the CDQ program. As noted in Section 3.2.3.1, NOAA Fisheries annually deducts 15 percent of the BSAI TAC for each of the target species (except pollock and the hook-and-line and pot gear allocations for sablefish) for a reserve. The reserve is not designated by species and any amount of the reserve may be apportioned to a target species as long it does not result in overfishing. One half of the unspecific reserve is apportioned to the CDQ groups, which for the allocated species is 7.5 percent. Given the proposed action will allocate a percentage of the Amendment 80 species to the Non-AFA Trawl CP sector, the Council has added language to reduce the reserve to 10 percent and then apportioned the reserve to the CDQ program. See Section 3.2.3.1 for more details on the non-specified reserves.

Increasing percentage allocations to the CDQ Program, if corresponding annual CDQ allocations were completely harvested, probably would increase the incidental catch of groundfish and prohibited species in these target fisheries. Thus, along with increases in percentage amounts for primary target species considered under Options 2.2 and 2.3, this component includes 5 suboptions to increase the allocations for ". . . associated secondary species (except Pacific cod) taken incidental to the primary trawl target fisheries. . ." The species discussed under these suboptions will be referred to as incidental catch species.

The annual percentage allocation of each groundfish TAC and prohibited species catch limits to the CDQ Program currently is specified in regulation. Before selecting any of the suboptions to modify the allocation percentages of incidental catch species under Component 2, the Council would have to specifically identify the incidental catch species or species groups that would be included under Suboptions 2.2 through 2.5. Additional information about which incidental catch species are caught with primary species is in Section 3.4.2.6.

### **3.2.2.2 Historic CDQ Harvest of Primary Target Species**

The prosecution of CDQ fisheries have met with varying degrees of success over time. CDQ groups have demonstrated proficiency in catching all or most of their highest valued CDQ allocations, such as pollock, Pacific cod, and crab. Lesser valued target species (such as rock sole, flathead sole, and yellowfin sole) have not been as completely caught. Past groundfish CDQ catch is detailed in Table 3-24.

During the first few years of the multispecies CDQ Program (which began in late 1998), many of the flatfish CDQ allocations were not caught. This probably is due to a variety of factors. Some directed fisheries (such as for yellowfin sole) remained open all or most of the year, which may have meant that CDQ groups' flatfish partners opted not to fish for yellowfin sole CDQ, for which they would have to pay CDQ royalties. In fisheries such as the AI Atka mackerel fisheries, the amount of incidental catch species CDQ available to support the Atka mackerel CDQ directed fishery may have led to CDQ groups and their partner vessels to fish conservatively to avoid the incidental catch of some species. Prohibitions against exceeding both CDQ and PSQ allocations mean that CDQ groups operate cautiously in many fisheries to avoid exceeding their allocations of incidental catch species. CDQ groups may dedicate their allocations of incidental species to more valuable target fisheries such as Pacific cod or pollock. The residual amounts of incidental catch species may be deemed inadequate to account for additional bycatch needs in less valuable CDQ target fisheries, thereby limiting participation in such fisheries.

Further detail about the 2001-2004 CDQ catch of primary target species is portrayed in Table 3-25, which displays the percentage of the allocation that was harvested for each of these primary species. These data illustrate historic CDQ harvest trends for the primary target species considered under Components 1 and 2. This information may provide additional context about which species' catch could be increased, with

corresponding increases in royalties or other benefits to CDQ groups and member communities. The species that have been harvested at relatively high rates during past fishing years, as well as less utilized target allocations, are most likely to impact CDQ revenues if the program allocations for such species are increased. The groundfish CDQ fisheries have matured in the last several years, and fishing practices and relationships with harvesting partners have stabilized. Thus, groundfish CDQ catch from 1998 through 2000 is not included in Table 3-25 or subsequent discussions in this section.

**Table 3-24 Groundfish CDQ and PSQ Harvests, 1999-2004.**

Species or category	1999	2000	2001	2002	2003	2004
<b>Atka Mackerel, BS/EAI</b>	1,166	1,192	519	320	696	771
<b>Atka Mackerel, CAI</b>	822	1,807	2,467	1,591	2,129	2,248
<b>Atka Mackerel, WAI</b>	601	1,788	1,991	1,341	1,203	1,476
<b>Flathead Sole</b>	724	439	223	464	392	545
<b>Pacific Ocean Perch, EAI</b>	159	167	162	167	249	165
<b>Pacific Ocean Perch, CAI</b>	129	216	152	155	185	170
<b>Pacific Ocean Perch, WAI</b>	317	372	318	355	404	336
<b>Rock Sole</b>	575	401	221	553	641	892
<b>Yellowfin Sole</b>	1,968	219	182	1,972	5,564	6,321
BS Pollock (T)	99,113	113,554	138,883	148,427	149,121	149,169
AI Pollock	16	0	0	0	0	0
Bogoslof Pollock	0	0	0	0	0	0
Pacific Cod (T)	12,495	13,527	12,363	14,128	14,465	16,009
BS FG Sablefish (T)	18	66	40	150	66	143
AI FG Sablefish (T)	103	120	87	129	103	14
BS Sablefish	14	6	4	27	6	21
AI Sablefish	3	1	0	6	7	0
BS Greenland Turbot (T)	196	244	26	53	48	31
AI Greenland Turbot (T)	37	65	35	46	33	29
Arrowtooth Flounder	787	286	139	302	437	432
Other Flatfish	283	80	35	56	89	72
Alaska Plaice	n/a	n/a	n/a	137	184	302
BS Pacific Ocean Perch	35	1	8	9	15	2
BS Other Red Rockfish	10	7	3	2	n/a	n/a
BS Northern	n/a	n/a	n/a	n/a	2	n/a
AI Sharpchin/Northern	247	346	328	n/a	n/a	n/a
AI Northern Rockfish	n/a	n/a	n/a	342	276	n/a
BS Shortraker/rougheye	n/a	n/a	n/a	n/a	8	n/a
Northern rockfish (BSAI)	n/a	n/a	n/a	n/a	n/a	403
Shortraker (BSAI)	n/a	n/a	n/a	n/a	n/a	29
Rougheye rockfish (BSAI)	n/a	n/a	n/a	n/a	n/a	3
AI Shortraker/Rougheye rockfish	28	35	17	14	25	n/a
BS Other Rockfish	6	6	2	2	4	4

Species or category	1999	2000	2001	2002	2003	2004
AI Other Rockfish	27	36	18	32	10	17
Other Species	1,908	2,060	1,650	2,311	2,330	3,294
Squid	n/a	51	n/a	n/a	n/a	n/a

Note: (T) – Target fisheries other than those primary target fisheries considered in this analysis.

Source: NOAA Fisheries 2005. All amounts in metric tons, except for crab and salmon (listed in number of animals).

**Table 3-25 CDQ target species percent of annual allocation harvested, 2001-2004.**

Species	2001	2002	2003	2004	Average percent harvested
Atka Mackerel, EAI/BS	89%	77%	87%	91%	86%
Atka Mackerel, CAI	98%	89%	97%	96%	95%
Atka Mackerel, WAI	95%	91%	80%	95%	90%
Flathead Sole	7%	25%	26%	38%	24%
Pacific Ocean Perch, EAI	74%	64%	95%	72%	76%
Pacific Ocean Perch, CAI	79%	67%	74%	78%	75%
Pacific Ocean Perch, WAI	89%	84%	92%	87%	88%
Rock Sole	4%	14%	19%	29%	17%
Yellowfin Sole	2%	31%	89%	98%	55%

Source: NOAA Fisheries 2005.

Two fishing companies have been associated with harvesting the primary target species considered under this action in recent years. The first, M/V Savage, Inc. (which operates the F/V Seafisher) fishes for APICDA, while the remaining five CDQ groups currently are partnered with U.S. Seafoods, Inc. (which operates the F/V Seafreeze Alaska and F/V Ocean Peace). All three of these vessels are non-AFA trawl C/Ps. For the most part, the directed fishing for all of the primary species considered under Component 2 is done by these vessels.

### Atka Mackerel CDQ Fishery

The CDQ Program receives 7.5 percent of the each AI Atka mackerel TAC. The amount of Atka mackerel CDQ caught between 1999 and 2004 is detailed in Table 3-24. A complete description of the Atka mackerel fishery is in Section 3.1.2.4. The Atka mackerel CDQ fishery is typically prosecuted in conjunction with the non-CDQ Atka mackerel fishery. The fishery is often conducted concurrently with the Pacific Ocean perch CDQ fishery. In recent years, some CDQ groups (BBEDC, CBSFA, CVRF, and YDFDA) have transferred Atka mackerel CDQ and associated bycatch species among themselves in order to consolidate quota with one group (BBEDC) in order to collaborate on a more efficient AI trawl fishery. Royalties from the harvest of CDQ in such arrangements are distributed among participating CDQ groups, although the terms of such arrangements are unavailable. The fishing companies associated with the harvest of the Atka mackerel CDQ also may have benefited from such business arrangement, but that information also is not available.

In 2004, about 95 percent of the total CDQ allocation of Atka mackerel was harvested. The largest subarea harvest was from the CAI area where 2,246 mt (96 percent) of the allocation was harvested. In that same year about 771 mt (91 percent) and about 1,476 mt (95 percent) of the EAI/BS and WAI area allocations were harvested, respectively. Table 3-25 illustrates that the majority of each AI Atka mackerel CDQ allocation was harvested in 2001-2004. The average harvest of WAI, CAI, and EAI/BS Atka

mackerel CDQ in those years was 90 percent, 95 percent, and 86 percent, respectively. Given that relatively large percentages of the TACs were harvested in both the open access and CDQ fisheries, any increases in the CDQ allocations of Atka mackerel considered under Component 2, Options 2.2 and 2.3 would likely be harvested if TACs and market conditions are relatively stable, and if CDQ groups and their partners continue their recent fishing patterns.

### **Pacific Ocean Perch CDQ Fishery**

The CDQ Program receives 7.5 percent of the each AI Pacific Ocean perch TAC. A complete description of the Pacific Ocean perch fishery is in Section 3.1.2.5. The Pacific Ocean perch CDQ fishery is conducted in a similar manner to the Atka mackerel CDQ fishery described above. The fishery is prosecuted by the same vessels that fish for AI Atka mackerel, and usually on the same fishing trips, so the temporal effort is very similar. Quota transfers patterns also are similar in recent years, with multiple CDQ groups transferring their EAI, CAI, and WAI Pacific Ocean perch to a single CDQ group for a collaborative harvest effort. Some groups continued to manage the harvest of their Pacific Ocean perch allocations separately from other CDQ groups.

Although the majority of the annual CDQ allocations for Pacific Ocean perch appear to have been caught in recent years, this fishery has not been as successfully prosecuted as the Atka mackerel CDQ fishery. Annual percentage amounts harvested in 2001-2004 are displayed in Table 3-25. The average annual percent harvested for Pacific Ocean perch ranges from a low of 75 percent for CAI Pacific Ocean perch to 88 percent for WAI Pacific Ocean perch. Any increases to the CDQ allocations for this species considered under Options 2.2 or 2.3 could offer CDQ groups additional Pacific Ocean perch harvesting opportunities, along with associated royalty benefits.

### **Flathead Sole and Rock Sole CDQ Fisheries**

The CDQ fisheries for flathead sole and rock sole historically have not been very successfully prosecuted. The average percent of the flathead sole CDQ allocation harvested from 2001 to 2004 was about 24 percent. In these same years, the average annual percent of rock sole CDQ caught was about 17 percent of the amount allocated to the program. Even this catch was not necessarily taken in directed fisheries for these two species. For example, in 2004 much of the 892 mt of rock sole CDQ that was taken was caught in the pollock (282 mt) and yellowfin sole (446 mt) target fisheries. A complete description of these fisheries, including historic TAC and catch levels, is in Sections 3.1.2.2 and 3.1.2.3.

Reasons for the low catch rates in the directed fisheries for rock sole and flathead sole CDQ vary. The non-CDQ fisheries for these species are subject to more frequent closures due to reaching either PSC limits for halibut or seasonal apportionments of the annual rock sole or flathead sole TACs. It may be difficult to integrate fishing for CDQ into the non-CDQ operations of the vessels prosecuting these fisheries, or these vessels may choose to move into other target fisheries once the non-CDQ fisheries for rock sole or flathead sole are closed. CDQ groups may not place as much emphasis on the harvest of these species due to their relatively low royalty value. Alternatively, CDQ groups may choose not to aggressively prosecute this fisheries due to the relatively high level of halibut bycatch that occurs in them. Pacific halibut or other prohibited species caught in a rock sole or flathead sole CDQ fishery would have to be debited from applicable PSQ accounts, thereby decreasing the amounts of PSQ available in other, higher priority CDQ target fisheries.

### **Yellowfin Sole CDQ Fishery**

The CDQ Program receives 7.5 percent of the annual BSAI yellowfin sole TAC. A complete description of the general yellowfin sole fishery, including historic TAC and catch levels, is in Section 3.1.2.1. Until recently, the annual yellowfin sole CDQ fishery was not as fully prosecuted as fisheries such as pollock and Pacific cod. The first year in which essentially all of the CDQ yellowfin sole allocation was harvested was 2003. Table 3-25 shows that 88 percent of the yellowfin sole CDQ allocation was harvested in 2003, increasing to 98 percent of the yellowfin sole CDQ allocation in 2004. In contrast, CDQ groups only

harvested about 30 percent of their yellowfin sole allocation in 2002, even though the overall amount of yellowfin sole available to the CDQ groups was about the same in these years.

Collaborative efforts by CDQ groups may be one of the primary reasons for this increased catch. As with all groundfish CDQ species, yellowfin sole may be transferred among CDQ groups so that a group can accumulate species they are most interested in harvesting or to pool small amounts of either primary or incidental catch species quota to allow for more efficient harvesting operations. This has begun occurring in recent years with yellowfin sole CDQ. The non-CDQ yellowfin TAC was completely caught in recent years (2002, 2003, and 2004), which may mean that participants in that fishery had additional opportunities to fish for yellowfin sole CDQ.

### 3.2.2.3 Groundfish CDQ Royalties

CDQ groups establish harvesting contracts, along with other business arrangements, with a variety of seafood harvesters and processors operating in the BSAI groundfish fisheries. Access to amounts of CDQ is given in exchange for a negotiated percentage of the ex-vessel value of a particular species. Most royalty agreements are specific to a particular target species, such as pollock or Atka mackerel. Pollock CDQ royalties historically have accounted for the largest proportion of annual CDQ royalties. The combined value of CDQ royalties in 2004, the most recent year that complete CDQ royalty information is available, was approximately \$55.4 million. Pollock CDQ royalties accounted for \$45.9 million of this amount, or 83 percent of total royalties. Harvests of other groundfish, crab, and halibut CDQ yielded the remainder of CDQ royalties. Since the implementation of the multispecies CDQ Program, the royalties generated by the harvest of Atka mackerel, flatfish, Pacific Ocean perch, and other assorted groundfish species (not including pollock and Pacific cod) have not returned significant royalties to CDQ groups. Such species, in aggregate, accounted for less than one percent of CDQ royalties in 2004, or approximately \$540,000. Table 3-26 demonstrates the proportions that major species groups contributed to overall CDQ royalties in 2001, 2002, 2003, and 2004.

**Table 3-26 CDQ royalties by major species groups, 2001-2003.**

Species	Total all groups 2001	Total all groups 2002	Total all groups 2003	Total all groups 2004
Pollock	\$36,721,924	\$39,609,795	\$42,779,382	\$45,862,634
Pacific Cod	\$2,733,315	\$2,743,795	\$3,365,920	\$3,884,197
Crab	\$2,492,197	\$3,448,377	\$4,612,294	\$4,340,632
Halibut	\$202,822	\$214,872	\$469,680	\$496,554
Other species <sup>1</sup>	\$408,683	\$350,346	\$767,846	\$540,317
Total CDQ royalties	\$42,558,941	\$46,367,185	\$51,995,122	\$55,388,275

<sup>1</sup>Includes Atka mackerel, flatfish, Greenland turbot, sablefish, and some other species categories.

Source: NOAA Fisheries Service. Compiled from aggregated CDQ royalty information based on audited financial statements submitted by the CDQ groups.

The species in the “other species” category in Table 3-26 includes a range of species. This includes the primary target species under consideration under Component 2, as well as other species such as sablefish and Greenland turbot. The CDQ groups do not report all royalties separately by species, therefore, detailed information about royalties for the primary target species are not available. In some instances, royalty rates are based on a sliding scale according to the value of the product form produced from a given species based on current market conditions, while other rates appear to be based on a basic dollar amount per unit of target species harvested. Thus, the actual royalties per ton or unit that accrue to CDQ groups for the harvest of each primary target species cannot be calculated with the information currently submitted to NOAA Fisheries.

### 3.2.2.4 Projected Allocations of Primary Target Species to the CDQ Program

Component 2 has two options to increase the primary target species allocations made to the CDQ Program. This includes Option 2.2, increase CDQ allocations to 10 percent, and Option 2.3, increase CDQ allocations to 15 percent of primary species TACs. Option 2.1 would retain the current 7.5 percent

allocation to the program. An example for how much these CDQ allocations could increase are shown in Table 3-27, using the primary species 2004 TACs as a basis for calculations.

**Table 3-27 Projected CDQ allocations (mt) under Options 2.1, 2.2, and 2.3**

Species	2004 TAC	Option 2.1: 7.5% Allocation	Option 2.2: 10% Allocation	Option 2.3: 15% Allocation
Atka mackerel, EAI	11,240	843	1,124	1,686
Atka mackerel, CAI	31,100	2,333	3,110	4,665
Atka mackerel, WAI	20,660	1,550	2,066	3,099
Flathead sole	19,000	1,425	1,900	2,850
POP, EAI	1,408	106	141	211
POP, CAI	2,926	219	293	439
POP, WAI	5,187	389	519	778
Rock sole	41,000	3,075	4,100	6,150
Yellowfin sole	86,075	6,456	8,608	12,911
Total all species		16,396	21,861	32,789

Source: NMFS

Given the historic CDQ harvest rates for primary target species, increasing the percentage amounts of such species allocated to the CDQ program may or may not increase the amount of these species that CDQ groups would catch. Some primary species allocations, such as Atka mackerel, have been well used by CDQ groups, while others, such as rock sole, have not. However, past performance may not be a reliable indicator of future fishing practices, as fishing patterns are not static. Therefore, it is possible that the CDQ groups could increase their harvests of flathead sole or rock sole to a point where larger allocations would be caught. Alternatively, the markets for Atka mackerel, yellowfin sole, or Pacific Ocean perch could weaken or the overall TAC could increase to a level that would make harvesting those CDQ species less desirable.

Future performance in the CDQ fisheries for primary target species also may be predicated on whether the CDQ Program standards associated with strict quota accountability are still in effect, and whether CDQ groups have sufficient incidental catch species to prosecute their CDQ target fisheries. This issue is discussed in Section 3.2.2.6.

In general, however, CDQ groups have indicated that they would harvest additional allocations of flatfish species, such as rock sole, if the opportunity arose.

Merely increasing CDQ allocation percentages for these primary target species would not guarantee that CDQ Program would receive greater amount of these species in the future. Were the TAC for any of these primary target species to decrease substantially, the CDQ Program would be allocated an increased percentage of the available TAC limits (were either Option 2.2 or 2.3 selected), but still receive relatively less quota than is available at current TAC levels.

### 3.2.2.5 Benefits to the CDQ Program of Increased Target Species Allocations

Increasing CDQ allocations, as considered under Option 2.2 and 2.3, could offer opportunities for CDQ groups to increase their participations in the primary target fisheries and realize associated increases in royalties accruing to them for allowing their partners to fish for CDQ. However, based on the proportion of past royalties generated by these species, we anticipate that any increases to CDQ allocations would contribute a relatively small amount of the total CDQ royalties generated per year, if the increased allocations were to be harvested. For example, the majority of the Atka mackerel, Pacific Ocean perch, and yellowfin sole CDQ allocations were caught in 2003. Those species are included in the royalty category “other species” in CDQ groups establish harvesting contracts, along with other business arrangements, with a variety of seafood harvesters and processors operating in the BSAI groundfish fisheries. Access to amounts of CDQ is given in exchange for a negotiated percentage of the ex-vessel

value of a particular species. Most royalty agreements are specific to a particular target species, such as pollock or Atka mackerel. Pollock CDQ royalties historically have accounted for the largest proportion of annual CDQ royalties. The combined value of CDQ royalties in 2004, the most recent year that complete CDQ royalty information is available, was approximately \$55.4 million. Pollock CDQ royalties accounted for \$45.9 million of this amount, or 83 percent of total royalties. Harvests of other groundfish, crab, and halibut CDQ yielded the remainder of CDQ royalties. Since the implementation of the multispecies CDQ Program, the royalties generated by the harvest of Atka mackerel, flatfish, Pacific Ocean perch, and other assorted groundfish species (not including pollock and Pacific cod) have not returned significant royalties to CDQ groups. Such species, in aggregate, accounted for less than one percent of CDQ royalties in 2004, or approximately \$540,000. Table 3-26 demonstrates the proportions that major species groups contributed to overall CDQ royalties in 2001, 2002, 2003, and 2004.

Table 3-26 CDQ royalties in that category were approximately \$768,000 in 2003. If, under Option 2.3, CDQ percentage allocations of target species were increased to 15 percent of TACs, and those allocations were harvested to the degree that they were in 2003, then CDQ royalties could be expected to increase proportionately. Thus, doubling the CDQ percentage allocations for these species potentially could double CDQ royalties to \$1.536 million. That amount would represent approximately 3 percent of total CDQ royalties, based on 2003 royalty information.

Although that could be considered a modest increase in royalties, increasing primary target allocations under either Option 2.2 or Option 2.3 also could allow CDQ groups to negotiate additional training opportunities, internships, and employment positions for CDQ community residents, either on board fishing vessels or in the business offices of fishing vessels' managing companies. Even though the additional amount of CDQ royalties that could result from increases to CDQ percentage allocations are estimated to be relatively small, members of the CDQ groups could argue that they still play an important role in meeting their overall objectives, such as providing employment and training opportunities.

For those primary target species that have not been fully harvested in the past (i.e., rock sole), any increases in allocations may not increase revenues, at least in the short term. In the long term, such species may be more fully prosecuted, providing additional royalties and other benefits to CDQ groups. In general, the further development of CDQ fisheries for those primary target species being considered under Amendment 80 has been a long-standing goal for the CDQ groups. Increased prosecution of these fisheries depends on having strong enough markets for the products produced to cover the costs of harvesting the fish as well as having sufficient allocations of those species needed to account for incidental catch needs in both these and other, more valuable, target fisheries such as Pacific cod. Some portion of the primary target species will continue to play an important role in the CDQ Program by being used to account for incidental catch needs in other target fisheries, such as pollock and Pacific cod.

The lack of royalty information and variability in the amount of each species harvested in past years makes it difficult to project the value or benefit that could accrue to CDQ groups should primary species allocations be increased, as considered under either Options 2.2 or 2.3. High demand for a particular species and product form could trigger increased CDQ catch of these species, with corresponding increases in royalty payments. Practically speaking, it is unlikely that the entire amount of each primary species CDQ reserve would be caught, or that those fish that were caught would all yield royalties to CDQ groups. Some amount of the fish caught in primary target fisheries are discarded and yield no benefit to either the vessel owner/operator or to CDQ groups. CDQ group could individually develop their own estimate of the benefits that any increase to primary target species allocations might provide them, particularly on a species by species basis, but such information is not available. In lieu of that, the following discussion offers general information about the potential impacts associated with Options 2.2 and 2.3 for each primary target species considered under Amendment 80.

An example of the amount of Atka mackerel that could be allocated to the CDQ Program under Options 2.2. or 2.3 is portrayed in Table 3-27. If recent fishing patterns are maintained, any increase in Atka

mackerel CDQ allocations could benefit the CDQ groups. This could apply to individual CDQ groups, or to those CDQ groups who pool some portion of their quotas with other groups. CDQ groups could benefit from such harvest by the royalties they accrue from their harvesting partner(s) or from royalty pass-throughs from other CDQ groups that harvest Atka mackerel CDQ on behalf of other groups. The two fishing companies currently involved in harvesting Atka mackerel CDQ would continue to benefit if they are able to generate enough revenues from the Atka mackerel fishery to sufficiently cover their costs, as could other fishing companies that might participate in this CDQ fishery in the future.

Demand for Atka mackerel products will drive the prices in the open access fishery and, to some extent, CDQ royalty rates. The supply of Atka mackerel on the market is not expected to change if CDQ Program allocation percentages change. The total amount of Atka mackerel harvested is not expected to vary drastically if it is allocated to either the limited access or CDQ sectors, and both sectors produce equivalent products from the fish harvested. If there is adequate market demand for Atka mackerel products, the fleet probably would harvest the available fish to the best of its ability. Since Atka mackerel CDQ allocations have historically been almost completely harvested it is likely that increasing the Atka mackerel CDQ allocation under either Option 2.2 or Option 2.3 would increase CDQ royalties and other associated benefits to CDQ groups, such as employment opportunities. The future royalties that would be generated from Atka mackerel, under the various allocation alternatives, cannot be projected with the available royalty data.

If the current fishing patterns for yellowfin sole are maintained, it is likely that any increase in the yellowfin sole allocation could benefit the CDQ groups that successfully harvests yellowfin sole, either individually or cooperatively. CDQ groups would benefit from such harvest by the royalties they accrue from their harvesting partner or from royalty pass-through from other CDQ groups that have acquired yellowfin sole CDQ by transfer. The two fishing companies currently involved in harvesting yellowfin sole CDQ would continue to benefit if they are able to generate enough revenues from the yellowfin sole fishery to sufficiently cover their costs of participating in this fishery.

Given the recent yellowfin sole TACs, as well as the 2003 and 2004 demand for yellowfin sole by some CDQ groups, it is likely that increasing the yellowfin sole allocation under either Option 2.2 or Option 2.3 would increase CDQ royalties and other associated benefits to CDQ groups, such as employment opportunities. Exact estimates of the amount of the royalty increases cannot be made with available information.

CDQ allocations for Pacific Ocean perch, flathead sole, and rock sole could increase under either Option 2.2 or Option 2.3. Examples of potential allocation increases for these target species are included in Table 3-27. If past trends are any indication, increases in the Pacific Ocean perch allocations could lead to increased catch of this species in the CDQ fisheries. However, even with both increased program allocations and catch rates, Pacific Ocean perch royalties would still contribute a modest amount to overall CDQ royalties, since the TACs and associated CDQ Program allocations for this species are relatively small. Increases to the CDQ allocations for rock sole or flathead sole has the potential to benefit CDQ groups via additional harvesting opportunities for these species, along with associated royalties and other benefits. However, such benefits probably could not be realized until that point in time in which these particular CDQ fisheries are successfully prosecuted to a much greater extent than historically has occurred.

### **3.2.2.6 Projected Allocations of Incidental Catch Species to the CDQ Program**

In addition to potential increases to the primary target species CDQ allocations considered under Options 2.2 and 2.3, Component 2 also contains five suboptions associated with retaining or increasing CDQ percentage amounts for incidental catch species. Such increases could be appropriate in relation to current CDQ catch accounting requirements. CDQ groups are individually accountable for the quotas allocated to them. All groundfish CDQ and the halibut PSQ allocated to individual CDQ groups are managed with hard caps, meaning that a CDQ group is prohibited from exceeding its allocation of a given species. If a

CDQ group exceeds the amount available of a particular allocation, then the CDQ group incurs an “overage” and faces potential enforcement action. Completely catching a given CDQ allocation could impact a CDQ group’s ability to continue participating in some target fisheries, as additional catch of the species for which a group has no remaining quota may be impossible to avoid. This effectively requires CDQ groups to stand down from prosecuting those target fisheries for which it can’t account for additional amounts of incidental catch species.

The incidental catch species associated with the Amendment 80 primary target species include, historically, all BSAI TAC categories. Also, note that there is not necessarily a clear distinction between whether a given species is a target species or incidental catch species. The primary target species considered under this action also are caught incidentally in other CDQ target fisheries such as Pacific cod, pollock, or sablefish. Furthermore, some target species are caught incidentally in other primary target fisheries, where they may be either retained or discarded. For example, Pacific Ocean perch may be caught in the directed fishery for Atka mackerel. Table 3-28 is an example of the typical catch pattern for the incidental catch species that were caught in the 2004 CDQ target fisheries.

Pacific cod specifically is excluded from consideration for increased allocations under these suboptions. A separate FMP action addressing Pacific cod allocations among industry sectors includes options that could increase Pacific cod allocations to the CDQ Program. It also is worth noting that a separate action to amend CDQ reserve management regulations is under development for Council review. One of the elements of that action would be to only allocate primary target species among CDQ groups and for NOAA Fisheries to manage incidental catch species at the CDQ reserve level. This approach already is in place for the “other species” CDQ reserve. The Council recommended this change to “other species” CDQ management due to concerns that the allocation of “other species” to the CDQ Program was inadequate to provide for the incidental catch of these species in the groundfish CDQ fisheries (see 68 FR 69974; December 16, 2003).

**Table 3-28 Incidental catch species harvested in the 2004 CDQ fisheries.**

Species Category	Target Fishery					Grand Total
	Atka Mackerel	Rockfish <sup>1</sup>	Flathead sole	Rock sole	Yellowfin sole	
Atka Mackerel, EAI	768.877		0.164	0.007		769.05
Atka Mackerel, CAI	2130.05	117.843				2247.89
Atka Mackerel, WAI	1475.594					1475.59
Flathead Sole	0.136		20.239	3.478	215.153	239.01
Pacific Ocean Perch, EAI	165.321					165.32
Pacific Ocean Perch, CAI	150.404	20.005				170.41
Pacific Ocean Perch, WAI	336.488					336.49
Rock Sole	14.374	1.546	7.754	105.509	446.113	575.30
Yellowfin Sole			24.923	77.74	6162.148	6264.81
AI Greenland Turbot	28.467					28.47
AI Other Rockfish	15.404	0.788				16.19
AI Sablefish	0.153					0.15
Alaska Plaice			3.271	17.91	279.505	300.69
Arrowtooth Flounder	22.201	0.525	58.058	1.487	112.533	194.80
BS Greenland Turbot			2.888			2.89
BS Other Rockfish			2.082			2.08
BS Pacific Ocean Perch			0.272			0.27
BS Sablefish			19.165	0.143	0.023	19.33
Northern Rockfish	310.157	90.527				400.68
Other Flatfish	0.773		11.812	1.287	17.83	31.70
Other Species	58.455	1.559	20.959	5.186	190.172	276.33

Species Category	Target Fishery					Grand Total
	Atka Mackerel	Rockfish <sup>1</sup>	Flathead sole	Rock sole	Yellowfin sole	
Pacific Cod	256.786	12.136	19.175	10.64	186.98	485.72
Rougheye Rockfish	2.547		0.206			2.75
Shortraker Rockfish	21.652		0.061			21.71

<sup>1</sup>Includes Pacific Ocean perch.

Source: NOAA Fisheries 2005. CDQ catch data by reported target, for non-pelagic trawl gear. All amounts in metric tons.

This table illustrates that some amount of every 2004 BSAI TAC category was caught in the directed CDQ fisheries for primary target species in 2004. Squid is not allocated to the CDQ Program and is not included in this table. Approximately 759 mt of pollock was caught with non-pelagic trawl gear in the 2004 CDQ fisheries, and accrued towards the incidental catch allowance for pollock. Pollock is excluded from this discussion as this species is not under consideration for increased allocations under either Options 2.2 or 2.3. Incidental catch in the 2001, 2002, and 2003 CDQ fisheries for primary target species show a similar pattern to the 2004 CDQ fisheries. Some amount of every, or almost every, annual TAC category in place for those years was caught in CDQ fisheries for primary target species. There are some exceptions. Several BS species categories, such as BS sablefish, BS Greenland turbot, and BS northern rockfish, were not caught in the CDQ non-pelagic trawl fisheries in 2003. No amount of BS "other rockfish" was caught in CDQ non-pelagic trawl fisheries in 2002. In general, since the directed fisheries for the primary target species considered under this action are conducted in various regions of both the AI and BS, during various times of the year, at different depths, and with varying fishing tactics, it is likely that these fisheries will catch species comprising each BSAI TAC category at some point in time, even if some species are not caught every year. A key decision point for the Council is which incidental catch species to include in any of the suboptions (except for Suboption 2.1) associated with increased CDQ Program percentage amounts.

#### Suboptions 2.1, 2.2, and 2.3

Component 2, Suboption 2.1 would retain the current 7.5 percentage amount of incidental catch species TAC to the CDQ Program. Suboption 2.2 would increase the percentage amounts to 10 percent, while Suboption 2.3 would increase the percentage amount to 15 percent. The latter two suboptions are aligned with the percentage amount increases for primary target species considered under Options 2.2 and 2.3.

As the Council has not yet specified which incidental catch species to include under Suboptions 2.2 through 2.5, analysts have selected all incidental catch species in the primary target fisheries from Table 3-28, except the primary target species themselves, Pacific cod (excluded from consideration under this action), and pollock (since incidental catch of pollock accrues towards the pollock ICA). These incidental catch species include Greenland turbot, sablefish, Alaska plaice, arrowtooth flounder, "other flatfish," BS Pacific Ocean perch, northern rockfish, rougheye rockfish, shortraker rockfish, "other rockfish," and "other species." Increased allocations under Suboptions 2.2 and 2.3 for these species are shown in Table 3-29, using 2004 TACS as a basis for calculations. Increases to "other species" program allocations are included in this table, but it should be noted that this species category is no longer allocated among CDQ groups, for the reasons discussed earlier.

**Table 3-29 CDQ allocations (mt) for incidental catch species, based on allocation percentages under Component 2: Suboptions 2.1, 2.2, and 2.3.**

Species	2004 TAC	Suboption 2.1: 7.5%	Suboption 2.2: 10%	Suboption 2.3: 15%
AI Greenland Turbot	800	60	80	120
AI Other Rockfish	634	48	63	95
AI Sablefish	775	58	78	116
Alaska Plaice	10,000	750	1,000	1,500
Arrowtooth Flounder	12,000	900	1,200	1,800
BS Greenland Turbot	2,700	203	270	405
BS Other Rockfish	460	35	46	69

Species	2004 TAC	Suboption 2.1: 7.5%	Suboption 2.2: 10%	Suboption 2.3: 15%
BS Pacific Ocean Perch	1,408	106	141	211
BS Sablefish	1,450	109	145	218
Northern Rockfish	5,000	375	500	750
Other Flatfish	3,000	225	300	450
Other Species	27,205	2,040	2,721	4,081
Rougheye Rockfish	195	15	20	29
Shortraker Rockfish	526	39	53	79

Source: NOAA Fisheries 2005

The increased CDQ allocations portrayed in Table 3-29 are a proportional increase in CDQ allocations for incidental catch species that would accompany increased percentage amounts primary target species. Neither the species categories or amounts shown in this table represent a reliable estimate of the type or amount of these species that would be caught in the CDQ directed fisheries for primary target species. Such fisheries may need more, or less, than the amounts shown in this table in order to provide sufficient amounts of incidental catch species so that such quotas are not exceeded before CDQ groups' target species allocations are fully prosecuted.

#### Suboption 2.4.

Suboption 2.4 could modify the CDQ allocations for those incidental catch species allocated to the CDQ Program to reflect the actual catch rates of incidental catch species in each of the five primary species target fisheries (Atka mackerel, Pacific Ocean perch, yellowfin sole, rock sole, and flathead sole). CDQ allocation percentages would be removed from the TACs "(a)t species specific percentages that reflect historical incidental catch rates in the directed fisheries for the primary species by the Non-AFA Trawl Catcher Processor sector during 1998-2003."

The current CDQ reserve apportionment process specifies that, with limited exceptions, the CDQ Program receives 7.5 percent of each TAC category as described in Section 3.1.6.3, and Figure 3-2. During the development of the multispecies CDQ Program, the Council recommended that:

*"7.5 percent of all BSAI groundfish total allowable catch limits not already covered by a CDQ program...be allocated to CDQ communities as defined in the current CDQ program..."*<sup>5</sup>

No distinction was made regarding which species were target species, which species were regarded as incidental catch species, nor the appropriate proportion of incidental catch species that would be necessary to fully account for the catch of incidental catch species in primary target fisheries. CDQ groups have the discretion to determine which species they consider primary species. They also have the flexibility to choose which vessel and gear types to use for the prosecution of primary target fisheries, as well as when and where their fishing activities occur. This offers CDQ groups the means to tailor their fishing activities to maximize the benefits from any given CDQ allocation to the extent afforded by fixed percentage allocations of all species. The current allocation structure does not guarantee that adequate amounts of incidental catch species are made available to account for such species in the CDQ target fisheries. Estimating the appropriate amount of each incidental catch species to allocate to the CDQ Program is a complex exercise that has never been undertaken at a comprehensive level by the Council or NOAA Fisheries, although the State of Alaska has done some bycatch modeling as part of its periodic CDQ allocation recommendation process.

The objective of Suboption 2.4 is to better match the amount of incidental catch allocations made to the CDQ Program to the amount needed to fully harvest the Amendment 80 target species. A better match between target and incidental catch species allocations could reduce the chance that the CDQ groups would reach incidental catch quotas before they had fully harvested their target species allocations. It also

<sup>5</sup>NPFMC Newsletter, June 1995.

could reduce the possibility that excessive amounts of incidental catch species would be allocated to the CDQ Program, thereby making it unavailable to support non-CDQ fisheries. However, the process described in Suboption 2.4 does not yield a fixed percentage allocation of each incidental catch species that could be allocated to the CDQ Program each year.

The following steps would be necessary to use historic catch rates as a basis for determining the amount of each incidental catch species to annually allocate to the CDQ Program.

1. Calculate the average historic catch rates for incidental catch species in each of the primary target fisheries by non-AFA trawl catcher/processors based on their catch from 1998 through 2003. This would be a one-time calculation. A preliminary estimation of such rates is in Table 3-30, including a breakdown of the different AI management areas for both Atka mackerel and Pacific Ocean perch that displays the different catch rates for these areas.
2. Each year, determine the amount of each primary target species to allocate to the CDQ Program based on the applicable percentage allocations for such species (i.e., 7.5 percent, 10 percent, or 15 percent).
3. Multiply the average historic catch rates for each incidental catch species by the annual CDQ Program allocations for each Amendment 80 target species to estimate the metric tons of incidental catch species needed to support these target species.
4. Sum the amount of incidental catch species needed for each Amendment 80 target species to obtain the total amount of each incidental catch species that could be needed to support the CDQ target fisheries.
5. Subtract the total amount of incidental catch species needed to support the CDQ target fisheries for Amendment 80 target species from the TAC for each applicable incidental catch species. These amounts would then be allocated to the CDQ reserves for each incidental catch species.

**Table 3-30 1998-2003 incidental catch rates, Amendment 80 target fisheries.**

Incidental catch species	Area	Target Fishery								
		Mackerel EAI	Mackerel CAI	Mackerel WAI	POP EAI	POP CAI	POP WAI	Flathead sole	Rock sole	Yellowfin sole
Alaska plaice	BSAI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.00%	2.43%	14.71%
Arrowtooth flounder	BSAI	0.22%	0.47%	0.26%	8.68%	4.33%	1.85%	32.11%	2.22%	2.79%
Atka Mackerel	BSAI	Target	Target	Target	9.88%	11.57%	5.78%	0.11%	0.04%	0.02%
Flathead Sole	BSAI	0.01%	0.00%	0.01%	0.04%	0.00%	0.02%	Target	5.78%	4.99%
Northern Rockfish <sup>1</sup>	BSAI	4.83%	6.41%	12.80%	0.47%	1.71%	1.33%	0.00%	0.00%	0.00%
Other Flatfish	BSAI	0.00%	0.00%	0.02%	0.09%	0.02%	0.12%	10.36%	5.12%	10.09%
Other Rockfish	BSAI	1.35%	0.35%	0.26%	0.63%	0.99%	0.83%	0.40%	0.02%	0.00%
Other Species	BSAI	0.84%	0.69%	1.42%	1.14%	1.15%	0.84%	20.70%	5.82%	5.94%
Pacific Cod	BSAI	4.03%	3.22%	5.90%	2.49%	2.00%	1.11%	27.54%	20.81%	9.96%
Pollock	BSAI	0.17%	0.47%	0.44%	2.77%	7.98%	1.38%	37.70%	31.00%	20.88%
POP	BSAI	3.40%	2.45%	4.98%	Target	Target	Target	0.62%	0.00%	0.01%
Rock Sole	BSAI	0.07%	0.12%	0.12%	0.18%	0.07%	0.02%	21.26%	Target	13.80%
Sablefish	BSAI	0.02%	0.00%	0.00%	0.48%	0.69%	0.03%	0.55%	0.02%	0.00%
Sharpchin/Northern <sup>2</sup>	AI	6.14%	5.64%	14.40%	1.46%	4.08%	4.14%			
Shorthead/Rougheye <sup>3</sup>	AI	0.26%	0.10%	0.10%	4.56%	4.18%	2.04%			
Shorthead/Rougheye <sup>4</sup>	BSAI	0.03%	0.03%	0.11%	7.01%	3.20%	2.33%	0.05%	0.00%	0.00%
Shorthead, rougheye, sharpchin, northern <sup>5</sup>	BS							0.05%	0.01%	0.01%
Squid	BSAI	0.00%	0.01%	0.02%	0.09%	0.03%	0.03%	0.04%	0.00%	0.00%
Turbot	BSAI	0.06%	0.32%	0.06%	6.13%	0.16%	0.03%	3.70%	0.02%	0.07%
Yellowfin sole	BSAI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.40%	17.55%	Target

## Notes:

1. BSAI category in 2002-2003.
2. AI category in 1998-2000, AI and BS category in 2001.
3. AI category in 1998-2000.
4. BSAI category beginning in 2001.
5. BS category in 1998-2001.

Source: NOAA Fisheries catch data.

### Example of calculating CDQ allocations of incidental catch species

For purposes of illustrating the above steps, we chose two different incidental catch species: arrowtooth flounder and northern rockfish. Next, we calculated the amount of the 2005 TAC that would be allocated to the CDQ Program for each primary target fishery per Option 2.2, which specifies a 10 percent allocation to the CDQ Program.

Then, we estimated the amount of each of the two incidental catch species that would be caught in each of the CDQ fisheries for primary target species, using the catch rates in Table 3-29. These amounts were then summed (by individual species) to yield the total estimated amount of arrowtooth flounder and northern rockfish that could be caught in all these fisheries combined. This aggregate amount is the quantity of incidental catch species that would be subtracted from each 2005 TAC and allocated to the CDQ Program to support the incidental catch of these two species in the Amendment 80 target fisheries.

Based on these estimates, the CDQ Program would be allocated 1,044 mt (8.7 percent) of the 2005 arrowtooth flounder TAC and 533 mt (10.7 percent) of the 2005 BSAI northern rockfish TAC to support the incidental catch of these two species in the CDQ target fisheries for the primary species considered in this action. For arrowtooth flounder, the estimated amount is less than the 10 percent allocation of target species made to the CDQ program, while the estimated amount of northern rockfish exceeds the target species percentage allocation. Neither of these amounts include the additional amounts of these incidental catch species that could be caught in other CDQ target fisheries. Table 3-31 displays these calculations.

**Table 3-31 Examples of calculated incidental catch CDQ allocations.**

Target species	2005 TAC (metric tons)	Component 2 Option 2.2: 10% CDQ allocation	Example 1: Arrowtooth flounder		Example 2: Northern rockfish	
			1998-2003 catch rate	Estimated incidental catch amount	1998-2003 catch rate	Estimated incidental catch amount
Atka Mackerel, EAI	7,500	750	0.22%	2	4.83%	36
Atka Mackerel, CAI	35,500	3,550	0.47%	17	6.41%	227
Atka Mackerel, WAI	20,000	2,000	0.26%	5	12.80%	256
Flathead Sole	19,500	1,950	32.11%	626	0.00%	0
Pacific Ocean Perch, EAI	3,080	308	8.68%	27	0.47%	1
Pacific Ocean Perch, CAI	3,035	304	4.33%	13	1.71%	5
Pacific Ocean Perch, WAI	5,085	509	1.85%	9	1.33%	7
Rock Sole	41,500	4,150	2.22%	92	0.00%	0
Yellowfin Sole	90,686	9,069	2.79%	253	0.00%	0
			total	1,044	total	533
<b>Incidental catch species</b>	<b>2005 TAC</b>	<b>Calculated CDQ allocation</b>	<b>CDQ percent of TAC</b>			
Arrowtooth flounder	12,000	1,044	8.70%			
Northern rockfish	5,000	533	10.66%			

Source: NMFS

### Consequences of Suboption 2.4

This suboption only addresses the incidental catch needs for the Amendment 80 primary target species. It does not include the incidental catch species needs for the remaining CDQ target fisheries for pollock, Pacific cod, sablefish, and halibut (incidental catch species caught by vessels 60 feet LOA or greater that are halibut CDQ fishing accrue toward groundfish CDQ allocations).

The process described above in steps 1-5 would not yield a fixed, known, annual percentage allocation to annually establish the CDQ reserve for each incidental catch species. The percentage allocated to the CDQ Program for each incidental catch species could vary depending on (1) the amount of each target species allocated to the program each year, and (2) the annual TAC for each incidental catch species.

Suboption 2.4 could offer a better approach to allocating incidental catch species if strict quota accountability is maintained for each species allocated to the CDQ Program because it would more

closely match incidental catch allocations with target species allocations. This suboption could maximize the potential that CDQ groups could fully harvest each of their target species allocations without risk of incurring quota overages of incidental catch species. It also could mean that the CDQ Program would not receive more of an allocation of incidental catch species than is actually needed to supported CDQ target fisheries, thereby ensuring that some portion of the annual TACs could be “stranded,” and therefore unavailable to the non-CDQ fisheries.

### **Suboption 2.5.**

Suboption 2.5 could allow the Council the discretion to select what it considers the appropriate percentage amount for each of the incidental catch species allocated to the CDQ Program. Such amounts could reflect some percentage amount not explicitly presented in Suboptions 2.1 through 2.4, percentage amounts based on the Council’s assessment of other information presented in this analysis, public testimony, or other factors.

### **Other considerations related to suboptions 2.2 through 2.5**

The suboptions to increased percentage amounts of incidental catch species to the CDQ Program are all predicated on a continuation of the existing catch accounting requirements for the CDQ fisheries. CDQ groups currently are prohibited from exceeding their annual groundfish CDQ allocations, and catching an entire annual allocation of a given incidental catch species may impact whether a CDQ group may continue to fishing for some other primary species. Past Council action modified the management of two different species, squid and “other species.” Squid is no longer allocated to the CDQ Program at all<sup>6</sup> and the “other species” category is allocated to the CDQ Program, but not among the CDQ groups. Catch of “other species” in CDQ fisheries is managed at the program level with directed fishing closures and the use of other management measures, as previously discussed.

A separate action to further modify the management of CDQ reserves is under development for Council consideration. A primary component of that action is determining which species (i.e., primary target species) to allocate among CDQ groups, and whether to adopt alternative management measures to account for the catch of incidental catch species in the CDQ fisheries. Such measures could relax accounting standards and align the CDQ fishery management measures more closely with those used in the non-CDQ fisheries. Were the Council to recommend adopting such changes, the altered CDQ fisheries management structure could essentially render Suboptions 2.2, 2.3, 2.4 and 2.5 moot. Incidental catch species would be managed with soft caps, which means that once the annual CDQ Program allocation for a given incidental catch species were reached, CDQ fishery participants could continue fishing for their primary species, although with additional management restrictions as proscribed by NOAA Fisheries during the course of a fishing year.

#### **3.2.2.7 Benefits of Increased Incidental Catch Species Allocations**

Increasing CDQ allocation amounts for incidental catch species, as considered under Suboptions 2.2 through 2.5 could increase the benefits accruing to CDQ Program participants as described in Section 3.2.2.5.

An indirect benefit of increasing the allocations of target species and associated incidental catch species to the CDQ Program is that CDQ groups could use such increases to ensure that they successfully prosecute their more valuable target species, such as Pacific cod, pollock, or sablefish. Most, if not all, of the species under consideration for increased allocations under Component 2 are caught in the other CDQ target fisheries. Historically, CDQ groups have prioritized their fisheries effort based on maximizing the

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<sup>6</sup> In 1999, squid was removed from being a species allocated to the CDQ Program by Amendment 66 to the BSAI FMP. Concern that there would be inadequate squid available to account for the possible catch of squid in the pollock CDQ fishery led the Council and NMFS to remove squid from the CDQ Program.

royalties they receive from a given species. They apportion incidental catch species among their CDQ target fisheries based on historical and anticipated incidental catch needs. If more valuable target fisheries require most or all of the amounts of certain incidental catch species categories, than other CDQ target fisheries such as rock sole or flathead sole still may not be fully prosecuted for lack of adequate amounts of incidental catch species. In other words, any increased percentage amounts of primary and incidental catch species could be used to support the incidental catch needs of CDQ target fisheries not considered under Component 1. Thus, increasing primary and incidental catch species could indirectly benefit the successful prosecution of other CDQ target fisheries.

### **3.2.2.8 Potential Costs to the CDQ Groups of Increased Allocation Amounts**

Although increasing the allocation amounts of primary and incidental catch species to the CDQ Program could benefit CDQ groups via increased royalties and other associated opportunities, increased allocations also could impart some additional costs on CDQ groups. One such cost could include the administrative costs related to negotiating new or amended harvesting and business agreements with the companies that harvest primary target species. CDQ groups would have to update their CDPs to reflect any increased allocations that they might receive, as well as any changes to business plans or CDQ projects. In-season quota management costs also could increase if allocations were increased. CDQ quota managers may have to spend additional time and resources managing increased allocations and arranging inter-CDQ group quota transfers, particularly if the groups increased their annual catch of the target species considered under Amendment 80. Additionally, if requirements for reporting, catch monitoring and enforcement, and observer coverage levels change for the primary target species fisheries due to changes brought about by other components of this action, then CDQ groups might have to adhere to, or partially bear the costs of, such changes. Costs to CDQ groups for the preceding elements cannot be estimated with available information.

However, as a whole, we expect that the potential benefits to the CDQ groups brought about by increasing percentage amounts for primary species under either Option 2.2 or Option 2.3 would outweigh the potential costs discussed above. Increased allocations could provide CDQ groups with both direct monetary benefits and other indirect benefits.

### **3.2.2.9 Impacts of Component 2 on Non-CDQ Industry Components**

Both Options 2.2 and 2.3 would increase the CDQ percentage amounts for primary species. Suboptions 2.2 through 2.5 include a range of increases to the percentage amounts of incidental catch species allocated to the CDQ Program. Selection of either option would correspondingly decrease the amount of each applicable BSAI groundfish TAC allocated to the non-CDQ fishery sectors by either 2.5 percent (Option 2.2) or 5 percent (Option 2.3) of annual TACs. These non-CDQ sectors include both the Non-AFA trawl catcher/processor sector directly considered under this action, and a variety of other BSAI fisheries components. Selection of any suboption other than Suboption 2.1 would decrease the amount of annual TACs for incidental catch species available to non-CDQ fisheries by the corresponding amounts that CDQ percentage amounts were increased.

The non-AFA trawl catcher/processor sector would lose access to a portion of each annual TAC for primary target species, with associated foregone revenues. This sector also could be affected by a decrease in incidental catch species allocations if insufficient amounts of incidental catch species led to earlier directed fishing closures for primary species. Other BSAI fisheries sectors could be adversely affected by increased CDQ sector allocations if the decreased non-CDQ TAC amounts meant that there were diminished opportunities to catch either target species, or if there were inadequate amounts of incidental catch species available to support the complete prosecution of all target species. The affects of decreasing annual TACs for non-CDQ fisheries components cannot be estimated with available information. The following discussion address possible impacts of decreased primary species on the Non-AFA trawl catcher/processors.

### ***Atka mackerel and Pacific Ocean perch***

Because the Atka mackerel TAC has been fully utilized in recent years, increased allocations to the CDQ Program could reduce revenues for the Non-AFA trawl catcher/processor fleet, if that fleet would have otherwise caught the portion of the TAC that would be shifted to an increased CDQ allocation. Historical Atka mackerel and Pacific Ocean perch catch is detailed in Table 3-10 and Table 3-11. The vessels that have historically harvested Atka mackerel are a subset of the Non-AFA Trawl catcher/processor sector vessels. Estimates of the impacts various allocation alternatives would have on the profitability of the companies that own these vessels cannot be generated. Information on the vessels cost structure would be need to make those estimates and that information is not available. However, if it is profitable to harvest Atka mackerel at that level, the profits of these firms could be reduced. This also is applicable to the Pacific Ocean perch fishery, which is caught by the same fleet that fishes for Atka mackerel.

If a cooperative is formed for this fleet as an outcome of Amendment 80, efficiency gains from the cooperative may offset some losses to the Non-AFA trawl catcher/processors. The BSAI pollock fleet has indicated that they have achieved efficiency gains as a result of their cooperatives. While some gains in efficiency in the Atka mackerel and Pacific Ocean perch fishery would be expected under a similar cooperative structure for the H&G trawl fleet, the magnitude of those gains cannot be estimated.

### ***Flathead sole and rock sole***

As with the other primary species, flathead sole and rock sole are species that are either fully utilized or typically have had a high utilization rate in recent years. The annual rock sole catch in 2002, 2003, and 2004 was 90 percent, 95 percent, and 113 percent of the annual TAC limit, respectively. The catch of flathead sole in those years ranged from 71 percent of TAC in 2002 to 101 percent in 2003. Any decreases in the non-CDQ TACs for these species could have similar effects on non-CDQ industry components as described above for Atka mackerel and below for yellowfin sole. Effects could include either a direct decrease in revenues as primary species apportionments decrease or those indirect costs associated with inadequate amounts of incidental catch species to fully support fisheries for primary target fisheries.

### ***Yellowfin sole***

The fishing companies that traditionally harvested yellowfin sole would likely generate less revenue if increased allocations to the CDQ Program were adopted. Since 2002 the non-CDQ TAC for yellowfin sole has been completely caught. In prior years, when the TAC was set at a high level because there was sufficient yellowfin sole biomass, and there was room under the 2 million metric ton harvest cap set for the BSAI, the entire TAC was not harvested. In those years, the proposed increase in CDQ allocations would have little impact on the open access fleet, because the quota could not be utilized anyway. However, given the current, smaller yellowfin sole TACs any increase in the CDQ allocation could reduce the harvests of the open access fleet.

The fleet that potentially would be most harmed are those vessels in the Non-AFA trawl C/P sector, which has traditionally harvested the vast majority of the yellowfin sole TAC. This is the only fleet that has consistently harvested yellowfin sole in a directed fishery. The magnitude of the impact on individual companies in this fleet's financial performance would depend on several factors including, whether they participate in the directed yellowfin sole fishery, the size of the CDQ allocations, the efficiency gains from cooperatives (if they are successfully implemented), changes in market prices for yellowfin sole products, and changes in the overall TAC.

Additionally, although any increases of the yellowfin sole CDQ allocation could adversely impact this fleet's financial performance as a whole, any vessels that partner with CDQ groups to catch yellowfin sole could still realize some benefit from any level of CDQ allocations, either existing or increased. Fishing companies that harvest CDQ are presumed to derive some benefit from harvesting CDQ, even if they must return part of their harvesting proceeds to CDQ groups in the form of royalties.

### 3.2.2.10 Management Costs

Changes in management costs to NOAA Fisheries as a result of increased percentage amounts to the CDQ groups are not expected to be significant. Increases to CDQ Program percentage amounts have been done in the past without significant increases in the time or resources that NOAA Fisheries, Alaska Region has expended on CDQ Program administration, at least in the long term. For example, under the AFA the pollock CDQ allocation increased from 7.5 percent to 10 percent of annual pollock TACs. This led to revisions to catch reporting and monitoring software to reflect the revised allocations, but those were one-time modifications. Similarly, if percentage amounts were increased as proposed under Options 2.2 or 2.3, or under Suboptions 2.2 through 2.5, we expect that Alaska Region staff would have to contribute additional resources to several aspects of program management, including, but is not limited to: working with the State and CDQ groups to ensure that CDQ groups' CDPs are updated to reflect increased allocations and changes to harvesting or business plans; modifying CDQ catch monitoring software and the CDQ catch reporting; and, integrating any other new requirements or changes stemming from other components of Amendment 80 with the overall CDQ Program management regime.

### 3.2.3 Components 3 and 4 – Sector allocation calculation

In order to maximize the success of the cooperative structure proposed in this action, the Non-AFA Trawl CP sector would need its own allocation of the target species. By providing the sector a certain percentage of the allocated species, the race for fish for the sector would be reduced significantly thus reducing sector discards and improve efficiency. Components 3 and 4 provide the method for allocating the primary species to the Non-AFA Trawl CP sector. Specifically, Component 3 provides three different calculation options and Component 4 provides the catch history years used in the calculation. The remaining portion of Components 3 and 4 provide options for managing the allocation to the sectors and addressing ICAs.

Allocation calculations of the ITAC are done on a species-by-species basis and include only legal landings. Option 3.1 would base the allocation on total catch of each allocated species by the Non-AFA Trawl CP sector for a specific set years (defined in Component 4) divided by the total catch of all vessels for the same TAC species using the same set of years (see box below for specific language). Option 3.2 is similar to the previous option but the allocation calculation is based on retained catch of the Non-AFA Trawl CP sector divided by the retained catch of all sectors. Since the percent of the TAC allocated to the Non-AFA Trawl CP sector under this option is relatively large, Suboption 3.2.2 is included to create incidental catch allowances (ICA) of Atka mackerel, flathead sole, AI Pacific Ocean perch, rock sole, and yellowfin sole for the non-head and gut sectors (H&G) to ensure that adequate amounts of these species are available to support expected incidental catches of these species in the general limited access fisheries. The amount necessary for an ICA would be removed prior to the allocation between the Non-AFA Trawl CP sector and the trawl limited access fishery. In addition, the Council in April 2006 clarified that AFA vessel sideboard amounts would be determined after CDQ reserve amounts are removed from TAC but before ICA deductions. Finally, the Council also clarified that the allocations to the Non-AFA Trawl CP sector would be managed as a hard cap.

Option 3.3 is also similar to the previous options but the calculation is based on retained catch of the Non-AFA Trawl CP sector divided by the total catch of all vessels harvesting that species' BSAI TAC.

In June 2005, the Council defined legal landings as fish harvested during the qualifying years specified and landed in compliance with state and federal permitting, landing, and reporting regulations in effect at the time of the landing. Legal landings exclude any test fishing, fishing conducted under an experimental, exploratory, or scientific activity permit or the fishery conducted under the Western Alaska CDQ program.

Component 4 identifies five different year combinations that define the catch history years that would be used in conjunction with Component 3. The sets of years being considered by the Council are 1995-2003

(Option 4.1), 1997-2002 (Option 4.2), 1998-2002 (Option 4.3), 1998-2004 (Option 4.4), 1999-2003 (Option 4.5), and 2000-2004 (Option 4.6).

Option 4.7 would allow the Council to select different allocation percentages for each of the allocated species without having to select an allocation calculation option from Component 3 and year combination option from Component 4. In April 2006, the Council selected allocation percentages for each of the allocated species. For yellowfin sole (82.5%), rock sole (97%), and flathead sole (98%), the Council selected a single percentage, while for Atka mackerel and AI POP, the Council selected an approach that would phase in the allocation over a period of years. For Atka mackerel, the allocation to the Non-AFA Trawl CP sector would start at 98 percent for the first year of the program for subareas EAI/BS and CAI, followed by a 2 percent decline over a four year period to 90 percent. For WAI, the allocation to the Non-AFA Trawl CP sector would be 100 percent. AI POP in EAI and CAI in the first year would be 95 percent and then in the second year the allocation would be reduced to 90 percent. The allocation for WAI POP would be 98 percent.

If the Council selects Option 4.7, the percentage selected by the Council will have to be within the range of alternatives considered in this analysis to provide the necessary information for the Council. If the percentages selected by the Council are within the ranges covered while analyzing the options in Component 3 and the options in Component 4, then no additional analysis will likely be needed.

Component 3 also includes two suboptions that address allocation management. The first suboption would manage the allocation to the Non-AFA Trawl CP sector as a hard cap, and the second suboption would manage the allocation as a soft cap. Hard and soft caps refer to methods of managing the various TAC allocations. In this discussion, hard caps indicate that when the Non-AFA Trawl CP sectors' allocation of a species is harvested, all fisheries that catch that species will be closed to directed fishing. Soft caps, on the other hand, could allow the sector to continue fishing with restrictions placed on the retention of species that have been harvested up to their allocation. A more complete description of hard and soft caps is provided in the analysis of those caps that follows in this section.

Finally, Component 3 includes a suboption that would authorize NOAA Fisheries to rollover any unharvested portion of the allocated species and PSC reserved for the trawl general limited access fishery that is projected to remain unused to the Non-AFA Trawl CP sector. Any rollover of halibut PSC from the general limited access fishery to the Non-AFA Trawl CP sector will be discounted 5 percent. For example, if 100 mt of halibut is projected not to be utilized by the general limited access fishery by August 1, 95 mt of halibut would be available for rollover to the Non-AFA Trawl CP sector.

The Council in February 2006 also provided more specifics on the dates and procedures for rolling over groundfish and PSC. Inseason Management Section shall consider current catch and PSC usage, historic catch and PSC usage, harvest capacity and stated harvest intent in addition to any other relevant information on or before May 1 and August 1 and any time after August 1 as deemed appropriate by Inseason Management to determine the appropriate rollover amounts. In addition, the Council included an option for rolling back groundfish and PSC from the Non-AFA Trawl CP sector to the trawl general limited access fishery.

The remaining portion of this section discusses the impacts of the many different allocation calculations combined with the different catch history options. Also include in this section is a discussion on the impacts of the different suboptions that are under consideration in Component 3.

**Component 3** Identifies the sector allocation calculation (after deductions for CDQs, ICAs, and other existing fishery allocations, i.e., Atka mackerel jig) for the Non-AFA Trawl CP sector. Atka mackerel and Aleutian Islands Pacific Ocean perch allocations will be calculated for individual subareas and all subareas combined (541/EBS, 542, and 543). The remaining portion of the primary species TAC included in this program would be allocated to the BSAI trawl limited access fishery.

For purpose of allocation to the Non-AFA Trawl CP sector, each primary species allocation is based upon the years and percentage of catch history selected in Component 4 using one of the following:

Option 3.1 Total legal catch of the sector over total legal catch by all sectors

Suboption 3.1.1 An ICA would be taken off the top to accommodate incidental bycatch that applies only to fixed gears.

Option 3.2 Retained legal catch of the sector over retained legal catch by all sectors

**\*Suboption 3.2.2 Allocations would be managed as a hard cap for the H&G sector, and for the Non H&G sector, an ICA would be taken off the top to accommodate incidental bycatch by the non-H&G sector. AFA vessel sideboard amounts will be determined after CDQ reserve amounts are deducted from TAC.**

Option 3.3 Retained legal catch of the sector over total catch by all sectors

**\*For purpose of allocation to the Non-AFA Trawl CP sector, each primary species allocation is:**

**Yellowfin sole 82.5%**

**Rock sole 97%**

**Flathead sole 98%**

**Atka Mackerel 98% in 541/BS and 542 in the first year of the program, decreasing by 2% over a 4-year period to 90%. 100% in 543.**

**AI POP 95% in 541 and 542 in the first year of the program, decreasing to 90% in the second year of the program. 98% in 543.**

**Legal landing means, for the purpose of initial allocation of QS, fish harvested during the qualifying years specified and landed in compliance with state and federal permitting, landing, and reporting regulations in effect at the time of the landing. Legal landings exclude any test fishing, fishing conducted under an experimental, exploratory, or scientific activity permit or the fishery conducted under the Western Alaska CDQ program.**

Option 3.4 Management of groundfish allocations

Suboption 3.4.1 Allocations would be managed as a hard cap. When the allocation is reached, further fishing would be prohibited.

Suboption 3.4.2 Allocations would be managed as a soft cap. When the allocation is reached, species would be prohibited status.

**\*Option 3.5 This option may be selected in conjunction with Options 3.1 through 3.4. Target species and PSC rollover: any unharvested portion of the Amendment 80 target species or unharvested portion of PSC in the limited access fishery that is projected to remain unused shall be rolled over to vessels that are members of Amendment 80 cooperatives.**

**Any roll over of halibut PSC to the Non-AFA Trawl CP sector shall be discounted by 5%. That is, if 100 mt of halibut is available for roll over, then 95 mt of halibut would be re-allocated to the Non-AFA Trawl CP sector. Once the initial allocation has been determined, the Non-AFA Trawl CP sector may re-allocate the PSC among the target species.**

**NMFS shall perform a review on or before May 1 and August 1 each year, and at such other times after August 1 as it deems appropriate. In making its determination, NMFS shall consider current catch and PSC usage, historic catch and PSC usage, harvest capacity and stated harvest intent, as well as other relevant information.**

<b>Component 4</b>	Catch history years used to determine the allocation to the Non-AFA Trawl CP sector in Component 3.
*Option 4.1	1995-2003
Option 4.2	1997-2002
Option 4.3	1998-2002
*Option 4.4	1998-2004
Option 4.5	1999-2003
*Option 4.6	2000-2004
*Option 4.7	The Council can select percentages for each of the species allocated to the Non-AFA Trawl CP sector.

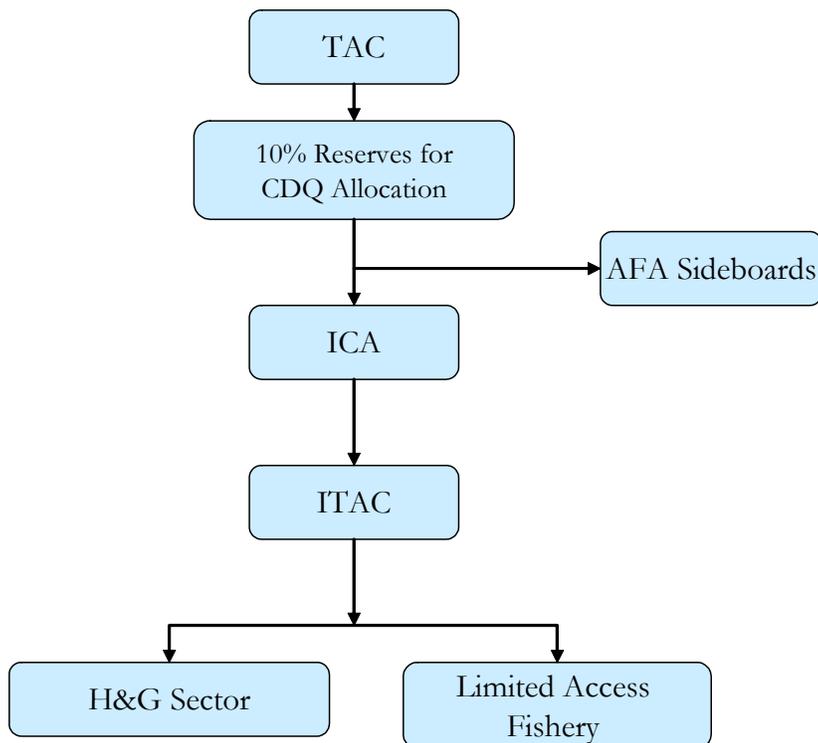
### 3.2.3.1 Annual TAC Deductions

In February 2006, the Council requested staff to provide a description of the annual deductions from TAC under the proposed action. Figure 3-3 provides a graphical representation of the annual deductions from TAC for the allocated species for yellowfin sole, rock sole, flathead sole, AI POP, and Atka mackerel. In April 2006, the Council clarified that the nonspecified reserve for yellowfin sole, rock sole, flathead sole, Atka mackerel and AI POP would be reduced to 10 percent under the proposed action. The Council also clarified that unspecified reserve is intended to fund the CDQ group allocation which the Council has selected as 10 percent for the preliminary preferred alternative. Currently, NOAA Fisheries annually deducts 15 percent of the BSAI TAC for each target species (except pollock and the hook-and-line and pot gear allocations for sablefish) for a reserve. The remaining portion of TAC, often called ITAC, is allotted for directed fishing. The reserve is not designated by species or species group and any amount of the reserve may be apportioned to a target species (except the hook-and-line gear and pot gear allocation for sablefish or the “other species” category) as long it does not result in overfishing. One half of the unspecific reserve is apportioned to the CDQ groups, which for the allocated species is 7.5 percent. In recent years, NOAA Fisheries has released some of the remaining unspecified reserve at the beginning of the year to supplement specific fisheries in the BSAI because U.S. fishing vessels have demonstrated the capacity to catch the full TAC allocations. The remaining unspecified reserve is released to the flatfish fisheries later in the fishing year.

After removal of the reserves, the only other deduction from TAC under the proposed action would be an ICA. NOAA Fisheries would deduct an amount necessary to accommodate an ICA for the fixed-gear sectors and the trawl limited access fishery if their allocations cannot account for projected incidental catch of the Amendment 80 species. For more information on ICA amounts, refer to the ICA Suboption analysis in 3.2.3.4.

The Council in April 2006 clarified that AFA sideboards would be calculated after the 10 percent reserves for the CDQ group has been deducted. Despite the allocation of the Amendment 80 species to the Non-AFA Trawl CP sector, the Council clarified that AFA CP and CV sideboards will remain in place to prevent the AFA sectors from exceeding their historical catch history prior to the implementation of the AFA. Note, depending on the allocation to the trawl limited access fishery, the sideboards for some of the Amendment 80 species will be greater than the allocation. For example, since the combined yellowfin sideboards for the AFA sectors is 29 percent, any allocation of yellowfin sole less than 29 percent will result in sideboards amounts greater than the allocation. In some cases, the AFA CP sideboard would be greater than the allocation to the trawl limited access fishery. In some cases, the AFA CP sideboards could exceed the allocation to the trawl limited access fishery.

**Figure 3-3 Annual deductions from TAC and allocation of ITAC between the Non-AFA Trawl CP sector and the trawl limited access fishery**



### 3.2.3.2 Allocation Options for the Non-AFA Trawl CP Sector

Table 3-32 shows the BSAI wide percentage of each species that would be allocated to the Non-AFA Trawl CP sector using the three different allocation calculations and six different year combinations. In February 2006, the Council expanded the allocation options for Atka mackerel and AI POP to include allocations based on catch history of all subareas combined and catch history of individual subareas. Table 3-32 provides the aggregate allocation percentages based on sector's catch history in all AI subareas and BS combined.<sup>7</sup> Table 3-33 provides the allocation percentages for each subarea based on the sector's catch history in that subarea. Multiplying those percentages by the 2005 TAC (after deductions of the 15 percent reserves), for each species, provides an estimate of the amount of each species that would be allocated to the Non-AFA Trawl CP sector under those options. For comparison purposes, the tables also include the average catch of the sector during each set of qualifying years. The table does not include an estimated value of the allocation. Determining the value of the allocation amount with any degree of confidence is not possible since prices fluctuate.

Looking at the differences in the percentages and estimated allocation amounts using the 2005 TAC for the different qualifying year options for each of the species can provide some measure of the impacts. In general allocations based on retained catch of the sector divided by all retained catch are the largest allocations based on retained catch of the sector divided by total catch of all sectors are the smallest. Including catch from the AFA-9 vessels in the allocation to the Non-AFA Trawl CP sector reduces their allocation, while removing the catch from these vessels in the allocation calculations entirely increases

<sup>7</sup> Aleutian Islands subareas are Eastern Aleutian Islands (541), Central Aleutian Islands (542), Western Aleutian Islands (543). For Atka mackerel, the Eastern Aleutian Islands is combined with the Bering Sea.

the allocation to the Non-AFA Trawl CP sector. For the Atka mackerel fishery aggregated across subareas, allocations ranged between 80 percent in each subarea for Option 3.3 (retained/total) using years 1995-2003 with AFA 9 catch included and nearly 100 percent in each subarea for Option 3.2 (retained/retained) using years 2000-2004. Allocations of Atka mackerel in each of the Aleutian Islands subareas using the 2005 TAC would have ranged between 5,100 mt and 6,375 for Eastern Aleutian Islands and Bering Sea, 24,140 mt and 30,175 for Central Aleutian Islands, and 13,600 mt and 17,000 mt for the Western Aleutian Islands. In contrast, allocations of Atka mackerel based on the sector's catch history in each of the subareas would yield between 75 percent and 99.8 percent for the Non-AFA Trawl CP sector in the Eastern Aleutian Islands/Bering Sea subarea, between 75 percent and 100 percent for the Central Aleutian Islands subarea, and 80 percent to 99.9 percent for the Western Aleutian Islands subarea. Using 2005 TAC (after deducting 15 percent reserve), these allocations would have ranged between 4,768 mt to 6,362 mt for the Eastern Aleutian Islands/Bering Sea, 22,722 mt to 30,175 mt for the Central Aleutian Islands, and 13,651 to 16,983 for the Western Aleutian Islands.

Allocations in the flathead sole fishery ranged from 62 percent for Option 3.3 (retained/total) using years 1995-2003 with AFA 9 catch included to over 98 percent for Option 3.2 (retained/retained) using years 2000-2004. At the 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 10,342 mt and 16,210 mt.

**Table 3-32 Percent of the Amendment 80 species allocated to the Non-AFA Trawl CP sector with and without AFA 9 catch data**

Years	Average Annual Retained Catch of Sector	Average Annual Total Catch of Sector	Retained/Retained		Total/Total		Retain/Total	
			With AFA-9	Without AFA-9	With AFA-9	Without AFA-9	With AFA-9	Without AFA-9
Atka Mackerel (2005 ITAC was 6,375 mt EAI/BS, 30,175 mt CAI, & 17,000 mt WAI)								
1995-2003	45,236	52,391	91.9%	98.1%	92.2%	97.7%	79.6%	84.3%
1997-2002	39,924	44,608	92.5%	98.2%	92.7%	97.9%	83.0%	87.6%
1998-2002	39,440	43,899	96.1%	99.7%	96.1%	99.3%	86.3%	89.2%
1998-2004	39,551	46,051	97.1%	99.7%	96.5%	98.7%	82.9%	84.8%
1999-2003	39,009	44,965	99.6%	99.6%	99.0%	99.0%	85.9%	85.9%
2000-2004	38,547	46,055	99.8%	99.8%	98.6%	98.6%	82.5%	82.5%
Flathead Sole (2005 ITAC was 16,575 mt)								
1995-2003	10,584	13,701	96.5%	96.7%	80.8%	81.7%	62.4%	63.1%
1997-2002	11,888	15,140	96.5%	96.7%	82.8%	83.3%	65.0%	65.4%
1998-2002	12,245	15,289	96.8%	96.8%	84.3%	84.6%	67.5%	67.7%
1998-2004	11,595	14,639	97.4%	97.4%	84.5%	84.7%	67.0%	67.1%
1999-2003	10,969	13,632	97.3%	97.3%	83.9%	83.9%	67.5%	67.5%
2000-2004	10,806	13,689	97.8%	97.8%	84.0%	84.0%	66.3%	66.3%
AI Pacific Ocean Perch (2005 ITAC was 2,618 mt EAI, 2,580 mt CAI, & 4,322 mt WAI)								
1995-2003	8,444	9,766	99.0%	99.0%	98.4%	98.7%	85.1%	85.4%
1997-2002	8,195	9,283	99.9%	99.9%	99.5%	99.7%	87.8%	88.0%
1998-2002	7,769	8,828	100.0%	100.0%	99.7%	99.7%	87.8%	87.8%
1998-2004	8,119	9,406	99.3%	99.3%	99.1%	99.1%	85.5%	85.5%
1999-2003	8,193	9,492	99.1%	99.1%	98.9%	98.9%	85.4%	85.4%
2000-2004	7,911	9,307	99.0%	99.0%	98.9%	98.9%	84.0%	84.0%
Rock Sole (2005 ITAC was 32,275 mt)								
1995-2003	13,020	29,149	93.9%	94.8%	82.0%	82.9%	36.6%	37.0%
1997-2002	13,133	29,616	93.9%	94.7%	83.7%	84.2%	37.1%	37.3%
1998-2002	11,875	27,132	95.4%	95.4%	85.4%	85.5%	37.4%	37.4%
1998-2004	13,347	28,858	96.6%	96.6%	87.5%	87.6%	40.5%	40.5%
1999-2003	12,684	27,988	96.4%	96.4%	87.8%	87.8%	39.8%	39.8%
2000-2004	14,838	30,682	96.9%	96.9%	89.6%	89.6%	43.3%	43.3%

Years	Average Annual Retained Catch of Sector	Average Annual Total Catch of Sector	Retained/Retained		Total/Total		Retain/Total	
			With AFA-9	Without AFA-9	With AFA-9	Without AFA-9	With AFA-9	Without AFA-9
Yellowfin Sole (2005 ITAC was 77,083 mt)								
1995-2003	51,892	67,536	78.1%	79.9%	76.2%	77.9%	58.6%	59.8%
1997-2002	52,940	67,782	82.6%	83.8%	80.8%	82.0%	63.1%	64.0%
1998-2002	45,501	59,042	88.5%	88.5%	85.9%	85.9%	66.2%	66.2%
1998-2004	47,547	60,221	90.4%	90.4%	88.1%	88.1%	69.6%	69.6%
1999-2003	45,621	57,453	91.2%	91.2%	89.7%	89.7%	71.2%	71.2%
2000-2004	48,683	60,170	93.2%	93.2%	91.7%	91.7%	74.2%	74.2%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports. Allocation percentages using WPR and blend data combined are in Appendix 2.

**Table 3-33 Percent of Atka mackerel and AI POP allocated to the Non-AFA Trawl CP sector with and without AFA 9 catch data**

Years	Average Annual Retained Catch of Sector	Average Annual Total Catch of Sectors	Retain/Retain		Total/Total		Retained/Total	
			With AFA-9	Without AFA-9	With AFA-9	Without AFA-9	With AFA-9	Without AFA-9
<b>Eastern Aleutian Islands and Bering Sea Atka Mackerel (2005 TAC was 6,375)</b>								
1995-2003	11,177	12,586	99.8%	99.8%	97.8%	97.9%	86.9%	86.9%
1997-2002	10,180	10,871	99.8%	99.8%	98.7%	98.7%	92.4%	92.5%
1998-2002	9,333	9,998	99.8%	99.8%	98.5%	98.5%	91.9%	92.0%
1998-2004	8,065	9,520	99.3%	99.3%	95.2%	95.2%	80.6%	80.7%
1999-2003	8,665	9,583	99.6%	99.6%	97.0%	97.0%	87.7%	87.7%
2000-2004	6,654	8,297	98.8%	98.8%	93.3%	93.3%	74.8%	74.8%
<b>Central Aleutian Islands Atka Mackerel (2005 TAC was 30,175)</b>								
1995-2003	18,408	21,728	87.4%	95.8%	88.9%	96.2%	75.3%	81.5%
1997-2002	15,596	18,004	88.8%	95.6%	89.9%	96.0%	77.8%	83.1%
1998-2002	16,920	19,515	96.4%	99.4%	96.7%	99.3%	83.8%	86.1%
1998-2004	18,018	21,093	97.6%	99.6%	97.8%	99.5%	83.5%	85.0%
1999-2003	17,797	21,014	99.5%	99.5%	99.4%	99.4%	84.2%	84.2%
2000-2004	19,241	22,744	100.0%	100.0%	99.9%	99.9%	84.5%	84.5%
<b>Western Aleutian Islands Atka Mackerel (2005 TAC was 17,000)</b>								
1995-2003	15,472	17,886	92.2%	99.7%	92.8%	99.6%	80.3%	86.1%
1997-2002	14,149	15,733	91.8%	99.9%	92.3%	99.9%	83.0%	89.8%
1998-2002	13,187	14,385	93.2%	99.9%	93.7%	99.8%	85.9%	91.5%
1998-2004	13,040	14,986	95.0%	99.9%	95.6%	99.9%	83.2%	86.9%
1999-2003	12,222	14,023	99.9%	99.9%	99.8%	99.8%	87.0%	87.0%
2000-2004	12,053	14,380	99.9%	99.9%	99.8%	99.8%	83.7%	83.7%
<b>Eastern Aleutian Islands Pacific Ocean Perch (2005 TAC was 2,618)</b>								
1995-2003	2,578	2,858	98.9%	99.0%	98.0%	98.3%	88.4%	88.7%
1997-2002	2,013	2,209	99.7%	99.8%	98.9%	99.2%	90.1%	90.4%
1998-2002	1,901	2,112	100.0%	100.0%	99.4%	99.4%	89.5%	89.5%
1998-2004	2,112	2,343	100.0%	100.0%	99.2%	99.2%	89.4%	89.4%
1999-2003	2,201	2,462	100.0%	100.0%	99.3%	99.3%	88.8%	88.8%
2000-2004	2,186	2,447	100.0%	100.0%	99.1%	99.1%	88.6%	88.6%

Years	Average Annual Retained Catch of Sector	Average Annual Total Catch of Sectors	Retain/Retain		Total/Total		Retained/Total	
			With AFA-9	Without AFA-9	With AFA-9	Without AFA-9	With AFA-9	Without AFA-9
<b>Central Aleutian Islands Pacific Ocean Perch (2005 TAC was 2,580)</b>								
1995-2003	2,049	2,469	99.9%	99.9%	99.1%	99.7%	82.3%	82.7%
1997-2002	2,133	2,459	99.9%	99.9%	99.6%	99.8%	86.4%	86.6%
1998-2002	2,085	2,417	100.0%	100.0%	99.9%	99.9%	86.2%	86.2%
1998-2004	2,092	2,489	100.0%	100.0%	99.9%	99.9%	84.0%	84.0%
1999-2003	2,031	2,432	100.0%	100.0%	99.9%	99.9%	83.5%	83.5%
2000-2004	2,033	2,482	100.0%	100.0%	100.0%	100.0%	81.9%	81.9%
<b>Western Aleutian Islands Pacific Ocean Perch (2005 TAC was 4,322)</b>								
1995-2003	3,810	4,426	98.6%	98.6%	98.5%	98.6%	84.8%	84.9%
1997-2002	4,049	4,615	100.0%	100.0%	99.9%	100.0%	87.7%	87.7%
1998-2002	3,783	4,300	100.0%	100.0%	100.0%	100.0%	88.0%	88.0%
1998-2004	3,902	4,550	98.6%	98.6%	98.7%	98.7%	84.7%	84.7%
1999-2003	3,947	4,575	98.1%	98.1%	98.2%	98.2%	84.8%	84.8%
2000-2004	3,672	4,345	98.0%	98.0%	98.2%	98.2%	83.0%	83.0%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports. Allocation percentages using WPR and blend data combined are in Appendix 2.

In the Pacific Ocean perch fishery, allocations in Table 3-32 ranged between 84 percent for Option 3.3 (retained/total) using years 2000-2003 with AFA 9 catch included and 100 percent for Option 3.2 (retained/retained) using years 1998-2002 for all three subareas. Table 3-33 provides the allocation amounts in each subarea based on the sector's catch history in that subarea. Since the allocation percentages for each option vary little across the different qualifying year options using retain/retain or total/total calculations for Pacific Ocean perch, the allocation amounts will be very similar for each allocation option regardless of the qualifying years selected. For example, at the 2005 TAC for Pacific Ocean perch, allocation amounts for an option (e.g., retained/retained) would vary by less than 500 mt across all year combinations.

Allocations in the rock sole fishery ranged between 37 percent for Option 3.3 (retained/total) using year 1995-2003 with AFA 9 catch included and almost 97 percent for Option 3.2 (retained/retained) using years 2000-2004. Based on the TAC, estimated allocation amounts for the rock sole fishery range between 11,813 mt and 31,274 mt.

In the yellowfin sole fishery, estimated allocations ranged between 59 percent for Option 3.3 (retained/total) using years 1995-2003 with AFA 9 catch included and 93 percent for Option 3.2 (retained/retained) using years 2000-2004. Estimated allocations of yellowfin sole, using the 2005 TAC, range between 45,171 mt and 71,841 mt.

### **Option 3.1**

Option 3.1 would allocate the species noted in Component 1 based on the total catch by the Non-AFA Trawl CP sector of each allocated species for a specific set of years relative to total catch of that same species and same year combination for all other sectors combined. Total catch includes both retained catch and discarded catch. For nearly all of the allocated species, sector allocation percentages increased as the catch history years narrowed to include only more recent years. Below is a brief description of the allocation percentages for each of the allocation species, an estimate of allocation amounts to the Non-AFA Trawl CP sector (by applying those percentages to the 2005 TAC). Note that actual allocation amounts will likely vary across time since biomass estimates fluctuate from year-to-year. The percentage of the TAC that is allocated to the Non-AFA Trawl CP sector would remain constant.

In the Atka mackerel fishery where allocations percents are equal across all Aleutian Islands subarea, allocations ranged between 92 percent for the years 1995-2003 with AFA 9 catch included and 99 percent for years 1999-2003. Estimated allocations of Atka mackerel based on the 2005 TAC range between 5,865 mt and 6,311 mt for EAI/BS, 27,761 mt and 29,873 mt for CAI, and 15,640 mt and 16,830 mt in WAI. Allocations based on catch history in subarea using retain/retain would yield between 98.8 percent and 99.8 percent for the Eastern Aleutian Islands/Bering Sea, 87.4 percent and 99.8 percent for Central Aleutian Islands, and 91.8 percent and 99.9 percent for Western Aleutian Islands.

Allocations in the flathead sole fishery ranged between 81 percent for years 1995 to 2003 with AFA 9 catch included and 85 percent for years 1998-2004. Using the 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 13,393 mt for 1995-2003 and 14,006 mt for 1998-2004.

In the Pacific Ocean perch fishery, allocations ranged between 98 percent for the years 1995-2003 with AFA 9 catch included and 99 percent for 1998-2002. Since the allocation percentages vary little across the different qualifying year options for Pacific Ocean perch, the allocation amounts will be virtually the same regardless of the qualifying years selected.

Allocations in the rock sole fishery ranged between 82 percent for 1995 to 2003 with AFA 9 catch included and 90 percent for 2000-2004. For example, using the 2005 TAC, allocation amounts would have ranged between 26,466 mt (using 1995-2003) and 28,918 mt (using 2000-2004).

In the yellowfin sole fishery, allocations ranged between 76 percent for 1995-2003 with AFA 9 catch included and 92 percent for 2000-2004. Allocations of yellowfin sole using 2005 TAC would have ranged between 58,737 mt (for 1995-2003) and 70,685 mt (for 2000-2004).

### **Option 3.2**

This option would allocate the species listed in Component 1 based on the retained catch by the Non-AFA Trawl CP sector for the allocated species for a select set of years relative to the retained catch of that same species and set of years by all other sectors combined. This allocation calculation results in larger allocations for the Non-AFA Trawl CP sector for all species, in most options using various sets of years, than either Option 3.1 (total/total) or 3.3 (retained/total). The relatively higher percentages occur under this option because the Non-AFA Trawl CP sector historically has retained a greater percentage of the “allocated species” than other sectors. This greater retention is likely a reflection of greater participation in the directed fisheries for these species by the Non-AFA Trawl CP sector. Below is a brief description of the allocation percentages for each of the allocation species and estimates of allocation amounts, in metric tons, based on the 2005 TAC.

In the Atka mackerel fishery where allocation percents would be equal in each subarea, allocations ranged between 92 percent for the years 1995-2003 with AFA 9 catch included and nearly 100 percent for years 2000-2004. Allocations of Atka mackerel in metric tons using the 2005 TAC between 5,865 mt and 6,375 mt for EAI/BS, 27,761 mt and 30,175 mt for CAI, and 15,640 mt and 17,000 mt for WAI. Allocations based on catch history in each subarea range from 93.3 percent to 98.7 percent for the Eastern Aleutian Islands/Bering Sea, 88.9 percent to 99.9 percent for Central Aleutian Islands, and 92.8 percent to 99.8 percent for Western Aleutian Islands.

Allocations in the flathead sole fishery range from 97 percent (using 1995 to 2003 catch history and AFA 9 catch) and approximately 98 percent for years 2000-2004. Based on the 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 16,028 mt (for the 1995-2003) and 16,210 mt (for 2000-2004).

In the Pacific Ocean perch fishery, allocations range between 98 percent to 100 percent for all year combinations and subarea allocation options.

Allocations in the rock sole fishery ranged from 94 percent (using 1995-2003 and 1997-2002 year periods and AFA 9 catch) and 97 percent (using 1998-2004 and 2000-2004 year periods). Allocation amounts for

the rock sole fishery using the 2005 TAC range between 30,306 mt (for 1995-2003 and 1997-2002) and 31,274 mt (for 2000-2004).

In the yellowfin sole fishery, allocations ranged from 78 percent (using the 1995-2003 catch history and including AFA 9 catch history) and 93 percent (using 2000-2004 catch history). Allocations of yellowfin sole using the 2005 TAC would have ranged between 60,202 mt (for 1995-2003) and 71,841 mt (for 2000-2003).

### **Option 3.3**

This option would allocate the primary species noted in Component 1 based on the retained catch by the Non-AFA Trawl CP sector of the allocated species for a specific set of years relative to total catch of the same species and years by all other sectors combined. Some may question the fairness of this method of determining an allocation since the Non-AFA Trawl CP sector is credited only for its retained catch in the calculation (the numerator), while all other participants are effectively credited with both retained catch and discards (i.e., the denominator uses total catch, including both retained catch and discards). The relatively low allocation percentages (in comparison to Options 3.1 and 3.2) under the different catch history year combinations reflect this weighting, ranging from 30 percent for the rock sole fishery to 82 percent for the Pacific Ocean perch fishery.

Below is a brief description of the allocation percentages for each the allocated species. The average TAC from 1999 to 2003 was selected because it is thought to be a reasonable estimation of the future TAC in these fisheries. Note that actual allocation amounts will likely vary across time since biomass and market conditions can fluctuate from year-to-year. However, the percentage of the TAC that is allocated to the Non-AFA Trawl CP sector would remain constant. This summary of the allocations is followed by a brief discussion of some potential effects of the allocations under this option.

In the Atka mackerel fishery, where allocation percentages are equal across subareas, the percentages ranged between 80 percent for the years 1995-2003 with AFA catch included and 86 percent for years 1998-2002 and 1999-2003. Using the 2005 TAC, allocation amounts for Atka mackerel would have ranged between 5,100 mt and 5,483 mt for EAI/BS, 24,140 mt and 25,951 mt for CAI, and 13,600 mt and 14,620 mt for WAI. For catch history based allocations by subarea area, the percentage ranged from 74.8 percent and 92.4 percent for Eastern Aleutian Islands/Bering Sea, 75.3 percent and 84.5 percent for Central Aleutian Islands, and 80.3 percent and 91.5 percent for Western Aleutian Islands.

Allocations in the flathead sole fishery ranged between 62.4 percent using years 1995-2003 with AFA 9 catch included and 68 percent using years 1998-2002 and 1999-2003. Using the 2005 TAC, the flathead sole allocation would have ranged between 10,343 mt using years 1995-2003 and 11,188 mt using years 1998-2002 and 1999-2003.

In the Pacific Ocean Perch fishery, allocations ranged between 84 percent using years 2000-2004 and 88 percent using years 1997-2002 and 1998-2002. Using the 2005 TAC, allocation amounts for the Pacific Ocean perch fishery would have ranged between 2,199 mt and 2,304 mt in EAI, 2,167 mt and 2,270 mt in CAI, and 3,630 mt and 3,803 mt in WAI. For catch history based allocations by subarea area, the percentage ranged from 88.4 percent and 90.1 percent for Eastern Aleutian Islands, 81.9 percent and 86.6 percent for Central Aleutian Islands, and 83 percent and 88 percent for Western Aleutian Islands.

Allocations in the rock sole fishery ranged between 37 percent using the 1995 to 2003 catch history years with AFA 9 catch included and 43 percent using the 2000-2004 catch history years. Using the 2005 TAC, allocation amounts for the rock sole fishery would have ranged between 11,813 mt for the 1995-2003 catch history years and 13,975 mt for the 2000-2004 catch history years.

In the yellowfin sole fishery, allocations ranged between 59 percent using the 1995-2003 catch history years with AFA 9 catch included and 74 percent using the 2000-2004 catch history years. Using the 2005 TAC, allocations of yellowfin sole would have ranged between 45,171 mt for 1995-2003 catch history years and 57,196 mt using the 2000-2004 catch history years.

In general, the Non-AFA Trawl CP sector participates in multi-species fisheries for Pacific cod, rock sole, yellowfin sole, and other flatfish including flathead sole. These fisheries are characterized by high levels of catch of the primary target with incidental catch of several other species. Basing an allocation on the retained catch of the Non-AFA Trawl CP sector divided by total catch of all sectors could result in a relatively small allocation of rock sole to the Non-AFA Trawl CP sector. Under certain cooperative formation options, the difficulty that NOAA Fisheries could have managing this small allocation for the sector's limited access fishery could disadvantage some sector members in cooperative negotiations. Specifically, if the program requires 75 percent of eligible sector members to form a cooperative, only a single cooperative could form with non-members left to fish in the sector's limited access fishery. If the sector receives a relatively small allocation of rock sole, and the limited access participants have relatively little directed rock sole history, it is possible that the limited access fishery could receive a very small allocation of rock sole that limits the ability of participants in the limited access fishery to prosecute other directed fisheries, particularly, if the limited access fishery experiences high incidental catch rates of rock sole. If the program has a relatively low threshold for cooperative formation (e.g., 15 percent of eligible sector members), the concern is less severe, since a person would have more options to join (or form) a cooperative. In a system that allows multiple cooperatives to form, a person could negotiate with several cooperatives, decreasing the importance of the limited access opportunity.

In addition, selecting this option could leave large amounts of some species unutilized unless catch of vessels in the general limited access increases substantially from recent years. Under Component 3, the portion of the primary species TAC remaining after the allocation to the Non-AFA Trawl CP sector will support the general limited access fishery for vessels other than Non-AFA Trawl CPs. In recent years, the vessels eligible for the general limited access (AFA CPs, AFA Catcher Vessels, and Non-AFA Trawl CVs) have made few catches in these fisheries. In addition, the two AFA sectors eligible for the general limited access are constrained by sideboards for all of the Amendment 80 species (see Table 3-31). These sideboards constrain the general limited access eligible vessels with the greatest historic participation in those fisheries. As a result, absent a substantial increase in catch by Non-AFA Trawl CVs, a substantial portion of the general limited access allocation could be left unharvested (see Limited Access Fishery discussion for more details).<sup>8</sup>

### 3.2.3.3 Hard and Soft Caps

This component includes two suboptions that address how allocations to the Non-AFA Trawl CP sector will be managed. Since the action under consideration is to develop a cooperative program for the sector, all allocation management discussions will be at the cooperative level. In addition, it should be understood that both direct and incidental catch of the allocated species would be deducted from the allocation. The first suboption would manage the allocation as a hard cap. Under a hard cap, when a cooperative (or the limited access fishery) has harvested its entire allocation of an allocated species, the cooperative (or limited access fishery) would be restricted from all directed fishing for that species, as well as all directed fisheries that incidentally harvest the species. The second suboption would manage the allocations as a soft cap. NOAA Fisheries would manage soft caps, limiting fishing by participants through directed fishing closures. The analysis in this section describes the inconsistency between soft cap management and cooperative management. Application of soft caps in a limited access fishery is consistent with current limited access management. Under such a system, the directed fishery for a species is closed when direct catch of a species by the limited access fishery is likely to constrain the catch in other directed fisheries. When the entire allocation of the species is harvested that species would be put on prohibited status, under which all catch of the species is required to be discarded.

A general discussion of hard and soft caps is provided below. Included in the discussion is an overview of the current management system for the allocated species. Much of the following discussion originated

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<sup>8</sup> The potential for a rollover provision to lead to the harvest of this portion of the TAC is discussed below.

from a March 14, 2005 paper written by Andy Smoker addressing hard and soft caps. Other portions of the discussion also came from the April 2005 discussion paper on BSAI Pacific cod allocation written by Nicole Kimball.

### **Current management system**

The general model for management of most groundfish species categories includes both soft and hard caps. Three primary values are associated with inseason management of any particular species. In declining amount they are: the over fishing level, the acceptable biological catch (ABC), and the total allowable catch (TAC), (which may be equal to the ABC). In addition, NOAA Fisheries may also set two additional values, the directed fishing allowance and the incidental catch allowance. These are the basic benchmarks that are employed to govern catch to prevent overfishing of a species.

This proposed action would allocate to the Non-AFA Trawl CP sector Atka mackerel, Aleutian Islands Pacific Ocean perch, flathead sole, rock sole, and yellowfin sole. Under the current limited access management, NOAA Fisheries credits both directed harvest and the incidental harvest of these species against the TAC to prevent overharvests. Directed fishing is allowed until the direct fishing allowance is reached, if one is set, or until the amount of catch approaches an amount that leaves a reserve from the TAC that is adequate to support incidental catch in other groundfish fisheries. After a directed fishery is closed, NOAA Fisheries allows vessels to retain incidental catch of a species taken in other directed fisheries until the TAC is taken. Incidental catch retention, however, is limited to the maximum retainable amount (MRA), which is a percentage of the catch of directed species catch.<sup>9</sup> Catch of a species in excess of its MRA must be discarded. If the TAC for a species is reached, NOAA Fisheries issues a prohibition on retention for that species and all of its catch must be discarded. If the ABC of a species is reached and the harvest is approaching the overfishing level, NOAA Fisheries will consider closing other target fisheries that incidentally harvest the species to prevent overfishing.

The fisheries for the allocated flatfish are often constrained by halibut PSC. NOAA Fisheries retains the flexibility to manage these species using directed fishing allowances and incidental catch allowances to balance direct fishing and incidental catch, if the agency determines that the TAC will be reached during the season. These tools allow NOAA Fisheries the flexibility to manage the directed fishery for the species, while at the same time ensuring other directed trawl fisheries will have adequate incidental catch available to continue fishing. This management system is commonly referred to as a soft cap system because incidental catch of a species does not shut down other groundfish target fisheries unless the overall catch of the species approaches the overfishing level.

In any case, management of allocations would take place at the cooperative and sector limited access level, not at the overall sector level. Under this system, if a cooperative reaches or exceeds its cap, other cooperatives (and the sector's limited access fishery) would be unaffected. Similarly, if the sector's limited access fishery reaches or exceeds its cap, the fishing of cooperatives would be unaffected. Compartmentalizing responsibility in this manner is the only way that rationalization benefits can be ensured for participants that are willing and able to assume the responsibility for cooperative management of their allocations.

### **Suboption 1 - Hard caps**

Suboption 1 would manage the Non-AFA Trawl CP sector's allocation as a hard cap. Under the program, participants in the sector have the option of participating in a cooperative or in the sector's limited access fishery. To address these different circumstances, this section first addresses the application of hard caps to cooperative allocations, then the application of hard caps to the limited access fishery.

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<sup>9</sup> Items 10 and 11 in the tables at <http://www.fakr.noaa.gov/rr/tables.htm> give the percentage of a species taken as incidental catch that may be retained relative to the amount of the target species retained.

Under a hard cap, when a cooperative's allocation of one species is fully harvested, all directed fishing for that species closes, as well as any directed fisheries in which the species would be caught incidentally. Currently, the CDQ program uses and the future Central Gulf of Alaska rockfish demonstration program will use hard cap management. In the CDQ program, hard caps on incidental catch species (e.g., squid and some rockfish species) have at times constrained directed fishing. In all cases, however, the constraining species was caught only incidentally (i.e., no directed fishing has occurred for squid or the constraining rockfish species). No species that is allocated to the Non-AFA Trawl CP sector is strictly an incidental catch species. As a result, the constraint of a hard cap should be less of concern.

Hard caps are considered an appropriate tool when the sector is rationalized. In general, cooperatives are advocated for their ability to manage an allocation in a manner that provides the greatest benefit their participants. Under a system of cooperative management, members of a cooperative can be held responsible for staying within their cooperative allocations through private contract and internal cooperative controls.<sup>10</sup>

Hard cap management does have the potential to result in a cooperative's catch of one species constraining the cooperative's directed fisheries for other species. Specific concern has been raised that the Council could choose an allocation option that results in a small allocation of rock sole to the Non-AFA Trawl CP sector. If the Council also applies a very low threshold for cooperative formation (e.g., 15 percent of the eligible participants), it is possible that a small cooperative may form that is constrained in directed fisheries for yellowfin sole and flathead sole by its allocation of rock sole. While this scenario is possible, the basis for allocations and the dynamics of the cooperative system should be borne in mind. Since allocations are history-based, if historic incidental catch rates continue, allocations should allow adequate incidental catch to maintain those historic directed fisheries. The history-basis for allocations might not fully address the problem, since allocations (either to the sector or within the sector could be based on retained catch. A retained catch basis (particularly the in-sector allocations) could result in some vessels that historically discarded incidental catch from having a shortfall in allocations of incidental catch species. These potential shortfalls, however, could be addressed through the cooperative program. First, cooperative membership is voluntary. So, small cooperatives are a matter of choice and negotiation. Although it is possible that a small cooperative could form, its members would have the option of joining (or joining with) other cooperatives to ensure larger cooperative allocations of all species needed to address potential incidental catch shortfalls. Second, since inter-cooperative trades will be permitted under the program, even in season shortfalls of incidental catch could be addressed through negotiated exchanges among cooperatives. So, while it is possible that incidental catch may constrain catch in some directed fisheries, the severity of that problem could be questioned.

Since participants under this program would have the option of fishing in the sector's limited access fishery, the application of a hard cap to that fishery must be considered. Clearly, the sector's limited access fishery would be managed by NOAA Fisheries, since the catch of several independent participants would need to be managed. As in many limited access fisheries, it is likely that participants in the sector limited access fishery would race to harvest the available allocation. Use of a hard cap in the limited access fishery would require the agency to determine when to close each directed fishery, timing the closure to ensure that adequate incidental catch is available to allow catch from directed fisheries for the other allocated species. The agency would likely continue to err toward closing limited access fisheries for the different allocated species early to avoid overages, which would shutdown all directed fisheries

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<sup>10</sup> It is conceivable that NOAA Fisheries could also manage cooperative allocations as hard caps. If NOAA Fisheries were to manage the hard caps, the agency would need to establish directed fishing allowances and ICAs for each cooperative. The agency would also be called upon to announce directed fishing closures for the different species for each cooperative. NOAA Fisheries would likely set conservative directed fishing allowances for the cooperatives, given the smaller allocations to each cooperative and the potential variability in incidental catch rates. This approach would be relatively cumbersome for both cooperatives and the agency, substantially reducing the benefits of rationalization.

with incidental catch of the allocated species. A directed fishery could be reopened, if closed prematurely. Regardless of whether allocated target species are managed with hard caps, catch of prohibited species (particularly halibut in the flatfish and rockfish fisheries) would also be of concern to managers monitoring catch from the fisheries. Halibut catch historically constrained catch in the flatfish fisheries.

In large part hard cap management of the limited access fishery would resemble the current management of limited access fisheries. The hard cap on the allocated species in the sector's limited access fishery, however, would be more restrictive than the soft caps used in management of limited access fisheries currently. Whether this more rigid cap is a drawback, however, is not apparent and likely depends in large part on the cooperative program. If the cooperative formation threshold is low (e.g., 15 percent of the eligible sector members), then a limited access option is less important to sector members trying to negotiate cooperative membership. Sector members will likely have a few cooperatives that they could choose to join or they could choose to form a new cooperative with others. The limited access fishery would be less important to providing a fishing opportunity, since a sector member would have a few cooperative opportunities to choose from. In addition, hard caps in the limited access fishery could be used to increase the incentive for cooperative membership, which should, in turn, reduce the management burden to the agency by reducing the number of participants in the limited access fishery.

If a high cooperative threshold is chosen (e.g., 75 percent of the eligible sector members), the limited access opportunity could be important to sector members that are unable to come to terms with the sector's only cooperative. Hard caps would reduce negotiating leverage of these non-members, since the limited access fishery would have a reduced fishing opportunity. The choice of whether to impose hard caps in the limited access fishery likely depends on the importance of that opportunity to sector members, the extent to which cooperative membership should be encouraged, and the potential added management cost to the agency from a larger limited access fishery.

### **Suboption 2 - Soft caps**

Under Suboption 2, NOAA Fisheries would manage allocations of species to the Non-AFA Trawl CP sector as a soft cap. A soft cap would provide more flexibility. Developing a meaningful system of soft caps to apply at the cooperative level that are any different from hard caps is not possible. Under any reasonable cooperative management system, when a cooperative has harvested its allocation of a species, all directed fishing for that species would close, as well as any fisheries where the species is taken incidentally to the directed harvest of other species. No pool of available catch exists for the deduction of overages by a cooperative, so application of a soft cap similar to the soft caps in general limited access fisheries is not feasible.

In addition, any attempt at applying a soft cap system to cooperatives would involve NOAA Fisheries limiting the fishing behavior of cooperatives by designating directed fishing openings on a cooperative level. Such an approach is antithetical to a cooperative program, which relies on fishermen to cooperatively determine fishing behavior to maximize the benefits from their allocations and reduce management costs. Involvement of NOAA Fisheries in the management of directed fishing by cooperatives is likely to decrease potential benefits to cooperative members, by limiting their ability to make efficiency improving decisions in their fishing activity. Management costs would also increase since NOAA Fisheries would need to actively monitor and limit the fishing behavior of each cooperative independently.

The application of a soft cap to the sector's limited access fishery would allow participants in that fishery some flexibility, in the event that NOAA Fisheries was unable to accurately manage the incidental catch of the various directed fisheries. So, if NOAA Fisheries left directed fisheries open for a period of time and the catch of one species reached or exceeded the allocation to the sector limited access fishery, fisheries in which the limited species is caught incidentally could be left open with the limited species under PSC status (requiring its discard). This flexibility could be important, if the Council chooses a relatively high cooperative formation threshold (e.g., 75 percent of the eligible sector members). If the

threshold for cooperative formation is relatively low (e.g., 15 percent of the eligible sector members), the opportunity to fish in the sector limited access fishery is less important since a sector member would have relatively more cooperatives to negotiate membership with or could choose to form an additional cooperative with others that have not joined a cooperative.

#### **3.2.3.4 Limited Access Fishery**

After making allocations to the Non-AFA Trawl CP sector, the remaining portion of the TACs of the allocated species would be available for harvest in the general limited access fishery. Participants in this limited access fishery would include AFA Trawl CP sector, AFA Trawl CV sector, and the Non-AFA Trawl CV sector. The Non-AFA Trawl CP sector would be precluded from participating in the general limited access fishery. AFA CPs are eligible to participate in the general limited access fishery, if they carry the appropriately endorsed LLP license. An additional eligibility requirement could be created for the Trawl CV sector. Under the options under consideration, to be eligible for the fishery a Trawl CV would need an appropriately endorsed LLP license and at least: a) one landing, b) 150 metric tons, or c) 1,000 metric tons, of retained trawl catch from 1995-2004.

#### **Allocations**

In making allocations to the Non-AFA Trawl CP sector, the Council should consider the impact of those allocations on the general limited access fishery. If the allocation to the Non-AFA Trawl CP sector is very large, it is possible that the remaining portion of the TAC might not be adequate to support directed fishing in the general limited access fishery. In some cases, the remaining allocation of a species to the general limited access fishery may not be sufficient to support incidental catch of that species in other directed fisheries in the general limited access. On the other hand, large allocations to the general limited access fishery could result in fish going unharvested. Both the AFA sideboards and the relatively limited participation of eligible vessels (other than Non-AFA Trawl CPs) in some of the fisheries for allocated species could result in a portion of the allocation to the general limited access fishery going unharvested. A rollover to the Non-AFA Trawl CP sector could mitigate this effect, allowing that sector to harvest the remaining portion of the limited access allocation. The rollover, however, may not completely mitigate the effect, since fishing patterns could be disrupted and a potential loss of revenues from the fisheries could occur particularly in fisheries such as rock sole, which produces roe in the spring months. Table 3-34 shows the percentage of each species that would be allocated to the general limited access fishery using the three different allocation calculations and six different year combinations. For Atka mackerel and AI POP, the percentages in Table 3-34 represent the allocation the limited access fishery would get in each subarea. Multiplying those percentages by the 2005 TAC (after deductions of the CDQ allocations and reserves) for each species shows the amount of each species that would be allocated to the general limited access fishery based on that TAC level.

Looking at the differences in the percent of the TAC allocated along with the estimated allocations amounts based on the 2005 TAC provide some measure of the difference between the options. For the Atka mackerel fishery, allocations ranged between 0.4 percent for Option 3.2 using years 2000-2004 and 20 percent for Option 3.3 using years 1997-2002 with AFA 9 catch included.

Allocations in the flathead sole fishery ranged between 3 percent for Option 3.2 using 1999-2003 and 2000-2004 year periods and 38 percent for Option 3.3 using years 1995-2003 with AFA 9 catch included. Using 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 431 mt and 6,199 mt.

In the Pacific Ocean perch fishery, allocations ranged between 0.1 percent for Option 3.2 using years 1998-2002 and 15 percent for Option 3.3 using years 1997-2002 with AFA 9 catch included.

Allocations in the rock sole fishery ranged between approximately 3 percent for Option 3.2 using years 1999-2003 and 64 percent for Option 3.3 using years 1997-2002 with AFA 9 catch included. Based on the 2005 TAC, allocation amounts for the rock sole fishery would range between 1,097 mt and 20,753 mt.

In the yellowfin sole fishery, allocations ranged between 9 percent for Option 3.2 using years 2000-2004 and 43 percent for Option 3.3 using years 1995-2003 with AFA 9 catch included. Allocations of yellowfin sole using the 2005 TAC would have ranged between 6,783 mt and 33,454 mt.

**Table 3-34 Available allocation of Amendment 80 species after allocation to the Non-AFA Trawl CP sector that would be for the general limited access fishery**

Years	Average Annual Retained Catch of the General Limited Access Fishery	Average Annual Total Catch of the General Limited Access Fishery	Retained/Retained		Total/Total		Retain/Total	
			With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
Atka Mackerel (2005 ITAC was 6,375 mt EAI/BS, 30,175 mt CAI, & 17,000 mt WAI)								
1995-2003	4,446	4,841	8.8%	2.0%	8.4%	2.3%	19.9%	14.6%
1997-2002	3,962	4,422	8.1%	1.9%	7.8%	2.3%	20.4%	15.7%
1998-2002	3,231	3,510	7.5%	1.8%	7.3%	2.1%	17.0%	12.4%
1998-2004	1,598	1,802	3.9%	0.3%	3.9%	0.7%	13.7%	10.8%
1999-2003	1,187	1,662	2.9%	0.3%	3.5%	1.3%	17.1%	15.2%
2000-2004	139	458	0.4%	0.4%	1.0%	1.0%	14.1%	14.1%
Flathead Sole (2005 TAC was 16,575 mt)								
1995-2003	430	3,410	3.8%	3.6%	19.6%	18.6%	38.1%	37.4%
1997-2002	386	3,257	3.5%	3.3%	19.2%	18.3%	37.6%	36.9%
1998-2002	436	3,144	3.5%	3.3%	17.2%	16.7%	35.0%	34.6%
1998-2004	404	2,849	3.2%	3.2%	15.7%	15.4%	32.5%	32.3%
1999-2003	304	2,676	2.6%	2.6%	15.5%	15.3%	33.0%	32.9%
2000-2004	301	2,620	2.7%	2.7%	16.1%	16.1%	32.5%	32.5%
AI Pacific Ocean Perch (2005 ITAC was 2,618 mt EAI, 2,580 mt CAI, & 4,322 mt WAI)								
1995-2003	48	119	0.6%	0.6%	1.2%	0.9%	14.1%	13.8%
1997-2002	85	156	1.0%	1.0%	1.6%	1.3%	14.9%	14.6%
1998-2002	8	47	0.1%	0.1%	0.5%	0.3%	12.2%	12.0%
1998-2004	1	25	0.0%	0.0%	0.3%	0.3%	12.2%	12.2%
1999-2003	56	87	0.7%	0.7%	0.9%	0.9%	14.5%	14.5%
2000-2004	76	105	0.9%	0.9%	1.1%	1.1%	14.6%	14.6%
Rock Sole (2005 TAC was 32,275 mt)								
1995-2003	945	6,906	6.8%	5.8%	19.0%	18.0%	64.3%	63.9%
1997-2002	844	6,388	6.1%	5.2%	18.0%	17.1%	63.4%	63.0%
1998-2002	857	5,783	6.1%	5.3%	16.3%	15.8%	62.9%	62.7%
1998-2004	566	4,629	4.6%	4.6%	14.6%	14.5%	62.6%	62.6%
1999-2003	470	4,114	3.4%	3.4%	12.5%	12.4%	59.5%	59.5%
2000-2004	469	3,898	3.6%	3.6%	12.2%	12.2%	60.2%	60.2%
Yellowfin Sole (2005 TAC was 77,083 mt)								
1995-2003	16,038	23,192	23.7%	21.7%	25.4%	23.7%	43.4%	42.1%
1997-2002	14,589	21,036	21.9%	20.1%	23.8%	22.1%	41.4%	40.2%
1998-2002	11,185	16,122	17.4%	16.2%	19.2%	18.0%	36.9%	36.0%
1998-2004	5,935	9,696	11.5%	11.5%	14.1%	14.1%	33.8%	33.8%
1999-2003	5,055	8,127	9.6%	9.6%	11.9%	11.9%	30.4%	30.4%
2000-2004	4,405	6,598	8.8%	8.8%	10.3%	10.3%	28.8%	28.8%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports

### Option 3.1

This option would allocate the species noted in Component 1 based on the total catch of the Non-AFA Trawl CP sector for the allocated species for a specific set of years relative to total catch of that same species and set of years for all other sectors combined. Depending on the species, the remaining portion available for allocation to the general limited access fishery ranges between 0.3 percent for Pacific Ocean perch and 25 percent for yellowfin sole. Below is a brief description of the allocation percentages for each

the allocation species, an example of allocation amounts to the general limited access fishery based on the 2005 TAC.

In the Atka mackerel fishery, allocations ranged between approximately 0.7 percent and 8 percent. Allocations of Atka mackerel in metric tons using the 2005 TAC would have ranged from 45 mt to 510 mt for EAI/BS, 211 mt to 2,414 mt for CAI, and 119 mt to 1,360 mt for WAI.

Estimated allocations in the flathead sole fishery range from 15 percent to 19 percent. Applying these percentages to the 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 2,536 mt and 3,182 mt.

In the Pacific Ocean Perch fishery, estimated allocations to the general limited access fishery range from 0.3 percent to approximate 2 percent. Applying these percents to average TAC from 1999 to 2003, allocation amounts would have ranged between 8 mt and 52 mt for both the EAI and CAI, and 13 mt to 86 mt for WAI.

Allocations in the rock sole fishery range between 10 percent and 18 percent. Using the 2005 TAC, allocation amounts to the general limited access fishery for rock sole would have ranged between 3,357 mt and 5,810 mt.

In the yellowfin sole fishery, available allocations for the general limited access fishery ranged between 8 percent to 24 percent. Applying these percentages to 2005 TAC, the amount of yellowfin sole available for the general limited access fishery would have ranged between 6,398 mt and 18,346 mt.

### **Option 3.2**

Option 3.2 would allocate the species noted in Component 1 based on the retained catch by the Non-AFA Trawl CP sector of each allocated species for a specific set of years relative to total catch of that same species and set of years for all other sectors combined. Depending on the species and catch history years, the portion available for allocation to the general limited access fishery ranges between zero percent for Pacific Ocean perch and 22 percent for yellowfin sole.

In the Atka mackerel fishery, available allocations ranged between 0.2 percent and 8 percent. Allocations of Atka mackerel in metric tons using the 2005 TAC would have ranged between 13 mt and 510 mt for EAI/BS, 60 mt and 2,414 mt for CAI, and 34 mt and 1,360 mt for WAI.

Allocations in the flathead sole fishery range are 2 percent and 4 percent. Applying these percentages to the 2005 TAC, allocation amounts for the flathead sole fishery would have ranged between 365 mt and 580 mt.

In the Pacific Ocean Perch fishery, allocations to the general limited access fishery range between zero percent to one percent. Applying these percents to the 2005 TAC, allocation amounts would have ranged from 0 mt to 3 mt for EAI and CAI, and 0 mt to 4 mt for WAI.

Allocations in the rock sole fishery range between 3 percent and 6 percent. Using the 2005 TAC, allocation amounts to the general limited access fishery for rock sole would have ranged between 1,001 mt and 1,969 mt.

In the yellowfin sole fishery, allocations for the general limited access fishery range between 7 percent and 22 percent. Applying these percentages to the 2005 TAC, the amount of yellowfin sole available for the general limited access fishery would have ranged between 5,242 mt and 16,881 mt.

### **Option 3.3**

Option 3.3 would allocate the species noted in Component 1 based on the retain catch by the Non-AFA Trawl CP sector for the allocated species using a specific set of years relative to the total catch of all sectors combined for the same species and set of years. Depending on the species, the portion available

for allocation to the general limited access fishery ranged between 12 percent for Pacific Ocean perch and 63 percent rock sole.

In the Atka mackerel fishery, allocations range between 11 percent and 20 percent. Allocations of Atka mackerel in metric tons based on the 2005 TAC would have ranged between 701 mt and 1,275 mt for EAI/BS, 3,319 mt and 6,035 mt for CAI, and 1870 mt and 3,400 mt for WAI.

Allocations to the general limited access fishery in the flathead sole fishery range between 32 percent and 38 percent. Applying these percentages to the 2005 TAC, allocation amounts for the general limited access flathead sole fishery would have ranged between 5,354 mt and 6,232 mt.

In the Pacific Ocean Perch fishery, allocations to the general limited access fishery ranged between 12 percent and 16 percent. Applying these percents to the 2005 TAC, allocation amounts would have ranged from 314 mt to 419 mt for EAI, 310 mt to 413 mt for CAI, and 519 mt to 692 mt for WAI .

Allocations to the general limited access fishery in the rock sole fishery range from 57 percent and 63 percent. Using the 2005 TAC, allocation amounts to the general limited access fishery for rock sole would have ranged between 18,300 mt and 20,462 mt.

### **ICA Suboption**

Under Option 3.1, the Council has included a provision for an ICA to support incidental catch in the nontrawl fisheries, and under Option 3.2 the Council has included an ICA provision to support incidental catch for nontrawl fisheries and trawl fisheries in the event that the allocation of an Amendment 80 species to the general limited access fishery is inadequate to support other directed fisheries. The provision is intended to ensure that directed fisheries in the general limited access for species not allocated in Amendment 80 are not affected by the allocations to the Non-AFA Trawl CP sector. In other directed groundfish fisheries, harvests of species allocated under Amendment 80 are limited by MRA (§679.20(e) and Table 10 to Part 679). The ICA would be set based on historic incidental harvest of species caught incidentally in other directed fisheries in recent years. NOAA Fisheries will likely set the ICA liberally (i.e., relatively high) to ensure that incidental catch of species allocated under this action do not result in a closure of other directed fisheries in the general limited access. Doing so would be consistent with existing fishing practices, since catch of these allocated species has not historically resulted in closures of other directed groundfish fisheries. The specific amount of the ICA would vary year to year depending on directed fishery openings and TACs and recently observed incidental catch rates. Using these ICAs, the agency would initially manage harvests of these species using the MRA. If catch rates indicated that an ICA was inadequate to support incidental catch through the year, NOAA Fisheries would employ its usual management measure of putting a species on prohibited species status to deter incidental catch and prevent incidental catch from resulting in a premature closure of other directed fisheries.

Table 3-35 shows the annual total incidental catch of five allocated species in the Bering Sea and Aleutian Islands by vessels other than Non-AFA Trawl CPs using trawl and nontrawl gear.<sup>11</sup> Incidental catch of all of the allocated species have fluctuated greatly during this time period, in part with the changes in targeting and effort in the different directed fisheries. Based on the wide range of incidental catch, NOAA Fisheries would likely set the ICAs near the highest catch levels in the table in the first year of this program to support incidental catch of these species.

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<sup>11</sup> Since non-trawl catch of these species is very limited, incidental catch by trawl gear in directed fisheries for other groundfish is adequate for determining the ICA.

**Table 3-35 Incidental catch of the five allocated species for fixed gear and trawl from 1996 to 2005**

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	Average not using 2005	Average (1996-2004) as a % of 2005 ITAC	Highest value as a % of 2005 TAC
<b>Atka Mackerel</b>	<b>Fixed Gear</b>	90	88	106	83	147	286	96	226	140	240	140	0.24%	0.49%
	<b>Trawl</b>	962	309	363	107	5	76	255	1,881	1,440	810	600	1.03%	3.23%
	<b>Total</b>	1,052	398	469	190	152	363	351	2,107	1,580	1,050	740	1.27%	3.62%
<b>Flathead sole</b>	<b>Fixed Gear</b>	280	340	416	254	296	253	344	378	506	556	341	2.06%	3.35%
	<b>Trawl</b>	5,459	4,969	3,446	2,254	2,792	2,175	1,978	1,899	2,162	2,520	3,015	18.19%	32.94%
	<b>Total</b>	5,739	5,309	3,862	2,508	3,088	2,428	2,322	2,277	2,668	3,076	3,356	20.24%	34.62%
<b>Rock sole</b>	<b>Fixed Gear</b>	69	44	52	58	33	33	31	43	31	49	44	0.12%	0.19%
	<b>Trawl</b>	13,312	13,871	6,723	5,892	4,789	2,509	3,426	3,105	3,839	2,268	6,385	18.10%	19.06%
	<b>Total</b>	13,381	13,915	6,775	5,950	4,822	2,542	3,458	3,148	3,870	2,317	6,429	18.22%	39.45%
<b>Yellowfin sole</b>	<b>Fixed Gear</b>	405	286	371	221	358	664	608	669	676	759	473	0.54%	0.87%
	<b>Trawl</b>	3,306	3,922	1,721	191	1,849	943	783	305	872	101	1,544	1.77%	4.49%
	<b>Total</b>	3,711	4,208	2,092	411	2,207	1,607	1,391	975	1,548	860	2,017	2.31%	4.82%
<b>Pacific Ocean perch</b>	<b>Fixed Gear</b>	0.90	0.15	0.45	0.32	8.48	3.14	3.00	1.63	0.26	2.00	2.04	0.02%	0.08%
	<b>Trawl</b>	283	437	299	28	6	4	4	47	45	256	128	1.24%	4.21%
	<b>Total</b>	284	437	299	28	14	7	7	49	45	258	130	1.26%	4.22%

Source: From blend and catch accounting databases. No CDQ.

In the yellowfin sole fishery, allocations to the general limited access fishery range between 26 percent and 41 percent. Applying these percentages to the 2005 TAC, the amount of yellowfin sole available for the general limited access fishery would have ranged between 19,887 mt and 31,912 mt.

As noted above in the discussion of the allocation calculations under Option 3.3, some portion of the allocation available for the general limited access fishery could potentially go unharvested due to sideboard constraints. The AFA Trawl CP sector has a sideboard limit of 23 percent of yellowfin sole, 3.7 percent of rock sole, and 3.6 percent of flathead sole (Table 3-36). The AFA Trawl CV sector has a sideboard limit of 6.47 percent for yellowfin sole, 3.41 percent of rock sole, and 5.05 percent of flathead sole (Table 3-36).

**Table 3-36 Sideboards for AFA Catcher Processors and AFA Catcher Vessels**

Target Fishery	Area	Season	AFA Trawl Catcher Processor	AFA Trawl Catcher Vessel
Atka mackerel	Central AI	A season	0.115	0.0001
		B season	0.115	0.0001
	Western AI	A season	0.2	0
		B season	0.2	0
	Eastern AI	A season	0	0.0032
		B season	0	0.0032
Jig gear	-	-	0.0031	
Flathead sole	-	-	0.036	0.0505
Pacific Ocean perch	Bering Sea	-	0.002	0.1
	Eastern AI	-	0.02	0.0077
	Central AI	-	0.001	0.0025
	Western AI	-	0.004	0
Rock sole	-	-	0.037	0.0341
Yellowfin sole	-	-	0.23	0.0647

In addition, Table 3-3, Table 3-5, Table 3-7, Table 3-10, and Table 3-12 show the catch of these species for these sectors was significantly smaller than what would be available for harvest under this option. For example, in the rock sole fishery, all trawl sectors eligible for the general limited access fishery harvested 1,523 mt rock sole or 10.6 percent of all rock sole harvested in 1995. Under this allocation calculation option, the general limited access fishery would get between 57 percent and 63 percent of the entire rock sole TAC, which when applied to the 2005 TAC amounts to between 18,300 mt and 20,462 mt of rock sole. Since the AFA sectors have sideboards that limit their harvest of these species, the maximum amount of rock sole AFA vessels could harvest is just over 7 percent of the TAC. If the general limited access fishery was allocated 57 percent of the TAC, 50 percent of the rock sole TAC to be harvested by non-AFA Trawl CVs. The issue also could arise for the other allocated species. For example, the general limited access fishery would be allocated between 1,110 mt and 1,480 mt of Pacific Ocean perch. In years prior to the sideboard, vessels eligible for the limited access fishery harvested less than 200 mt annually.

### 3.2.3.5 Rollovers

The final suboption included in Component 3 is the option of including a rollover program for the allocated species and its associated PSC.

The rollover of allocated species could be administered in a manner similar to the current Pacific cod rollover program. In the reallocation of Pacific cod, the Regional Administrator is authorized to reallocate any projected unharvested allocation to another sector. Under this proposed action, the Regional

Administrator would be authorized to reallocate any projected unharvested Atka mackerel, AI Pacific Ocean perch, flathead sole, rock sole, or yellowfin sole from the general limited access fishery to the Non-AFA Trawl CP sector at an appropriate date. Since the suboption does not describe the distribution of the rollover within the Non-AFA Trawl CP sector, it is assumed that any reallocated quota would be apportioned based on the allocations in Component 10. In February 2006, the Council clarified that target and PSC rollovers to the Non-AFA Trawl CP sector will only be rolled over to those sector participants that are members of a cooperative. The intent of this clarification is to provide an incentive for eligible sector participants to join a cooperative. One the primary purpose of this proposed action to create an environment in which Non-AFA Trawl CP sector participants to form cooperatives which creates numerous benefits including the potential for reduced discards and improved utilization of the product among others.

The purpose of the rollover program is to ensure the TAC is utilized to the extent possible. Between 1995 and 1998, many of the eligible participants in the general limited access fishery targeted yellowfin sole. For example, in 1997, the AFA Trawl CP sector retained 17,163 mt of yellowfin sole and the AFA Trawl CV sector retained 14,196 mt of yellowfin sole in 1998 (Table 3-3). These sectors also targeted Atka mackerel and retained small amounts of flathead sole and rock sole during these early years. Interest in this fishery declined sharply after 1998, shifting their focus to pollock and Pacific cod, primarily because of the higher profits in those fisheries. This focus is unlikely to shift to species allocated under this program, as long as pollock and Pacific cod fisheries provide higher profits. To reduce the possibility that a substantial portion of the TAC of the species managed under this program is unharvested, the Regional Administrator would have the authority to rollover any projected unharvested portion of the general limited access allocation to the Non-AFA Trawl CP sector. To increase the potential benefit of the rollover, the Regional Administrator would have flexibility to implement the rollover on a species-by-species basis, with rollovers for some species and not for others and rollovers for different species at different times. In February 2006, the Council added May 1 and August 1 and anytime after for NOAA Fisheries to perform a rollover review of the fisheries.

### **PSC Rollover**

To maximize the benefits of the rollover of target species, this provision would also allow the Regional Administrator to rollover any PSC that is projected to be unused. If, for example, a substantial portion of the flatfish allocation to the general limited access fishery is rolled over to the Non-AFA Trawl CP sector, it is possible that the Non-AFA Trawl CP sector may not have adequate halibut to harvest the target flatfish rollover. The PSC rollover is intended to ensure that the target rollover harvest is not limited by PSC. As noted above, the Council in February 2006 expanded the rollover provision to include rollovers of allocated species and PSC to the trawl limited access fishery from the Non-AFA Trawl CP sector. For all of the reasons noted in the discussion on target species, the rollovers from Non-AFA Trawl CP sector to the trawl limited access fishery are not feasible. The Council in February 2006 also included some administrative details of the rollover like dates and criteria for determining a rollover amounts. Again, for the reasons noted above in the discussion on target rollovers, NOAA Fisheries has suggested that the August 1 review be changed to September 1 to allow ample time for the fall fishery to commence to determine an accurate projection of unused PSC. In addition, NOAA Fisheries also suggested that rollover reviews should be conducted twice a year due to the high administrative burden necessary to determine an accurate projection of unused PSC and as such any language suggesting more rollover reviews be eliminated.

The Council also included a provision that would discount any rollover of halibut PSC to the Non-AFA Trawl CP sector by 5 percent. It is assumed that the 5 percent would remain with the trawl limited access fishery. The intent of this additional language is allow some of the halibut PSC to remain in the trawl limited access fishery for unforeseeable needs for halibut PSC allowance.

### 3.2.4 Component 5 – PSC allocated to the CDQ program

**\*Component 5. Increase PSQ Reserves allocated to the CDQ Program (except herring and Chinook salmon) to levels proportional to the CDQ allocation of primary species under Component 2.**

#### 3.2.4.1 PSQ Allocation Options under Component 5.

Certain components considered under Amendment 80 would modify PSC sector allocations, including those made to the CDQ Program. Currently 7.5 percent of the annual PSC limits for salmon (Chinook and other salmon), halibut, and crab (red king, tanner, and opilio) are allocated to the CDQ Program as a PSQ reserve. The PSQ reserve is not allocated by specific groundfish target species, gear, or season. Because PSQ is not allocated for use in a specific fishery or season it can be used by the CDQ groups in whatever groundfish fishery they consider to be most important. CDQ groups are allowed to determine the best use of their PSQ reserves. The freedom to utilize PSQ where it is most valuable helps the groups in planning their annual fishing strategy to maximize returns from their groundfish CDQ allocations.

Component 5 would allocate PSC to the CDQ program as PSQ, as is currently done, but could increase the percentage amount of the PSQ allocated to the program proportional to the amount that primary species are allocated to the program. Component 2 has two options to increase the amount of primary species being allocated to the CDQ Program. Component 2, Option 2.2 would increase CDQ allocations to 10 percent, while Option 2.3 would increase CDQ allocations to 15 percent of the TAC for each primary target species. Thus, the potential range of PSQ allocations to the CDQ Program are from 7.5 percent (Option 2.1, the status quo) to 15 percent of applicable PSC limits.

As discussed earlier, herring is currently not allocated to the CDQ Program and is not being considered under this component. Herring bycatch will continue to be managed as it is currently. The herring PSC limit is set at 1 percent of stock biomass. That limit is shared by the non-CDQ and the CDQ sectors. Attainment of a herring PSC apportionment triggers trawl closures in the two Herring Summer Savings Areas north of the Alaska Peninsula and the Herring Winter Savings Area northwest of the Pribilof Islands to the affected fishery. Those closures apply to all sectors, including the CDQ fisheries.

Increasing the Chinook Salmon PSQ allocation is not included in Component 5 because Chinook salmon savings measures only are applicable to the directed pollock fisheries, not the directed fisheries for the primary target species considered under Amendment 80.

#### 3.2.4.2 Historical PSQ Harvest

Table 3-37 shows the PSQ reserves, catch, and percentage caught for 2001 through 2004. Catch of PSQ occurs in all groundfish CDQ fisheries. The only instances when a PSQ was exceeded during this time period were the 2003 Chinook and non-Chinook salmon PSQs, as well as the 2004 Chinook salmon PSQ. Crab and halibut PSQ reserves historically have had relatively high residual amounts during these same years. This is probably related to the historically low catch of flatfish CDQ species. As the flatfish CDQ fisheries have grown in recent years, so has the incidental catch of crab PSQ species. The catch of PSQ in the primary target fisheries in 2004 is shown in Table 3-38. This provides a general indication that the yellowfin sole CDQ fishery catches the majority of the crab PSQ species in the CDQ fisheries, and that other target fisheries caught modest amounts of crab and other PSQ species.

**Table 3-37 PSQ reserves, catch and percentage caught, 2001-2004.**

PSQ species	2001			2002			2003			2004			01-04 average
	Reserve	Catch	Percent caught	Reserve	Catch	Percent caught	Reserve	Catch	Percent caught	Reserve	Catch	Percent caught	
Zone 1 RKC	7,275	0	0.00%	7,275	431	5.92%	7,275	1,883	25.88%	14,775	175	1.18%	8.25%
Zone 1 Bairdi	54,750	690	1.26%	73,500	4,074	5.54%	73,500	9,119	12.41%	73,500	1,679	2.28%	5.37%
Zone 2 Bairdi	155,252	436	0.28%	222,752	3,695	1.66%	222,751	2,736	1.23%	222,750	13,483	6.05%	2.31%
Opilio Tanner	326,251	624	0.19%	326,251	25,568	7.84%	326,251	4,927	1.51%	326,250	29,860	9.15%	4.67%
Pacific halibut	343	86	24.98%	343	149	43.48%	343	175	50.93%	343	153	44.64%	41.01%
Chinook salmon	3,075	2,507	81.53%	2,775	2,093	75.42%	2,477	2,565	103.55%	2,175	2,966	136.37%	99.22%
non-Chinook salmon	3,152	2,427	77.00%	3,152	1,993	63.23%	3,151	5,292	167.95%	3,150	960	30.48%	84.66%

Source: NOAA Fisheries 2005.

Note: Pacific halibut mortality is reported in metric tons. All other species are listed in number of animals.

**Table 3-38 PSQ catch in the 2004 CDQ fisheries for primary target species.**

CDQ and PSQ categories	Atka Mackerel	Rockfish	Flathead sole	Rock sole	Yellowfin sole	Grand Total
Zone 1 Red King Crab	0	0	0	0	174	174
Zone 1 Bairdi Tanner Crab	0	0	0	164	1,504	1,668
Zone 2 Bairdi Tanner Crab	0	0	216	0	13,178	13,394
Opilio Tanner Crab	0	0	109	16	29,640	29,765
Pacific Halibut	15	0	9	5	67	96
non-chinook salmon	0	0	0	0	0	0

Source: NOAA Fisheries 2005.

Note: Pacific halibut mortality is reported in metric tons. All other species are listed in number of animals.

### 3.2.4.3 Projected PSQ Allocations

Component 2 has two options to increase the percentage amounts of primary target species to the CDQ Program. Component 5 would proportionately increase PSQ allocations to the CDQ Program. Thus, PSQ percentage amounts could remain the same (7.5 percent), or increase to either 10 percent or 15 percent of each PSC catch limit. Projected PSQ allocations for each percentage are shown below, based on 2004 PSC catch limits. As with the proposed increases to primary target species allocations, these projected PSQ increases only reflect a stepwise increase in allocations without a comprehensive review of actual PSQ requirements in each CDQ target fishery, either collectively or individually. Such increases are displayed in the following table.

Table 3-39 Projected increases in PSQ amounts based on 2004 PSC limits.

Prohibited Species Category	2004 PSC limit	Option 2.1: 7.5% Allocation	Option 2.2: 10% Allocation	Option 2.3: 15% Allocation
Zone 1 Red King Crab	197,000	14,775	19,700	29,550
Zone 1 Bairdi Tanner Crab	980,000	73,500	98,000	147,000
Zone 2 Bairdi Tanner Crab	2970,000	222,750	297,000	445,500
Opilio Tanner Crab	4350,000	326,250	435,000	652,500
Pacific Halibut (mt)	4,575	343	458	686
Non-Chinook Salmon	42,000	3,150	4,200	6,300

### 3.2.4.4 Impacts on CDQ Groups

Table 3-37 indicates that, historically, CDQ groups have had adequate PSQ reserves for the fishing strategies used those years. Projecting whether they would have enough PSQ in the future would require assumptions regarding bycatch rates of each PSC species in each of the target fisheries, the CDQ allocations of various target species, and the fishing strategies of the CDQ groups. Developing a model that takes all these factors into account is not feasible. Therefore, the discussion of the PSQ bycatch needs of the CDQ Program for each species is qualitative, drawing on historic target fishery and bycatch data to supplement the discussion.

The financial impact of increasing PSQ allocations also is difficult to analyze, since CDQ groups do not receive royalties for the catch of PSQ species. CDQ groups could forego some royalties if their target fisheries were curtailed due to attainment of PSQ amounts and the subsequent relocation of fishing effort or withdrawal of their partners from a particular fishery, but precise estimates of such losses cannot be estimated. The management costs to CDQ groups of increased PSQ allocations are equivalent to those described in Section 3.2.2.10.

#### **Non-Chinook Salmon PSQ**

Two different salmon PSQ categories are allocated to the CDQ Program: Chinook and non-Chinook. Chinook salmon is excluded from this discussion as it is explicitly excluded from consideration for an allocation increase under Component 5. The non-Chinook PSC category is composed of chum, pink, sockeye, and coho salmon.

Salmon PSQ reserves typically have been caught at a higher level than other PSQ reserves (see Table 3-37). The non-Chinook area closures apply to the Chum Salmon Savings Area for all groundfish fishing, whereas Chinook area closures apply to the Chinook Salmon Savings Areas and are specific to the pollock fishery. When trawl vessels fishing for a CDQ group catch the group's non-Chinook salmon PSQ allotment, the CDQ group must prohibit those vessels from using trawl gear to harvest any groundfish inside the Chum Salmon Savings Area between September 1 and October 14. They may continue harvesting groundfish outside the Chum Salmon Savings Area during that time period.

The non-Chinook salmon reserve has held constant between 2001 and 2004, but the catch of non-Chinook

salmon varied considerably over that time period. For example, in 2002 about 37 percent of the reserve was left unharvested, but in 2003 the reserve was over-harvested by about 68 percent. Given this variation in catch levels it is not impossible to estimate with any certainty what the catch levels could be in the future. Salmon bycatch that accrues to the two salmon PSQ categories primarily occurs in the pollock CDQ directed fishery. Participants in the pollock fleet have testified before the Council in the past that catches of salmon PSC are random and cannot be predicted or completely avoided. In some years the catch of salmon is much lower than in other years, although fishing patterns are relatively the same. In response to this variability, as well as high salmon bycatch rates in 2003 and 2004, participants in pollock fishery are developing new strategies to reduce salmon bycatch.

Because of the inconsistency of salmon bycatch rates over time, members of the CDQ Program have expressed concern that they may not be allocated enough of a PSQ reserve to stay within their bycatch allocation. Salmon bycatch in 2003 can be used to illustrate their concerns. In 2003, the six CDQ groups, in total, exceeded their chinook reserve by about 4 percent and their non-Chinook reserve by about 68 percent. The non-CDQ fisheries also experienced high salmon catch rates. These levels were not typical, because in most years the salmon reserve has not been exceeded. However, it is the years when high levels of unavoidable bycatch occurs that concerns participants in the CDQ fishery. In those years, increasing the CDQ allocation of groundfish without increasing the PSQ reserves likely would result in even more pronounced bycatch problems, and the CDQ groups could be required to fish outside the Chum Salmon Savings Area. This could affect the yellowfin sole and other flatfish fisheries that occur in the Bering Sea, but would not affect Aleutian Islands target fisheries.

### **Crab PSQ**

Table 3-25 shows that the CDQ groups have never harvested more than 26 percent of any of their crab PSQ allocations during the years 2001 through 2004. Looking at the percentage of the allotment that is left over each year, it may be tempting to simply state that the CDQ groups do not need any additional crab PSQ. However, if the amount of primary target species left unharvested and the potential for this catch to increase based on recent trends is considered, this issue becomes more complex. Section 3.2.2.2 discusses historic and recent catch patterns in the primary target species in the CDQ sector, including indications that these fisheries are becoming more fully utilized.

In general, the majority of BSAI crab bycatch typically occurs in the trawl flatfish and Pacific cod fisheries. CDQ groups use longline gear to catch Pacific cod, rather than trawl gear, so unless that pattern changes, crab bycatch would not be an issue in that fishery. The CDQ groups are harvesting almost all of their yellowfin sole CDQ allocations. Yellowfin sole also typically has lower crab bycatch rates than other flatfish species like rock sole. So, the fisheries targeted to date by the CDQ groups have resulted in modest crab bycatch.

Fisheries that may demonstrate high levels of crab bycatch have not, historically, been fully harvested by CDQ groups. Only about 20 to 25 percent of the rock sole and flathead sole allocations have been caught in recent years (based on information presented in Table 3-24 in Section 3.2.2.2). The amount of crab PSQ that would be needed in the future depends on whether CDQ groups expand their harvests of those species. If those species are more fully utilized by the CDQ groups, the crab bycatch would be expected to increase. Any decisions to increase the crab PSQ allocations under Component 5 should consider the likelihood of increased activity in these fisheries in the future.

If a specific crab bycatch cap is reached by a CDQ group, trawl vessels fishing for species in which such crab are caught would be required to move out of the applicable crab savings area. The CDQ groups are not required to stop fishing altogether. Being forced to move harvest operations out of the savings areas could result in higher operating costs or lower CPUE rates for target species. The magnitude of such impacts is likely to vary by year and fishery.

### **Pacific Halibut PSQ**

Halibut is widely considered the most limiting PSC species in the BSAI groundfish fisheries. Unlike crab and salmon, when a halibut bycatch cap is reached the fleet is required to stop fishing instead of being limited to certain fishing areas. Halibut caps have the potential to restrict the amount of groundfish that can be harvested, as opposed to shifting operations to other areas. Halibut PSC apportionments are highly valuable for many BSAI groundfish sectors and gear types. Halibut catch made with pot gear is exempt from halibut PSC accounting, so pot gear sectors are not constrained by halibut PSC allotments. Halibut PSC is primarily taken in the longline Pacific cod and turbot fisheries. In the trawl fisheries, halibut is taken in modest amounts in “midwater” fisheries (e.g., pollock) and at higher rates in bottom fisheries such as yellowfin sole. Historically, it is fairly common for trawl and/or longline target fisheries to be closed because seasonal halibut bycatch allotments have been fully utilized.

Halibut is not allocated to specific target fisheries in the CDQ Program as is done in the non-CDQ fisheries. Thus, if a CDQ group caught all of its annual halibut PSQ allocation, it would be required to stop directed fishing for those target species that could take halibut as bycatch. This would affect every groundfish fishery, as halibut is caught in each groundfish fishery. In the CDQ fisheries, halibut has not been as constraining as in the open access fisheries. During the 2001 through 2003 fishing years, the percentage of the halibut PSQ allocation caught has averaged about 41 percent of annual allocations. This ranges from about 25 percent and 51 percent of the CDQ Program allocations in 2001 and 2003, respectively.

The total amount of halibut PSQ mortality used in the CDQ fisheries would be expected to increase if the CDQ groups are successful in increasing their utilization of flatfish allocations such as yellowfin sole and rock sole. Rock sole target fisheries typically have relatively high halibut bycatch compared to other fisheries. During 2003, about 26 kg of halibut was harvested for each metric ton of groundfish harvested in the BSAI open access rock sole fishery. The rate was lower in 2002, about 17 kg of halibut per metric ton of groundfish. As an example, using the 2003 halibut bycatch rates, harvesting the entire 2003 rock sole CDQ allocation would have required about an additional 71mt of halibut. The flexibility to harvest at a time of year when halibut bycatch rates are lower is limited by the importance of roe in the rock sole fishery. That fishery occurs in January and February when roe is at peak quality. After the roe is peaked in quality the value of the fish harvested declines and the profitability of harvesting rock sole declines.

#### **3.2.4.5 Impacts on Non-CDQ Industry Components**

The affects of increasing PSQ percentage amounts under Component 5 proportional to the amount that CDQ percentage amounts could be increased under Component 2, Options 2.2 and 2.3 cannot be estimated with any certainty. Obviously, if allocations of PSQ to the CDQ Program were increased, there would be less PSC available for the non-CDQ sector fisheries to account for their incidental catch of crab, salmon, and Pacific halibut. The yellowfin sole, rock sole, and flathead sole fisheries could be the most affected by increased PSQ allocations, since they historically experience higher bycatch rates for PSC species than do the Atka mackerel and Pacific Ocean perch fisheries. But, since this action concurrently considers decreasing the amount of the primary target species available for the non-CDQ fisheries, less PSC species would be needed to account for bycatch in non-CDQ fisheries. However, other fisheries, such as the trawl Pacific cod fishery, could be impacted by across-the-board increases in PSQ allocations, since it also would lose access to that additional portion of PSC limits allocated to the CDQ Program. The discussions in Section 3.2.2.7 about the impacts of increasing primary target species allocations on non-CDQ industry sectors are generally applicable to this discussion.

#### **3.2.4.6 Effects on Management Costs**

The effects on management costs of increasing the PSQ allocations to the CDQ Program from 7.5 percent to either 10 percent or 15 percent of PSC catch limits is essentially the same as described in Section 3.2.2.10.

### 3.2.5 Component 6 – PSC allowance for the Non-AFA Trawl Catcher Processor sector

Component 6 identifies three different options for apportioning PSC allowance to the Non-AFA Trawl CP sector. The intent of these options is to allocate to the Non-AFA Trawl CP sector their own portion of the trawl PSC allowance for use in the cooperatives. With the Non-AFA Trawl CP sector getting their own allocation of PSC allowance, the cooperative no longer has to be concerned with the PSC catch of other trawl vessels outside the cooperative. Currently, the PSC allowance is apportioned by gear and directed fishery, so in some fisheries trawl vessels race to harvest as much of the TAC as possible before the PSC allowance to the trawl gear is fully utilized. Once the PSC allowance or TAC is taken, a closure notice for the directed fishery is issued by NOAA Fisheries.

The first option would allocate a portion of the trawl PSC to the Non-AFA Trawl CP sector to be used when directed fishing for allocated and non-allocated species. Under this option, the Council could use one of three suboptions to determine the sector PSC allocations. Suboption 6.1.1 would allocate a portion of trawl PSC allowance to the Non-AFA Trawl CP sector based on the historical usage of PSC in all fisheries. In April 2006, the Council narrowed this option to only allocate halibut PSC and then added two suboptions to reduce the halibut PSC allowance to the Non-AFA Trawl CP sector to 80 percent of the calculated level which would be phased in at 5 percent per year starting in the second year. Suboption 6.1.2 would also allocate a portion of trawl PSC allowance based on the historical usage of PSC, but only for the species allocated under Components 3 and 4 plus Pacific cod. Suboption 6.1.3 would also allocate a portion of the trawl PSC allowance to the Non-AFA Trawl CP sector based on PSC usage in fisheries for allocated species plus Pacific cod, but based on average historic usage of all participants in those fisheries (rather than usage of the Non-AFA Trawl CP sector). To develop these PSC allocations, the historic PSC catch by all trawl vessels in the applicable fisheries would be multiplied by the percentage of the TAC to be allocated to the Non-AFA Trawl CP sector under Components 3 and 4. This method of computing PSC allocations to the sector would avoid potential of rewarding the sector with a relatively high PSC allocation in cases in which its PSC catch rates exceed those of other sectors.

In February 2006 the Council expanded the options for apportioning PSC limits between the Non-AFA Trawl CP sector and trawl limited access fishery. The new Suboption 6.1.4 would allocate a portion of the trawl PSC allowance to the Non-AFA Trawl CP sector based on allocation amounts for each of the species apportioned to the Non-AFA Trawl CP sector. The new suboption allows some fluctuation of PSC apportionment between the Non-AFA Trawl CP sector and the trawl limited access fishery since it relies on the lesser of the TAC or previous years catch. To limit the fluctuation of PSC, the Council established a minimum and maximum PSC allowance for both groups. In April 2006, the Council narrowed the scope of this suboption to only include halibut PSC. Since the analysis of this suboption was completed prior to the April 2006 decision, it addresses both halibut and crab PSC allocation issues.

The second option in Component 6 would reduce the PSC allocations to a specific percentage of the estimations calculated under the first option. The suboptions under consideration would allocated 60 percent, 75 percent, 90 percent, 95 percent, or 100 percent (no reduction) of the PSC allocation calculated under Option 6.1. One potential justification for a reduction in PSC allocations is that participants in a cooperative should have greater flexibility to modify fishing practices to reduce PSC catch. The reduction could also be used to avoid rewarding the sector with a high PSC allocation, if the PSC allocation is based on its historic PSC catch and that catch is perceived to be excessive.

The third option would allow the Council to select specific percentages and/or amounts of PSC that would be allocated to the Non-AFA Trawl CP sector. The allocation would not be based on a specific allocation calculation option, but would be based on consideration of the estimates from the previous options. If the Council bases its decision on the estimates of the previous options, it is possible that no additional analysis would be required. If the Council deviates significantly from the estimates of the previous options, additional analysis may be required. Selecting specific percentages would allow the Council to exercise discretion in determining concerning PSC allocations to the sector considering all

available information concerning PSC catch rates of the sector and other sectors. Percentages could be chosen that are both adequate to support PSC needs of the sector and limit the extent to which allocations are excessive in cases in which the Council perceives high PSC catch by the sector in the past. In April 2006, the Council selected crab PSC limits for the Non-AFA Trawl CP sector from Table 3-43 in the March 16, 2006 EA/RIR/IRFA. These percentages are 37.52 percent for red king crab, 61.44 percent for *C. opilio*, 52.64 percent for Zone 1 *C. bairdi*, and 29.59 percent for Zone 2 *C. bairdi*. The Council also included reduction element in this option. The initial limit to the Non-AFA Trawl CP sector will be reduced by 5 percent per year starting in the second year until the allocated limit is 80 percent of the initial limited. In addition, the Council also clarified that the trawl limited access sectors crab PSC shall be limited to the AFA CV/CP sideboard amounts.

**Component 6** PSC allowance of halibut and crab to the Non-AFA Trawl CP Sector.

Option 6.1 Apportion PSC to Non-AFA Trawl CP sector:

**\*Suboption 6.1.1 Allocate halibut PSC based on historical usage of PSC by the Non-AFA Trawl Catcher Processor sector from January 1, 2002 thru December 31, 2004 rather than the sector's allocation, with the remainder available to the other sectors.**

**\*Suboption 6.1.1.1 Reduce apportionments to 80% of calculated level**

**\*Suboption 6.1.1.2 Phase in PSC reductions 5% per year starting in second year of program**

Suboption 6.1.2 Allocation based on the PSC taken in the Non-AFA Trawl Catcher Processor sector directed fishery for allocated primary species plus Pacific cod.

Suboption 6.1.3 Percentage allocations (estimates for PSC associated with Pacific cod catch would be based on the process laid out in Component 3) selected in Component 3 multiplied by the relevant total PSC catch by all trawl vessels in each PSC fishery group for allocated primary species plus Pacific cod.

**\*Suboption 6.1.4 Allocation of halibut PSC to the non-AFA Trawl CP sector shall be determined by that sector's percentage allocations of target species groups (contained in Component 3) multiplied by the trawl PSC amounts for those target species groups as set forth in the annual specifications.**

**Sectoral PSC allocations will be calculated using a predetermined fixed target fishery bycatch rate, based on the 2002-2004 average consumption rate across the trawl sectors based on the lesser of the TAC or the previous year's catch, with initial allocations of the PSC to all trawl target fisheries adjusted pro rata such that their sum equals the overall trawl PSC allocation.**

**The following maximum and minimum allowances shall apply to the initial PSC allocations: Non-AFA Trawl CP sector shall receive an allowance of not less than 2,200 mt of halibut and not more than 2,450 mt of halibut. Trawl limited access sectors shall receive an allowance of not less than 950mt of halibut and not more than 1,200 mt of halibut.**

Option 6.2 Select a Non-AFA Trawl CP sector halibut PSC reduction option from the following that would apply to any PSC apportionment suboption selected in 6.1. PSC reduction options can vary species by species. Any reduction in the Non-AFA Trawl CP sector should not result in an increase in PSC allocation to any other sector.

Suboption 6.2.1 Reduce apportionments to 60% of calculated level.

Suboption 6.2.2 Reduce apportionments to 75% of calculated level.

Suboption 6.2.3 Reduce apportionments to 90% of calculated level.

Suboption 6.2.4 Reduce apportionments to 95% of calculated level.

Suboption 6.2.4.1 Start the reduction in the third year of the program.

Suboption 6.2.5 Do not reduce apportionments from calculated level.

Suboption 6.2.6 Phase in PSC reductions 5% per year for Suboptions 6.2.1–6.2.4.

Suboption 6.2.7 Reductions under Suboptions 6.2.1–6.2.4 apply only to vessels that participate in the Non-AFA Trawl CP sector's limited access fishery.

**\*Option 6.3 The Council can select percentages and/or amounts for PSC allocated to the Non-AFA Trawl CP sector.**

**Crab PSC allocations to the Non-AFA Trawl Catcher Processor sector shall be based on the percent of historic usage of crab PSC in all groundfish fisheries from 1995 to 2002 (resulting percentages are reported in the far right column in Table 3-43 in the March 16, 2006 EA/RIR/IRFA):**

Red king crab.....	37.52%
C. opilio. ....	61.44%
Zone 1 C. bairdi...	52.64%
Zone 2 C. bairdi...	29.59%

**\*Option 6.3 continued**

**The initial allocation will be reduced 5% per year starting in the second year until the Non-AFA Trawl CP sector is at 80% of the initial allocation. Trawl limited access sectors shall receive an allowance of the sum of the combined AFA CV/CP sideboards. These levels shall be reviewed, and further reduced as necessary, by the Council during the fifth year of the program. (Note – basing usage on a percent of annual PSC limits, results in a calculation that is crab abundance based.)**

**If Amendment 85 is implemented prior to Amendment 80, the Non-AFA Trawl CP sector would receive an allocation of PSC in accordance with Amendment 85. Upon implementation of Amendment 80, no allocation of PSC will be made to the Non-AFA Trawl CP sector under Amendment 85.**

In assessing the different PSC allocation options, it is important to bear in mind that under the existing limited access management some directed fisheries are constrained by halibut PSC. Dividing the trawl halibut PSC allowance by allocating a portion to the Non-AFA Trawl CP sector and the remainder of the trawl sector could increase the potential for halibut PSC to constrain directed fisheries by limiting the flexibility of managers to respond to PSC shortfalls. In addition, each further division of PSC (i.e., the division of PSC to support a sector split of Pacific cod) will further limit the ability of inseason managers to respond to halibut PSC shortfalls by limiting their ability to reallocate PSC among fisheries. While these PSC divisions have the potential to result in a shortfall for one or more sectors. Sectors governed by a management structure that facilitates bycatch reduction may benefit from the PSC division.

While Option 6.1 provides a general method of calculating PSC allocations, two aspects of the calculations are not fully specified. Currently, trawl PSC is apportioned among directed fisheries during the annual TAC setting process. The option does not specify whether the allocations to the Non-AFA Trawl CP sector would be a percentage of the total trawl PSC allocation or percentages of the allocations to the various directed fisheries. For example, the allocation of halibut PSC could be a specific percentage of the total halibut trawl PSC. Alternatively, a percentage of the trawl halibut PSC available for Pacific cod, plus a percentage of the trawl halibut PSC available for rockfish, plus a percentage of the trawl halibut PSC available for pollock/Atka mackerel/other species, plus a percentage of the trawl halibut PSC available for rock sole/other flats/flathead sole, plus a percentage of the trawl halibut PSC available for yellowfin sole. If PSC is allocated as a percentage of the total trawl PSC (rather than on a directed fishery basis), the Non-AFA trawl CP sector PSC allocation would not be affected by the division of PSC among target fisheries in annual TAC setting process. NOAA Fisheries strongly supports allocating the sector a percentage of the total trawl PSC to avoid controversy in the annual TAC setting process. Based on this recommendation, staff estimated PSC allocations to the sector in this analysis as a percentage of the available trawl PSC.

The PSC allocation suboptions are also ambiguous concerning the computation of the percentage of PSC usage by the sector over several years. Two approaches for computing this percentage could be used. The first approach is to determine the average annual percentage of PSC usage by the sector (i.e., dividing the sector's PSC catch in a given year by the PSC catch of all trawl vessels in that year). The average of these annual percentages is the estimated PSC allocation to the sector. The second approach would sum PSC catch by the sector over all of the qualifying years, and then determine a single percentage by dividing that amount by total trawl PSC usage totals of all years combined. For Suboptions 6.1.1 and 6.1.2, PSC allocation results are presented for both methods. In most cases, the results of the approaches are similar. However, when annual catch varies significantly across time, results under the two approaches will vary. Staff has estimated allocations as only a percentage of total usage under Suboption 6.1.3 for this draft of the analysis because of time constraints and the complexity of those computations.

To allow the PSC allocation to fluctuate from year-to-year with stocks, the PSC apportionments should be stated as a percent of available PSC. To estimate percentages, the PSC catch can be divided by either trawl PSC usage or by the trawl PSC allowance. In fisheries and years in which the trawl PSC allowance is fully utilized, estimated percentages are very similar. However, in fisheries and years when the total trawl PSC allowance was not fully utilized, the choice of denominator results can have significant differences in the PSC allocated to the Non-AFA Trawl CP sector. For example, if the red king crab PSC

allowance for trawlers was 197,000 animals and the usage was only 50,000 animals, of which the Non-AFA Trawl CP sector used 45,000 animals, the denominator used would have dramatically different results. Using trawl usage as the denominator would result in a PSC allowance of 90 percent, whereas using trawl allowance in the denominator would result in PSC allowance of 23 percent. The analysis that follows provides both the trawl PSC allowances and usage, but estimates PSC allocations to the Non-AFA trawl sector based only on the percent of total usage by the sector.

Since the period to be used to define “historic usage” is not specified in the motion, staff has used the years used for the allocation of the primary species (Component 4) for estimating allocations under this option for consistency. Specifically, the year combinations will be 1995-2003, 1997-2002, 1998-2002, 1998-2004, 1999-2003, and 2000-2004. Note that 2003 and 2004 data are only available for halibut, and are not available for any of the prohibited crab species.

To address some of the concerns of usage based PSC allocations, the Council has included options that would adjust or reduce the PSC allocation to the Non-AFA Trawl CP sector. Since some of the suboptions allocate PSC based solely on the amount of PSC used by the Non-AFA Trawl CP sector, the sector would benefit from vessels with historically high PSC bycatch rates. This is often a concern raised when allocating PSC to a sector or group of vessels. Recognizing this issue, the Council has included options (6.1.2) that adjust the allocation based on historic groundfish catch and/or simply lower the PSC allocation a certain percent of the calculated allocation. In addition, Suboption 6.1.3 would allocate PSC based on historical harvest of groundfish multiplied by trawl PSC usage. The Council has also included an option to set PSC allocations as a specified percent of the available PSC to allow further discretion in the consideration of historic PSC catch rates of the sector and overall PSC catch rates in the various directed fisheries (Option 6.3).

Table 3-40 provides annual historic PSC usage for each of the PSC species. The data details PSC usage for the Amendment 80 qualified vessels and all other trawl vessels. The data also details the PSC usage by directed fisheries for the allocated species plus Pacific cod and directed fisheries for all groundfish.

**Table 3-40 Annual historic PSC usage by PSC species for Amendment 80 qualified vessels and all other trawl vessels.**

Year	Halibut PSC usage for Amendment 80 species plus Pacific cod (mt)		Halibut PSC usage for all groundfish (mt)	
	Amendment 80 qualified vessels	All other trawl vessels	Amendment 80 qualified vessels	All other trawl vessels
1995	1,379	1,667	1,498	2,228
1996	1,787	1,607	1,839	1,912
1997	2,050	1,323	2,081	1,513
1998	1,988	1,040	2,099	1,280
1999	2,549	681	2,725	756
2000	2,433	536	2,587	620
2001	2,657	300	2,772	472
2002	2,678	534	2,760	663
2003	2,670	808	2,801	885
2004	2,612	455	2,775	538

	Red king crab PSC usage for Amendment 80 species plus Pacific cod (animals)		Red king crab usage for all groundfish (animals)	
Year	Amendment 80 qualified vessels	All other trawl vessels	Amendment 80 qualified vessels	All other trawl vessels
1995	23,393	15,753	23,837	21,079
1996	23,153	1,880	23,237	7,725
1997	46,961	3,542	47,162	3,549
1998	24,368	3,158	27,139	14,807
1999	83,517	1,231	83,641	1,231
2000	71,963	4,729	72,045	4,737
2001	61,594	248	61,819	352
2002	101,355	4,934	101,355	4,951
	<i>C. opilio</i> crab PSC usage for Amendment 80 species plus Pacific cod (animals)		<i>C. opilio</i> crab usage for all groundfish (animals)	
Year	Amendment 80 qualified vessels	All other trawl vessels	Amendment 80 qualified vessels	All other trawl vessels
1995	2,639,479	1,427,167	3,523,756	1,624,633
1996	2,800,702	497,125	3,100,414	537,702
1997	4,285,699	695,624	4,355,973	917,292
1998	3,622,224	256,370	3,740,693	345,268
1999	1,142,661	139,205	1,207,492	153,209
2000	2,913,455	63,486	2,947,761	67,740
2001	1,782,560	20,168	1,829,327	22,786
2002	1,051,861	54,806	1,082,647	56,513
	Zone 1 <i>C. bairdi</i> crab PSC usage for Amendment 80 species plus Pacific cod (animals)		Zone 1 <i>C. bairdi</i> crab usage for all groundfish (animals)	
Year	Amendment 80 qualified vessels	All other trawl vessels	Amendment 80 qualified vessels	All other trawl vessels
1995	423,190	370,110	445,862	449,567
1996	587,519	146,762	616,386	223,860
1997	618,540	173,400	621,113	199,952
1998	441,119	104,974	449,606	114,422
1999	330,380	29,450	330,494	30,052
2000	302,848	27,450	302,848	27,576
2001	306,466	6,932	310,999	7,186
2002	417,376	39,919	418,828	39,931
	Zone 2 <i>C. bairdi</i> crab PSC usage for Amendment 80 species plus Pacific cod (animals)		Zone 2 <i>C. bairdi</i> crab usage for all groundfish (animals)	
Year	Amendment 80 qualified vessels	All other trawl vessels	Amendment 80 qualified vessels	All other trawl vessels
1995	856,481	340,174	904,486	382,700
1996	661,647	199,542	755,925	212,695
1997	879,006	164,218	898,350	169,311
1998	779,335	47,117	815,385	79,429
1999	439,751	45,414	455,807	45,934
2000	630,389	11,680	646,694	11,902
2001	615,183	6,811	625,243	6,904
2002	581,012	38,828	588,055	39,472

Source: Amendment 80 database

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

### 3.2.5.1 Current Management System

Currently, regulations limit PSC catch of halibut, red king crab, *C. opilio*, *C. bairdi*, chinook salmon and other salmon (primarily chum salmon). NOAA Fisheries annually sets PSC limits under 50 CFR 679.21 through the annual TAC-setting process. Of this amount, 7.5 percent of each PSC limit specified for halibut and crab is allocated as a PSQ reserve for use by the groundfish CDQ program. The remaining PSC limits are apportioned by fishery categories, gear group, and season to create more refined PSC limits. Table 3-41 and Table 3-42 show the PSC limits for each PSC species (except salmon) by gear and fisheries for 2005 and 2006. The purpose of seasonal apportionment is to maximize the ability of the fleet to harvest the available groundfish TAC and to minimize bycatch. The factors to be considered are 1) seasonal distribution of prohibited species, 2) seasonal distribution of target groundfish species, 3) PSC bycatch needs on a seasonal bases, 4) expected variations in bycatch rates throughout the year, 5) expected start of fishing effort, and 6) economic effects of seasonal PSC apportionments of industry sectors.

Despite the apportionment of PSC among fisheries, in recent years NOAA Fisheries has demonstrated a willingness to work with industry to ensure that fisheries are not constrained by PSC limits (while keeping PSC under the limits) by moving PSC among fisheries in season to cover potential shortfalls. This movement of PSC allocations has been undertaken informally, with general consent from industry. Overall consent is critical to this flexibility since no formal regulation defines this management.

**Table 3-41 2005 and 2006 prohibited species bycatch allowances for the BSAI Trawl**

Trawl Fisheries	Prohibited species and zone					
	Halibut mortality (mt) BSAI	Herring (mt) BSAI	Red King Crab (animals) Zone 1 <sup>1</sup>	C. opilio (animals) COBLZ <sup>1</sup>	C. bairdi (animals)	
					Zone 1 <sup>1</sup>	Zone 2 <sup>1</sup>
Yellowfin sole	886	183	33,843	3,101,915	340,844	1,788,459
January 20 - April 1	262	.....	.....	.....	.....	.....
April 1 - May 21	195	.....	.....	.....	.....	.....
May 21 - July 5	49	.....	.....	.....	.....	.....
July 5 - December 31	380	.....	.....	.....	.....	.....
Rock sole/other flat/flathead sole <sup>2</sup>	779	27	121,413	1,082,528	365,320	596,154
January 20 - April 1	448	.....	.....	.....	.....	.....
April 1 - July 5	164	.....	.....	.....	.....	.....
July 5 - December 31	167	.....	.....	.....	.....	.....
Turbot/arrowtooth/sablefish <sup>3</sup>	.....	12	.....	44,946	.....	.....
Rockfish	.....	.....	.....	.....	.....	.....
July 5 - December 31	69	10	.....	44,945	.....	10,988
Pacific cod	1,434	27	26,563	139,331	183,112	324,176
Midwater trawl pollock	.....	1,562	.....	.....	.....	.....
Pollock/Atka mackerel/other <sup>4</sup>	232	192	406	80,903	17,224	27,473
Red King Crab Savings Subarea <sup>5</sup> (non-pelagic trawl)	.....	.....	42,495	.....	.....	.....
Total trawl PSC	3,400	2,012	182,225	4,494,569	906,500	2,747,250

<sup>1</sup> Refer to § 679.2 for definitions of areas.

<sup>2</sup> "Other flatfish" for PSC monitoring includes all flatfish species, except for halibut (a prohibited species), Greenland turbot, rock sole, yellowfin sole and arrowtooth flounder.

<sup>3</sup> Greenland turbot, arrowtooth flounder, and sablefish fishery category.

<sup>4</sup> Pollock other than pelagic trawl pollock, Atka mackerel, and "other species" fishery category.

<sup>5</sup> With the exception of herring, 7.5 percent of each PSC limit is allocated to the CDQ program as PSQ reserve. The PSQ reserve is not allocated by fishery, gear or season.

<sup>6</sup> In December 2004, the Council recommended that red king crab bycatch for trawl fisheries within the RKCSS be limited to 35 percent of the total allocation to the rock sole/flathead sole/"other flatfish" fishery category (see § 679.21(e)(3)(ii)(B)).

**Table 3-42 2005 and 2006 prohibited species bycatch allowances for the BSAI Non-Trawl Fisheries**

Non-Trawl Fisheries	Prohibited species and zone					
	Halibut mortality (mt) BSAI	Herring (mt) BSAI	Red King Crab (animals) Zone 1 <sup>1</sup>	<i>C. opilio</i> (animals) COBLZ <sup>1</sup>	<i>C. bairdi</i> (animals)	
Pacific cod – Total	775					
January 1 - June 10	320				Zone 1 <sup>1</sup>	Zone 2 <sup>1</sup>
June 10 - August 15	0					
August 15 - December 31	455					
Other non-trawl – Total	58					
May 1 - December 31	58					
Groundfish pot and jig	exempt					
Sablefish hook-and-line	exempt					
Total non-trawl PSC	833					
PSQ reserve <sup>2</sup>	342	.....	14,775	364,424	73,500	222,750
PSC grand total	4,575	2,012	197,000	4,858,993	980,000	2,970,000

<sup>1</sup> Refer to § 679.2 for definitions of areas.

<sup>2</sup> With the exception of herring, 7.5 percent of each PSC limit is allocated to the CDQ program as PSQ reserve. The PSQ reserve is not allocated by fishery, gear or season.

To manage PSC, NOAA Fisheries uses a combination of observed PSC and imputed catch through application of observed catch rates to unobserved catch. Groundfish fishery PSC rates are calculated by dividing the sum of the weights or counts of PSC in a set of observer data by the sum of the weight of groundfish in the data set. For rates from observed vessels that will be applied to unobserved vessels, a minimum of three different weekly observer reports are required before an average rate is used. Reaching a PSC limit will result in closure of an area or a fishery season, even if the groundfish quota (e.g., TAC) remains unharvested.

Groundfish fishery PSC rates are calculated by dividing the sum of the weights or counts of PSC in a set of observer data by the sum of the weight of groundfish in the data set. For rates from observed vessels that will be applied to unobserved vessels, a minimum of three different weekly observer reports are required before an average rate is used. NOAA Fisheries monitor PSC limits for the general and CDQ groundfish fisheries using PSC rate estimates. Reaching a PSC limit will result in closure of an area or a fishery season, even if the groundfish quota (e.g., TAC) remains unharvested.

For the BSAI trawl fisheries, the limit is 3,400 mt of halibut mortality after deducting 7.5 percent for PSQ reserve for use in the groundfish CDQ program. The 3,400 mt is then apportioned between the different trawl fisheries categories (yellowfin sole, Pacific cod, rock sole/other flats/flathead sole, etc.), which is further apportioned by season for some fisheries. For example, halibut allowance for the yellowfin sole fishery is 886 mt, which is then further apportioned as 262 mt for the January 20 to April 1 season, 195 for the April 1 to May 21 season, 49 mt for the May 21 to July 5 season, and 380 for the July 5 to December 31 season. Note that at the beginning of the fishing year, the Pacific cod fishery is allocated more halibut PSC allowance than is needed for directed fishing, then throughout the season NOAA Fisheries transfers small amounts of halibut allowance in the Pacific cod fishery to the flatfish fisheries as needed.

The PSC limit of red king crab is dependent on the abundance of mature female red king crabs or the spawning biomass. When the number of mature female red king crab is below or equal to the threshold of 8.4 million mature crab, or the spawning biomass is less than 14.5 million lbs, the Zone 1 PSC limit will be 32,000 red king crab. Above a threshold of 8.4 million mature crab and the spawning biomass is equal to or greater than 14.5 but less than 55 million lbs, the Zone 1 PSC will be 97,000 red king crab. Finally, above a threshold of 8.4 million mature crab, and the spawning biomass is equal to or greater than 55 million lbs, the Zone 1 PSC limit will be 197,000 red king crab. Zone 1 is closed to directed fishing when red king crab bycatch limits are attained in the specific fisheries.

PSC limits for *C. bairdi* are established in regulation based on their abundance as indicated by the NOAA Fisheries bottom trawl survey. When the total abundance of *C. bairdi* is 150,000 animals or less, then the PSC limit for Zone 1 will be 0.5 percent of the total abundance minus 20,000 animals. Over 150 million to 270 million animals, the PSC limit will be 730,000 animals. Over 270 million to 400 million animals, then PSC limit will be 830,000 animals. Finally, over 400 million animals, the PSC limit will be 980,000 animals.

For Zone 2, the PSC limit will be 1.2 percent of the total abundance minus 30,000 animals when the total abundance of *C. bairdi* crabs is 175 million animals or less. Over 175 to 290 million animals, the PSC limit will be 2,070,000 animals. Over 290 million to 400 million animals, the PSC limit will be 2,520,000. Finally, over 400 million animals, the PSC limit in Zone 2 will be 2,970,000 animals.

The PSC limit of *C. opilio* caught by trawl vessels while engaged in directed fishing for groundfish in the *C. opilio* Bycatch Limitation Zone (COBLZ) will be specified annually by NOAA Fisheries, after consultation with the Council, based on total abundance of *C. opilio* as indicated by the NOAA Fisheries annual bottom trawl survey.

For further details on the management of BSAI PSC, see Chapter 3 of the Final Programmatic Supplemental Environmental Impact Statement (NMFS 2004b).

### **3.2.5.2 Suboption 6.1.1 – Historical Usage of PSC in all Groundfish Fisheries**

Suboption 6.1.1 would base PSC allocations on total PSC usage in all groundfish fisheries by Amendment 80 eligible vessels. Table 3-43 provides the percent of the PSC allowance that would be apportioned to the Non-AFA Trawl CP sector by year combinations for the individual PSC species. Two allocation percentages for each PSC species are presented, average of the annual percentage and the percent of the total.

In general, the amount of PSC usage by the Non-AFA Trawl CP sector has increased relative to usage by all other trawlers in recent years<sup>12</sup>. As a result, those year combinations with more recent years will yield a higher allowance to the Non-AFA Trawl CP sector. Overall, the percent of halibut PSC allocated to the Non-AFA Trawl CP sector would range between 65 percent and 79 percent using Suboption 6.1.1. This would leave between 17 and 35 percent of the halibut for all other trawlers. Looking at the amount red king crab apportioned to the Non-AFA Trawl CP sector, the allowance would range from 84 to 96 percent, leaving between 4 to 16 percent for all other trawlers. The amount of *C. opilio* PSC allocated to the Non-Trawl CP sector would range between 85 and 98 percent. The remaining 2 to 15 percent would be for all other trawlers. Allocation of Zone 1 *C. bairdi* would range between 76 and 94 percent, leaving between 6 and 24 percent for all other trawlers. Finally, the allocation of Zone 2 *C. bairdi* would range between 86 and 97 percent for the Non-AFA Trawl CP sector. The remaining 3 to 14 percent would remain for all other trawlers.

Given the historic halibut PSC usage by the Non-AFA Trawl CP sector (Table 3-40), the PSC allocation percentages under this option appear to be sufficient to harvest the Non-AFA Trawl CP sector allocation of groundfish, assuming the target species allocations are similar to historic harvest levels. However, depending on the years selected and future catch rates of PSC the remaining halibut PSC for all other trawlers could be insufficient to harvest their allocation of groundfish. Assuming 3,400 mt of halibut allowance for all trawl sectors, the amount of halibut PSC allocated to the Non-AFA Trawl CP sector using percentages from this suboption would range between 2,204 mt and 2,695 mt. Subtracting the halibut PSC allocation to the Non-AFA Trawl CP sector, the remaining 705 mt to 1,196 mt of halibut

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<sup>12</sup>Increased PSC usage by the Non-AFA Trawl CP sector is, at least in part, due to vessels from the AFA Trawl CP sector leaving the fishery in 1998. These vessels had traditionally participated in the fisheries that are being allocated to the Non-AFA Trawl CP sector. Without their participation, fewer vessels outside the Non-AFA Trawl CP sector are participating in the fisheries. Therefore, vessels outside the sector are catching less of the PSC apportioned to those fisheries.

PSC would be left for all other trawlers. Given the historical usage of halibut PSC from 1995 to 2003 (Table 3-40) the remaining trawl vessels fall short of the average halibut PSC usage under all of the qualifying year options. In the most recent years, however, these sectors have lower levels of halibut bycatch than would be allocated to the general limited access under most of the allocation options. It is possible that halibut bycatch could constrain target catch of participants in the general limited access fisheries below historic levels depending on bycatch rates. In addition, the general limited access might be unable to increase their harvests of flatfish or Pacific cod in the event that effort is shifted to those fisheries because of a pollock TAC decline. The ability of these other trawlers to reduce PSC catch rates substantially under continuation of current management is uncertain. Division of the Pacific cod quota (and accompanying PSC) among different trawl sectors (i.e., AFA CP, AFA CV, and Non-AFA CV) could facilitate improved management of halibut bycatch by AFA sectors, but could further limit the ability of non-AFA catcher vessels to continue target catch at historic rates by segmenting the available halibut PSC. This division of PSC for Pacific cod could exacerbate any shortfall of PSC in the Pacific cod fishery, particularly for Non-AFA catcher vessels since they have not formed a cooperative.

**Table 3-43 Historical Usage of PSC in all Groundfish Fisheries (Suboption 6.1.1)**

Year Combinations	Percent of halibut PSC usage based on total trawl usage (sector usage/total usage) using average of annual percents	Percent of halibut PSC usage based on total trawl usage (sector usage/total usage) using average of total	Percent of halibut PSC usage based on trawl allowance (sector usage/trawl allowance) using average of annual percents	Percent of halibut PSC usage based on trawl allowance (sector usage/trawl allowance) using average of total
<b>Halibut</b>				
1995-2003	67.02%	66.40%	65.42%	64.82%
1997-2002	74.17%	73.91%	69.67%	69.24%
1998-2002	77.43%	77.35%	72.58%	72.21%
1998-2004	76.01%	75.74%	75.27%	74.90%
1999-2003	78.79%	78.34%	77.93%	77.76%
2000-2004	78.33%	77.86%	79.43%	79.28%
<b>Red King Crab</b>				
1995-2002	84.12%	88.28%	44.84%	37.52%
1997-2002	90.81%	92.99%	55.87%	50.83%
1998-2002	90.37%	92.99%	57.61%	51.38%
1999-2002	96.79%	96.59%	65.22%	55.60%
2000-2002	96.20%	95.91%	72.81%	62.48%
<b>C. opilio</b>				
1995-2002	88.52%	85.40%	60.57%	61.44%
1997-2002	92.41%	90.66%	55.15%	56.85%
1998-2002	94.37%	94.36%	49.65%	50.50%
1999-2002	95.08%	95.92%	41.97%	42.20%
2000-2002	97.19%	97.55%	46.71%	47.27%
<b>Zone 1 C. bairdi</b>				
1995-2002	81.36%	76.19%	52.88%	52.64%
1997-2002	87.95%	85.31%	52.80%	52.43%
1998-2002	90.41%	89.21%	46.79%	46.58%
1999-2002	93.09%	92.86%	43.51%	43.39%
2000-2002	93.56%	93.25%	42.92%	42.82%
<b>Zone 2 C. bairdi</b>				
1995-2002	88.15%	85.71%	30.17%	29.59%
1997-2002	92.82%	91.95%	31.01%	30.46%
1998-2002	94.56%	94.46%	28.65%	28.14%
1999-2002	95.41%	95.69%	26.11%	25.65%
2000-2002	96.94%	96.96%	26.57%	25.90%

Source: Amendment 80 database

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

### 3.2.5.3 Suboption 6.1.2 – Historical Usage of PSC in the Directed Fisheries for Allocated Species plus Pacific Cod

This suboption is very similar to Suboption 6.1.1. It only differs in the species used to determine the PSC usage. Under Suboption 6.1.1, PSC usage while targeting all groundfish was used to determine PSC usage. Under this suboption, only PSC usage in the five allocated primary species plus Pacific cod was used. For example, the average PSC catch for the Non-AFA Trawl CP sector relative to all trawl sectors in the yellowfin sole, flathead sole, rock sole, Atka mackerel, and AI POP fisheries plus Pacific cod during the 1995 through 2003 will be credited towards the sector's overall PSC usage. The PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of the five primary groundfish species and any other non-allocated BSAI groundfish.

Table 3-44 provides the percentage of each PSC allowance that would be apportioned to the Non-AFA Trawl CP sector using the different year combinations. Since this suboption only includes PSC usage for the allocated species, PSC allocation percentages are slightly lower than those in the previous suboption.

Like Suboption 6.1.1, the amount of PSC usage by the Non-AFA Trawl CP sector increases relative to usage by all other trawlers under this suboption in recent years. As a result, those year combinations with more recent years will yield a higher allowance to the Non-AFA Trawl CP sector. Overall, the percent of halibut PSC allocated to the Non-AFA Trawl CP sector using this suboption would range between 62 and 76 percent, leaving between 24 and 38 percent of the halibut for all other trawlers. Looking at the amount red king crab apportioned to the Non-AFA Trawl CP sector, the allowance would range from 83 to 97 percent, leaving between 3 and 17 percent for all other trawlers. The amount of *C. opilio* PSC allocated to the Non-Trawl CP sector would range between 79 and 95 percent. The remaining 5 to 21 percent of the *C. opilio* PSC would be for all other trawlers. Allocation of Zone 1 *C. bairdi* would range between 75 and 93 percent, leaving between 7 and 25 percent for all other trawlers. Finally, the allocation of Zone 2 *C. bairdi* would range between 82 and 95 percent for the Non-AFA Trawl CP sector. The remaining 5 to 18 percent would be for all other trawlers.

Under this suboption, PSC allocations would likely be sufficient for the Non-AFA Trawl CP sector to harvest their allocation. However, there is the potential for the Non-AFA Trawl CP sector to not have enough PSC allowance to harvest their entire catch of groundfish, which includes some directed fishing for non-allocated species (such as Alaska plaice). In addition, depending on which set of years are used and future PSC catch rates, the remaining halibut PSC allowance may be insufficient for the remaining trawlers to harvest their allocation of groundfish in the future. Assuming 3,400 mt of halibut allowance for all trawl sectors, the amount of halibut PSC allocated to the Non-AFA Trawl CP sector, using percentages from this suboption, would range between 2,103 mt and 2,573 mt. Given the historic halibut PSC usage by the Non-AFA Trawl CP sector (Table 3-40), the PSC allocation percentages appear to be sufficient to harvest the Non-AFA Trawl CP sector's allocation of groundfish, assuming the allocations are based on historic harvest. The remaining 827 mt to 1,297 mt of halibut PSC would be left for all other trawlers. Given the historic usage of halibut PSC from 1995 to 1998 by all other trawlers there is the potential for a portion of the groundfish to remain unharvested because of the lack of halibut PSC.

To support trawl fisheries other than the Non-AFA Trawl CP sector, the remaining 725 mt to 1,263 mt of halibut PSC would be left for the general limited access fishery. Given the historically usage of halibut PSC from 1995 to 2003 (Table 3-40) the remaining trawl vessels fall short of the average halibut PSC usage under all of the qualifying year options. In the most recent years, however, these sectors have lower levels of halibut bycatch than would be allocated to the general limited access under most of the allocation options. It is possible that halibut bycatch could constrain target catch of participants in the general limited access fisheries below historic levels depending on bycatch rates. In addition, the general limited access might be unable to increase their harvests of flatfish or Pacific cod in the event that effort is shifted to those fisheries because of a pollock TAC decline. The ability of these other trawlers to reduce PSC catch rates substantially under continuation of current management is uncertain. Division of the Pacific cod quota (and accompanying PSC) among different trawl sectors (i.e., AFA CP, AFA CV, and

Non-AFA CV) could facilitate improved management of halibut bycatch by AFA sectors, but could further limit the ability of non-AFA catcher vessels to continue target catch at historic rates by segmenting the available halibut PSC.

**Table 3-44 Historical Usage of PSC in directed fisheries for allocated species plus Pacific cod (Suboption 6.1.2)**

Year Combinations	Percent of halibut PSC usage based on total trawl usage (sector usage/total usage) using average of annual percents	Percent of halibut PSC usage based on total trawl usage (sector usage/total usage) using average of total	Percent of halibut PSC usage based on trawl allowance (sector usage/trawl allowance) using average of annual percents	Percent of halibut PSC usage based on trawl allowance (sector usage/trawl allowance) using average of total
<b>Halibut</b>				
1995-2003	63.93%	63.35%	62.42%	61.84%
1997-2002	70.85%	70.61%	66.57%	66.15%
1998-2002	73.61%	73.53%	69.03%	68.65%
1998-2004	72.18%	71.92%	71.49%	71.13%
1999-2003	74.98%	74.55%	74.20%	74.00%
2000-2004	74.64%	74.18%	75.69%	75.54%
<b>Red King Crab</b>				
1995-2002	83.01%	87.49%	44.39%	37.18%
1997-2002	89.54%	92.19%	55.31%	50.39%
1998-2002	88.93%	92.13%	56.98%	50.90%
1999-2002	96.64%	96.46%	65.13%	55.53%
2000-2002	96.05%	95.78%	72.71%	62.40%
<b>C. opilio</b>				
1995-2002	83.42%	79.33%	56.38%	57.07%
1997-2002	89.85%	88.47%	53.80%	55.48%
1998-2002	91.56%	91.79%	48.30%	49.12%
1999-2002	92.29%	93.53%	40.92%	41.14%
2000-2002	95.07%	95.69%	45.81%	46.36%
<b>Zone 1 C. bairdi</b>				
1995-2002	80.16%	74.69%	51.94%	51.60%
1997-2002	87.35%	84.71%	52.41%	52.07%
1998-2002	89.76%	88.50%	46.40%	46.21%
1999-2002	92.65%	92.45%	43.29%	43.19%
2000-2002	92.98%	92.71%	42.64%	42.57%
<b>Zone 2 C. bairdi</b>				
1995-2002	84.69%	81.99%	28.96%	28.31%
1997-2002	90.45%	89.55%	30.18%	29.67%
1998-2002	92.07%	91.88%	27.85%	27.37%
1999-2002	93.32%	93.65%	25.53%	25.11%
2000-2002	95.21%	95.22%	26.10%	25.43%

Source: Amendment 80 database

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

### 3.2.5.4 Suboption 6.1.3 – Trawl Usage Adjusted for the Proportion of Amendment 80 Species Allocated Plus Pacific cod

Suboption 6.1.3 would allocate the PSC allowance to the Non-AFA Trawl CP sector based on PSC catch by all trawl vessels in the directed fishery, for each of the allocated species plus Pacific cod, multiplied by the percent of the relevant species allocated to the Non-AFA Trawl CP sector. Calculation of the PSC allocations under this suboption required some disaggregation across fisheries groups. The suboption states that trawl PSC usage should be by each PSC fishery group. However, since some PSC fishery groups are an aggregation of allocated species (such as the rock sole/other flats/flathead sole PSC fishery group) and the allocations from Components 3 and 4 are by single species, trawl PSC usage was disaggregated to by directed fishery for the allocated species and Pacific cod. In addition, to estimate the PSC allocation for the Non-AFA Trawl CP sector, proxy allocations for Pacific cod were estimated using

the method and years specified by Components 3 and 4. Recognizing that Pacific cod is apportioned between fixed gear and trawl gear, Pacific cod allocations are estimated (and stated) as a percentage of the trawl sector Pacific cod apportionment, which is used to determine the portion of the Pacific cod PSC that would be allocated to the Non-AFA Trawl CP sector.

Unlike Suboptions 6.1.1 and 6.1.2, Suboption 6.1.3 does not allocate PSC strictly based on PSC usage, but rather as a percent of total trawl usage based on historical harvest of the allocated species. As a result, the effects of anomalies in PSC catch rates that are within the sector (relatively high or low rates) are reduced, since the option has an averaging effect across all vessels in the directed fishery.

An additional effect of this suboption is that incidental catch is valued in determining PSC allocations. So, if the Non-AFA Trawl CP sector has low incidental catch of a species relative to other sectors in the computation of allocations, its allocation of PSC related to that species will be reduced, in comparison to a PSC allocation based strictly on directed fishery catch. Although it is difficult to isolate the effect of incidental catch on the PSC allocation, some general observations can be made. If the Council computes allocations under Component 3 based on total catch (including discards) under Option 3.1, the halibut PSC allocation to the Non-AFA Trawl CP sector would be less than if the Component 3 allocations are based on only retained catch under 3.2. This effect likely arises from a relatively high amount of discarded incidental catch of rock sole and flathead sole by vessels that are not part of the Non-AFA Trawl CP sector.

Table 3-45 and Table 3-46 provide the PSC allocation for the individual PSC species by allocation option and catch history years from Components 3 and 4. Like Suboptions 6.1.1 and 6.1.2, the PSC allocations to the Non-AFA Trawl CP sector increase relative to other trawlers under this suboption if more recent years are used for determining the allocations. Overall, the halibut PSC allocation to the Non-AFA Trawl CP sector would range between 39 and 71 percent, with between 29 and 61 percent for the all other trawl vessels. Looking at the amount red king crab apportioned to the Non-AFA Trawl CP sector, the allowance would range from 35 to 88 percent. The remaining 12 to 65 percent would be reserved for all other trawlers. The amount of *C. opilio* PSC allocated to the Non-Trawl CP sector would range between 45 and 88 percent. The remaining 12 to 55 percent would be available for all other trawlers. Allocation of Zone 1 *C. bairdi* would range between 32 and 78 percent, leaving between 22 and 68 percent for all other trawlers. Finally, the allocation of Zone 2 *C. bairdi* would range between 47 percent and 88 percent for the Non-AFA Trawl CP sector. The remaining 12 to 53 percent would be for all other trawlers.

PSC allocation calculations using Option 3.3 (retained catch of the sector divided by total catch of all sectors) could result in an allocation to the Non-AFA Trawl CP sector that is insufficient to harvest their entire allocation of the target species, if the sector cannot reduce its PSC catch rates substantially from current levels. The fisheries most impacted by a reduction in PSC would be those that have high bycatch rates of halibut. For example, the Non-AFA Trawl CP sector usage of Amendment 80 species since 1995 have ranged from a low of 1,379 mt in 1995 to high of 2,678 mt in 2002. Assuming 3,400 mt of halibut allowance for trawl sectors, halibut PSC allocated to the Non-AFA Trawl CP sector using Option 3.3 would range from 1,340 mt to 1,743 mt, far short of their historic usage of halibut PSC since 1996. Low allocations of other PSC species might also affect fisheries under Option 3.3, but not to the same extent as halibut. In contrast, too high of a PSC allocation to the Non-AFA Trawl CP sector could leave too little for the remaining trawlers to harvest their directed fisheries, if current catch rates are maintained. Looking at another example, the halibut usage for all groundfish by trawl vessels other than Non-AFA Trawl CP vessels ranged from a low of 473 mt in 2001 to a high of 2,228 in 1995. If the Council selected Option 3.2 (retained catch of the sector divided by retain catch of all sectors) for the years 2000-2003, the amount of halibut PSC remaining for all other trawl sectors, assuming 3,400 mt allowance, would result in an allocation of 1,028 mt. This allocation appears sufficient given halibut usage in recent years. However, this allocation could be insufficient if effort were to shift away from pollock and into Pacific cod or yellowfin sole in the future and current PSC catch rates are not reduced. The ability of these other trawlers to reduce PSC catch rates substantially under continuation of current management is uncertain.

In the most recent years, however, these sectors have lower levels of halibut bycatch than would be allocated to the general limited access under most of the allocation options. It is possible that halibut bycatch could constrain target catch of participants in the general limited access fisheries below historic levels depending on bycatch rates. In addition, the general limited access might be unable to increase their harvests of flatfish or Pacific cod in the event that effort is shifted to those fisheries because of a pollock TAC decline. The ability of these other trawlers to reduce PSC catch rates substantially under continuation of current management is uncertain. Division of the Pacific cod quota (and accompanying PSC) among different trawl sectors (i.e., AFA CP, AFA CV, and Non-AFA CV) could facilitate improved management of halibut bycatch by AFA sectors, but could further limit the ability of non-AFA catcher vessels to continue target catch at historic rates by segmenting the available halibut PSC.

**Table 3-45 Trawl PSC usage for halibut adjusted for the proportion of Amendment 80 species allocated plus Pacific cod**

Year Combinations	Retain/Retain		Total/Total		Retain/Total	
	with AFA-9	without AFA-9	with AFA-9	without AFA-9	with AFA-9	without AFA-9
Total Trawl Halibut PSC Allocation (usage based)						
1995-2003	60.39%	61.61%	56.74%	56.79%	40.69%	40.68%
1997-2002	66.48%	67.49%	62.65%	62.84%	46.52%	46.60%
1998-2002	71.00%	71.36%	66.67%	66.58%	50.81%	50.69%
1998-2004	68.57%	68.81%	64.58%	64.51%	49.86%	49.78%
1999-2003	70.01%	70.01%	67.10%	67.10%	51.51%	51.51%
2000-2004	69.77%	69.77%	66.06%	66.06%	51.05%	51.05%
Total Trawl Halibut PSC Allocation (allowance based)						
1995-2003	58.49%	59.67%	54.95%	55.00%	39.41%	39.40%
1997-2002	62.28%	63.23%	58.69%	58.87%	43.58%	43.66%
1998-2002	66.29%	66.62%	62.25%	62.16%	47.44%	47.33%
1998-2004	66.30%	66.54%	62.44%	62.38%	48.21%	48.13%
1999-2003	69.94%	69.94%	66.09%	66.09%	50.73%	50.73%
2000-2004	69.63%	69.63%	65.93%	65.93%	50.95%	50.95%

Source: Amendment 80 database

**Table 3-46 PSC Trawl usage for red king crab, *C. opilio*, and *C. bairdi* adjusted for the proportion of Amendment 80 species allocated plus Pacific cod**

Year Combinations	Total/Total		Retain/Retain		Retain/Total	
	usage based	allowance based	usage based	allowance based	usage based	allowance based
<b>Red King Crab</b>						
1995-2003	60.78%	25.83%	80.29%	34.12%	34.98%	14.86%
1997-2002	61.94%	33.86%	81.00%	44.28%	34.74%	18.99%
1998-2002	63.54%	35.10%	82.36%	45.50%	35.73%	19.74%
1998-2003	64.48%	35.62%	83.05%	45.89%	36.97%	20.42%
1999-2003	68.42%	39.39%	87.58%	50.42%	39.56%	22.78%
2000-2003	69.87%	45.52%	87.41%	56.95%	42.35%	27.59%
<b><i>C. opilio</i></b>						
1995-2003	60.09%	43.23%	72.21%	51.95%	44.51%	32.02%
1997-2002	64.60%	40.51%	77.16%	48.38%	48.45%	30.38%
1998-2002	68.92%	36.88%	82.24%	44.01%	51.63%	27.63%
1998-2003	70.06%	37.49%	83.06%	44.45%	53.24%	28.49%
1999-2003	71.72%	31.55%	84.44%	37.14%	55.44%	24.39%
2000-2003	75.25%	36.46%	88.09%	42.68%	58.82%	28.50%

Year Combinations	Total/Total		Retain/Retain		Retain/Total	
	usage based	allowance based	usage based	allowance based	usage based	allowance based
<b>Zone 1 <i>C. bairdi</i></b>						
1995-2003	53.43%	36.91%	69.69%	48.15%	31.94%	22.07%
1997-2002	58.16%	35.75%	74.69%	45.91%	34.87%	21.43%
1998-2002	61.16%	31.93%	77.92%	40.68%	37.06%	19.35%
1998-2003	62.09%	32.42%	78.60%	41.04%	38.30%	20.00%
1999-2003	61.04%	28.52%	77.43%	36.18%	36.80%	17.20%
2000-2003	62.17%	28.54%	78.25%	35.93%	37.10%	17.04%
<b>Zone 2 <i>C. bairdi</i></b>						
1995-2003	62.76%	21.67%	75.24%	25.98%	47.22%	16.30%
1997-2002	66.69%	22.10%	79.81%	26.44%	50.85%	16.85%
1998-2002	70.17%	20.90%	83.95%	25.01%	53.35%	15.89%
1998-2003	71.15%	21.20%	84.67%	25.22%	54.72%	16.30%
1999-2003	72.77%	19.51%	86.78%	23.26%	56.06%	15.03%
2000-2003	73.69%	19.68%	87.79%	23.45%	56.73%	15.15%

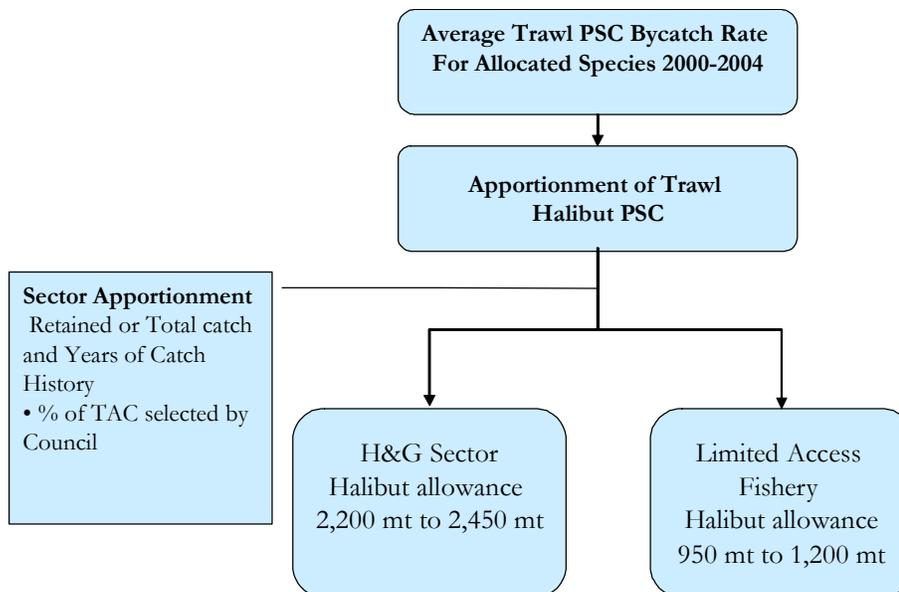
Source: Amendment 80 database

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

### 3.2.5.5 Suboption 6.1.4 – Trawl Bycatch Rate

In February 2006, the Council added a new PSC allocation suboption. Figure 3-4 provides a graphical depiction of the new PSC suboption. The apportionment of the trawl PSC under this suboption would be based on the trawl PSC bycatch rate in each of the target fisheries from 2000 to 2004. This is a different approach compared to Suboptions 6.1.1, 6.1.2, and 6.1.3, which are based on PSC usage. One of the potential advantages of this suboption compared to the other PSC suboptions is that PSC apportionment will adjust annually as the TAC for each of the Amendment 80 species changes relative to the others over time. To some degree this approach better reflects the dynamic nature of the North Pacific fishery. In comparison, Suboptions 6.1.1, 6.1.2, and 6.1.3 apportion PSC at constant rate thru time. As seen in the yellowfin sole fishery, TACs can change over time resulting in shifting PSC demands between fishery sectors. For example, halibut PSC usage in the yellowfin sole fishery was higher between 1995 and 1999 due to higher TAC. As TAC for yellowfin sole declined in more recent years, halibut PSC usage declined. If in the future, yellowfin sole TAC were to increase relative to the other allocated species, usage of halibut PSC allowance would likely increase in the yellowfin sole relative to other Amendment 80 species.

To prevent dramatic shifts in PSC apportionment and to limit the potential of one group being allocated a disproportionate amount of halibut PSC, the Council in February 2006 added halibut PSC allowance minimums and maximums for the Non-AFA Trawl CP sector and the trawl limited access fishery. For the Non-AFA Trawl CP sector, the minimum allocation of halibut PSC allowance would be 2,200 mt and the maximum allowance would be 2,450 mt. For the trawl general limited access fishery (all trawl vessels except the Non-AFA Trawl CP sector), the minimum halibut PSC allowance would be 950 mt and the maximum allowance would be 1,200 mt. What is interesting about these minimums and maximums for both the Non-AFA Trawl CP sector and the trawl limited access fishery is that both groups have either been over the maximum or under the minimum every year since 1995 (see Table 3-40). For the Non-AFA Trawl CP sector, they were below the minimum 4 times (1995-1998) and above the maximum 6 times (1999-2004), while for the trawl limited access fishery it was just the opposite, 6 times below the minimum (1999-2004) and 4 times above the maximum (1995-1998).

**Figure 3-4 Flow diagram showing halibut PSC apportionment for Suboption 6.1.4**

Presented below are a series of tables showing the calculation procedures for estimating the allocation of halibut PSC to the Non-AFA Trawl CP sector. The first step is to calculate the average trawl PSC bycatch rate for the target species. Table 3-47 shows the calculations for determining the trawl halibut bycatch rate, which was determined by dividing tons of trawl halibut mortality for each target species by trawl groundfish catch for each target species. Annual trawl halibut bycatch rates from 2002 to 2004 were then averaged to determine an bycatch rate for each of the Amendment 80 species plus Pacific cod. Trawl halibut PSC bycatch rate is highest for rock sole, followed by Pacific cod and flathead sole. Atka mackerel had the lowest trawl halibut PSC bycatch rate followed by AI POP. Note that the new suboption was silent on the treatment of Pacific cod. However, based on the intent of Component 6 to allocate all of the Non-AFA Trawl CP sector's PSC in this action, the analyst included allocation of halibut PSC for the Pacific cod fishery in Suboption 6.1.4.

The next step is to apportion the trawl halibut PSC allowance between the different Amendment 80 species plus Pacific cod. Since this step would be conducted on an annual basis by selecting either the TAC for the coming year or the catch from the previous year, whichever is less, the apportionment of PSC between the different Amendment 80 species and Pacific cod will change from year to year. Table 3-48 provides the calculations used to determine the 2005 halibut PSC apportionment between the different Amendment 80 species and Pacific cod. In all cases, except rock sole, the previous year's catch was less than the 2005 TAC, so this amount was multiplied by the trawl bycatch rate for that fishery. In the case of rock sole, the 2004 season catch was higher than the 2005 TAC, so 2005 TAC was multiplied by the rock sole bycatch rate. The total amount of trawl halibut PSC for 2005 based on bycatch was 2,874 mt. This amount was then adjusted pro rata so the sum of the different apportionment amounts equals the total trawl halibut PSC allowance of 3,400 mt.

The final step is to apportion the trawl halibut PSC allowance in each of the Amendment 80 species plus Pacific cod between the Non-AFA Trawl CP sector and trawl limited access fishery. Apportionment of PSC allowance to the Non-AFA Trawl CP sector will depend on the portion of each Amendment 80 species plus an estimated allocation percent for Pacific cod.<sup>13</sup> Since the Council has not yet selected allocation amounts, Table 3-49 provides calculated estimates for 2005 halibut PSC allowance for each of the Amendment 80 species plus Pacific cod under each of the different options in Components 3 and 4. Finally, Table 3-50 and Table 3-51 provide the total estimated 2005 halibut PSC allowance apportioned to the Non-AFA Trawl CP sector in metric tons and percent of 3,400 mt trawl allocation. The bolded allocation amounts are those allocations that fall within the minimum 2,200 mt to 2,450 mt maximum range established in this suboption. Looking at retained/retained without AFA 9 data, only the allocation percents associated with 1995 to 2003 and 1997 to 2002 provided a 2005 halibut PSC allowance amount between the minimum and maximum range. Total/total calculations without AFA 9 data provided four estimated 2005 halibut PSC allowance allocations that are within the minimum and maximum range, while only 1999 to 2003 and 2000 to 2004 were outside the range. All of the estimated 2005 halibut PSC apportionment amounts using retained/total allocation calculation are well below the minimum allocation amount for the Non-AFA Trawl CP sector. Overall, it appears that if the Council selects allocation amounts for the Amendment 80 species similar to current fishing levels, the 2,450 mt ceiling will likely require the sector to reduce their halibut PSC bycatch rate.

**Table 3-47 Halibut mortality by target, groundfish catch by target, and halibut bycatch rate from 2002-2004**

<b>Tons of halibut mortality by target</b>						
<b>Year</b>	<b>Atka Mackerel</b>	<b>Flathead Sole</b>	<b>Rock Sole</b>	<b>Rockfish</b>	<b>Yellowfin Sole</b>	<b>Pacific Cod</b>
2002	44	206	656	61	923	1,024
2003	84	152	986	67	720	1,469
2004	57	438	536	57	401	1,578
<b>Groundfish Catch by Target</b>						
<b>Year</b>	<b>Atka Mackerel</b>	<b>Flathead Sole</b>	<b>Rock Sole</b>	<b>Rockfish</b>	<b>Yellowfin Sole</b>	<b>Pacific Cod</b>
2002	16,652	20,851	41,157	8,292	104,116	83,538
2003	55,269	18,169	37,687	10,496	96,125	96,694
2004	53,759	26,910	46,106	7,999	74,077	106,513
<b>Halibut Bycatch Rate</b>						
<b>Year</b>	<b>Atka Mackerel</b>	<b>Flathead Sole</b>	<b>Rock Sole</b>	<b>Rockfish</b>	<b>Yellowfin Sole</b>	<b>Pacific Cod</b>
2002	0.0027	0.0099	0.0159	0.0074	0.0089	0.0123
2003	0.0015	0.0084	0.0262	0.0064	0.0075	0.0152
2004	0.0011	0.0163	0.0116	0.0071	0.0054	0.0148
<b>Average of totals</b>	<b>0.0015</b>	<b>0.0121</b>	<b>0.0174</b>	<b>0.0069</b>	<b>0.0074</b>	<b>0.0142</b>

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

<sup>13</sup> Pacific cod is not allocated to the Non-AFA Trawl CP sector under this action. Amendment 85 presents options to allocate Pacific cod to the Non-AFA Trawl CP sector.

**Table 3-48 2005 TAC, 2004 Catch, and 2005 halibut apportionment by Amendment 80 species plus Pacific cod (mt)**

	<b>Atka Mackerel</b>	<b>Flathead Sole</b>	<b>Rock Sole</b>	<b>Rockfish</b>	<b>Yellowfin Sole</b>	<b>Pacific Cod</b>	<b>Total</b>
2005 TAC (mt)	63,000	19,500	41,500	11,200	90,686	89,559	
2004 Catch (mt)	55,963	16,849	47,734	10,493	69,021	82,432	
2005 Halibut apportionment (mt)	83	203	723	73	514	1,170	2,765.71
Adjusted 2005 Halibut apportionment (mt)	101	250	889	89	632	1,438	3,400.00

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

**Table 3-49 Estimated apportionment of 2005 halibut PSC for the Non-AFA Trawl CP sector using percent allocations from Components 3 and 4 (mt)**

<b>Apportionment of halibut PSC for the Non-AFA Trawl CP Sector by fishery (mt)</b>						
<b>Years</b>	<b>Retained/Retained</b>		<b>Total/Total</b>		<b>Retain/Total</b>	
	<b>With AFA 9</b>	<b>Without AFA 9</b>	<b>With AFA 9</b>	<b>Without AFA 9</b>	<b>With AFA 9</b>	<b>Without AFA 9</b>
<b>Atka Mackerel</b>						
1995-2003	93	100	94	99	81	86
1997-2002	94	100	94	99	84	89
1998-2002	98	101	97	101	88	90
1998-2004	99	101	98	100	84	86
1999-2003	101	101	100	100	87	87
2000-2004	101	101	100	100	84	84
<b>Flathead Sole</b>						
1995-2003	241	242	202	204	156	158
1997-2002	241	242	207	208	163	163
1998-2002	242	242	211	211	169	169
1998-2004	244	244	211	212	167	168
1999-2003	243	243	210	210	169	169
2000-2004	244	244	210	210	166	166
<b>AI Pacific Ocean Perch</b>						
1995-2003	88	88	88	88	76	76
1997-2002	89	89	89	89	78	78
1998-2002	89	89	89	89	78	78
1998-2004	89	89	88	88	76	76
1999-2003	88	88	88	88	76	76
2000-2004	88	88	88	88	75	75

Apportionment of halibut PSC for the Non-AFA Trawl CP Sector by fishery (mt)						
Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
<b>Rock Sole</b>						
1995-2003	835	843	729	737	326	329
1997-2002	835	842	744	749	330	332
1998-2002	849	849	760	760	332	333
1998-2004	859	859	778	779	360	360
1999-2003	857	857	780	780	354	354
2000-2004	862	862	796	796	385	385
<b>Yellowfin Sole</b>						
1995-2003	493	505	482	492	370	378
1997-2002	522	530	511	518	399	405
1998-2002	559	559	543	543	418	419
1998-2004	571	571	557	557	440	440
1999-2003	576	576	567	567	450	450
2000-2004	589	589	580	580	469	469
<b>Pacific Cod</b>						
1995-2003	559	577	567	536	495	471
1997-2002	579	593	573	552	540	522
1998-2002	688	699	661	650	658	646
1998-2004	737	745	710	703	708	700
1999-2003	805	805	770	770	766	766
2000-2004	780	780	748	748	748	748

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

**Table 3-50 Estimated 2005 halibut allocation to the Non-AFA Trawl CP sector under Suboption 6.1.4 (mt)**  
**(bolded number indicate PSC allocation within the 2,200 mt to 2,450 mt range established under Suboption 6.1.4, while embossed numbers are outside this range)**

Estimated 2005 Halibut Allocation to the Non-AFA Trawl CP Sector under Suboption 6.1.4 (mt)						
Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
1995-2003	<b>2,310</b>	<b>2,354</b>	<b>2,161</b>	<b>2,157</b>	1,504	1,498
1997-2002	<b>2,360</b>	<b>2,395</b>	<b>2,217</b>	<b>2,216</b>	1,593	1,589
1998-2002	2,525	2,539	<b>2,361</b>	<b>2,354</b>	1,743	1,736
1998-2004	2,598	2,608	<b>2,443</b>	<b>2,439</b>	1,835	1,831
1999-2003	2,671	2,671	2,515	2,515	1,902	1,902
2000-2004	2,665	2,665	2,523	2,523	1,927	1,927

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

**Table 3-51 Estimated 2005 halibut allocation to the Non-AFA Trawl CP sector under Suboption 6.1.4 9 (bolded number indicate PSC allocation within the 2,200 mt to 2,450 mt range established under Suboption 6.1.4, while embossed numbers are outside this range)**

Estimated 2005 Halibut Allocation to the Non-AFA Trawl CP Sector under Suboption 6.1.4 (percent of 3,400 )						
Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
1995-2003	<b>68%</b>	<b>69%</b>	<b>64%</b>	<b>63%</b>	44%	44%
1997-2002	<b>69%</b>	<b>70%</b>	<b>65%</b>	<b>65%</b>	47%	47%
1998-2002	74%	75%	<b>69%</b>	<b>69%</b>	51%	51%
1998-2004	76%	77%	<b>72%</b>	<b>72%</b>	54%	54%
1999-2003	79%	79%	74%	74%	56%	56%
2000-2004	78%	78%	74%	74%	57%	57%

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

Table 3-52 shows the trawl bycatch rate for red king crab, *C. opilio*, *C. bairdi* Zone 1, and *C. bairdi* Zone 2 in the BSAI from 2000 to 2002.<sup>14</sup> The PSC bycatch rate for each of the crab species was calculated using the same method for halibut PSC. The trawl bycatch rates were then used to determine the apportionment of crab between the Amendment 80 species and Pacific cod followed by apportioning the allowance to the Non-AFA Trawl CP sector. Table 3-53 and Table 3-54 depict the estimated 2005 allocation of each of the crab PSC species to the Non-AFA Trawl CP sector. With the exception of red king crab PSC allocation amounts calculated using retain/total, none of the estimated 2005 crab PSC allowance calculations would appear to limit directed fishing for any of the Amendment 80 species for the Non-AFA Trawl CP sector, assuming current PSC bycatch rates.

One drawback of this approach is that the calculated fishery apportionment amount is adjusted pro rata such that sums equal the overall trawl PSC allowance even for partially utilized PSC species like crab. In other words, under this suboption, if after apportioning red king crab among the Amendment 80 species and Pacific cod, the sum of the calculated red king crab PSC allowance necessary to conduct directed fishing is less than overall trawl PSC allowance set during final specifications, the fishery apportion calculations are adjusted upward such that all of the PSC allowance is apportioned between the different fisheries. The effect of this calculation is the entire trawl PSC allowance will be allocated between the Non-AFA Trawl CP sector and the trawl limited access fishery. If it's the Council's intent to limit the Non-AFA Trawl CP sector to their crab PSC usage, one possible approach would be to eliminate the pro rata adjustment to the fishery apportionment calculations for the crab PSC species. This would adjust the apportionment of crab between the trawl sectors to their bycatch rate.

Unlike the halibut PSC, crab PSC minimums and maximums were not provided at the February 2006 meeting. If the Council would like to have minimums and maximums for the crab PSC species, these amounts will need to be provided. However, given that halibut PSC allowance is fully utilized and the four crab PSC allowances are often not fully utilized, it may not be necessary to establish minimums and maximums for the crab PSC allowances. Recall, the intent of limiting PSC was to prevent one group from being allocated a disproportionate amount of PSC and thus effecting directed fishing for the other group. Since most of the crab PSC species are rarely fully utilized, crab PSC allocation between the sectors does not impose the same level of constraints as halibut. If, however, the Council would like to establish minimums and maximums for each of the crab PSC species, Table 3-43, Table 3-44, and Table 3-45 provide historical PSC usage allocation percentages for the Non-AFA Trawl CP sector.

<sup>14</sup> Since data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi* Zone 1, and *C. bairdi* Zone 2, 2000 to 2002 was used as a proxy until the data becomes available.

**Table 3-52 Average trawl bycatch rate for red king crab, *C. opilio*, *C. bairdi* Zone 1, and *C. bairdi* Zone 2 from 2000 to 2002**

<b>Bycatch Rate for Red King Crab (animals per mt of groundfish)</b>						
Year	Atka Mackerel	Flathead Sole	Rock Sole	Rockfish	Yellowfin Sole	Pacific Cod
2000	0.0000	0.0037	1.1695	0.5426	0.1846	0.0621
2001	0.0000	0.0189	0.8849	0.0000	0.3648	0.0514
2002	0.0138	0.0117	1.5275	0.0000	0.2180	0.2425
Average	0.0048	0.0108	1.2229	0.0665	0.2534	0.1309
<b>Bycatch Rate for <i>C. opilio</i> crab (animals per mt of groundfish)</b>						
2000	0.0068	8.9291	3.2184	0.1404	26.2042	1.6670
2001	0.0000	16.5707	7.9752	0.0000	11.7864	0.7592
2002	0.0003	7.9378	2.4805	0.7162	6.5827	1.7687
Average	0.0026	11.2767	4.1715	0.4052	14.4835	1.5034
<b>Bycatch Rate for <i>C. bairdi</i> crab Zone 1 (animals per mt of groundfish)</b>						
2000	0.0000	0.0338	4.1940	0.0000	0.8912	0.6872
2001	0.0000	0.4490	4.4677	0.0000	1.3745	0.9437
2002	0.0000	0.0000	6.9667	0.0000	0.2499	1.7303
Average	0.0000	0.1663	5.2393	0.0000	0.8074	1.1565
<b>Bycatch Rate for <i>C. bairdi</i> crab Zone 2 (animals per mt of groundfish)</b>						
2000	0.0000	5.9189	0.2098	0.0149	4.3542	0.3286
2001	0.0000	9.2049	4.4451	0.0000	2.2177	0.5349
2002	0.0000	9.8504	1.9291	0.0059	2.3509	1.0802
Average	0.0000	7.9912	1.8945	0.0050	2.9492	0.6716

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.**Table 3-53 Estimated 2005 apportionment of trawl red king crab, *C. opilio*, *C. bairdi* Zone 1, and *C. bairdi* Zone 2 PSC to the Non-AFA Trawl CP sector under Suboption 6.1.4 (number of animals)**

Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
<b>Red King Crab (animals)</b>						
1995-2003	151,408	153,526	137,041	138,273	76,079	76,680
1997-2002	153,520	155,284	140,867	141,663	79,242	79,615
1998-2002	159,566	159,772	146,469	146,408	82,853	82,732
1998-2004	162,488	162,634	150,591	150,565	88,547	88,481
1999-2003	163,787	163,787	152,541	152,541	89,420	89,420
2000-2004	164,737	164,737	155,061	155,061	94,334	94,334
<b><i>C. opilio</i> (animals)</b>						
1995-2003	3,552,813	3,618,788	3,348,577	3,399,847	2,453,817	2,491,566
1997-2002	3,693,661	3,741,526	3,507,029	3,543,410	2,619,019	2,645,883
1998-2002	3,910,125	3,912,942	3,701,686	3,702,171	2,758,894	2,758,502
1998-2004	3,990,481	3,992,473	3,793,389	3,794,103	2,886,073	2,886,174
1999-2003	4,030,716	4,030,716	3,854,244	3,854,244	2,950,712	2,950,712
2000-2004	4,088,993	4,088,993	3,920,681	3,920,681	3,048,109	3,048,109

<b>C. bairdi Zone 1 (animals)</b>						
1995-2003	701,771	712,009	636,436	638,654	358,581	358,635
1997-2002	711,022	719,510	652,418	653,685	374,588	374,220
1998-2002	745,080	746,826	683,146	681,780	399,648	398,030
1998-2004	761,751	762,985	705,175	704,374	428,639	427,674
1999-2003	772,918	772,918	718,291	718,291	436,734	436,734
2000-2004	774,331	774,331	727,162	727,162	456,530	456,530
<b>C. bairdi Zone 2 (animals)</b>						
1995-2003	2,235,022	2,266,802	2,038,209	2,061,869	1,461,349	1,478,094
1997-2002	2,292,654	2,316,687	2,116,519	2,132,331	1,547,306	1,558,306
1998-2002	2,396,934	2,399,349	2,216,538	2,217,011	1,631,324	1,631,049
1998-2004	2,440,908	2,442,615	2,265,233	2,265,900	1,692,214	1,692,341
1999-2003	2,463,936	2,463,936	2,293,346	2,293,346	1,725,981	1,725,981
2000-2004	2,487,864	2,487,864	2,322,221	2,322,221	1,764,504	1,764,504

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

**Table 3-54 Estimated 2005 apportionment of trawl red king crab, *C. opilio*, *C. bairdi* Zone 1, and *C. bairdi* Zone 2 PSC to the Non-AFA Trawl CP sector under Suboption 6.1.4 (percent of 2005 allowance)**

Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
<b>Red King Crab (% of 2005 allowance)</b>						
1995-2003	83%	84%	75%	76%	42%	42%
1997-2002	84%	85%	77%	78%	43%	44%
1998-2002	88%	88%	80%	80%	45%	45%
1998-2004	89%	89%	83%	83%	49%	49%
1999-2003	90%	90%	84%	84%	49%	49%
2000-2004	90%	90%	85%	85%	52%	52%
<b><i>C. opilio</i> (% of 2005 allowance)</b>						
1995-2003	79%	81%	75%	76%	55%	55%
1997-2002	82%	83%	78%	79%	58%	59%
1998-2002	87%	87%	82%	82%	61%	61%
1998-2004	89%	89%	84%	84%	64%	64%
1999-2003	90%	90%	86%	86%	66%	66%
2000-2004	91%	91%	87%	87%	68%	68%
<b><i>C. bairdi</i> Zone 1 (% of 2005 allowance)</b>						
1995-2003	77%	79%	70%	70%	40%	40%
1997-2002	78%	79%	72%	72%	41%	41%
1998-2002	82%	82%	75%	75%	44%	44%
1998-2004	84%	84%	78%	78%	47%	47%
1999-2003	85%	85%	79%	79%	48%	48%
2000-2004	85%	85%	80%	80%	50%	50%

Years	Retained/Retained		Total/Total		Retain/Total	
	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9	With AFA 9	Without AFA 9
<b>C. bairdi Zone 2 (% of 2005 allowance)</b>						
1995-2003	81%	83%	74%	75%	53%	54%
1997-2002	83%	84%	77%	78%	56%	57%
1998-2002	87%	87%	81%	81%	59%	59%
1998-2004	89%	89%	82%	82%	62%	62%
1999-2003	90%	90%	83%	83%	63%	63%
2000-2004	91%	91%	85%	85%	64%	64%

Source: Amendment 80 database (PSC Suboption 4.xls February 28, 2006)

At this time, data for 2003 and 2004 is not available for red king crab, *C. opilio*, *C. bairdi*.

### 3.2.5.6 PSC Allocation Reduction

As noted above, Option 6.2 would reduce the allocation of PSC allowance to the Non-AFA Trawl CP sector. Specifically, under the suboptions considered by the Council, the Non-AFA Trawl CP sector would be allocated 60 percent, 75 percent, 90 percent, 95 percent, or 100 percent of their historic PSC usage. The language in the option makes it clear that the reduction in the PSC allocation does not go to the other trawl sectors. The intent of the language is to reduce the overall PSC removals from the BSAI.

As an example of the impacts these PSC reductions would have, Table 3-55 shows halibut PSC allocation to the Non-AFA Trawl CP sector using allocation numbers from Suboption 6.1.1 after reductions are made. At 60 percent of the original allocation of halibut PSC, the Non-AFA Trawl CP sector would receive, depending on the catch history years selected, between 41 and 49 percent of the halibut PSC. At 75 percent of the halibut PSC allocation, the sector would be apportioned between 51 and 61 percent. At 90 percent, the allocation would range between 61 and 72 percent. At 95 percent, the allocation would range between 64 and 77 percent. There is some question whether a 5 percent reduction in PSC would result in the sector leaving unharvested groundfish allocation. However, it becomes apparent that as the PSC allocation to the Non-AFA Trawl CP sector is reduced significantly from their historic average usage, the sector will be less likely to harvest their groundfish allocation. At 60 and 75 percent of the original calculation, it is likely that the sector will not have enough PSC to fully harvest their entire allocation of the Amendment 80 species at current TACs and PSC catch rates. Whether the sector can make the substantial PSC catch rate reductions necessary to allow full harvest of the sector's allocations under this suboption cannot be determined.

In June 2005, the Council added two additional suboptions. One suboption would phase in the PSC reduction at 5 percent for every year. Although this would allow some time to adjust to the lower PSC allocation, the long run effect on the Non-AFA Trawl CP sector will likely be similar to the other reduction suboptions. In general, significant reductions from the sector's historical PSC usage could strand a portion of the sector's allocation, if PSC catch rates cannot be reduced substantially from current levels under cooperative fishing. The second suboption would apply the PSC reductions only to those vessels that do not participate in a cooperative. Depending on the PSC reduction percentage selected, this would be a significant incentive for participants in the Non-AFA Trawl CP sector to join a cooperative.

**Table 3-55 Reductions in halibut PSC allocations to the Non-AFA Trawl CP based on average annual percent of PSC usage by the Non-AFA Trawl CP sector**

Year Combination	60% of the halibut PSC allocation (mt)	75% of the halibut PSC allocation (mt)	90% of the halibut PSC allocation (mt)	95% of the halibut PSC allocation (mt)	100% of the halibut PSC allocation (mt)
1995-2003	40.69%	50.86%	61.03%	64.42%	67.81%
1997-2002	44.50%	55.63%	66.76%	70.47%	74.17%
1998-2002	46.46%	58.07%	69.69%	73.56%	77.43%

Year Combination	60% of the halibut PSC allocation (mt)	75% of the halibut PSC allocation (mt)	90% of the halibut PSC allocation (mt)	95% of the halibut PSC allocation (mt)	100% of the halibut PSC allocation (mt)
1998-2004	46.88%	58.60%	70.32%	74.22%	78.13%
1999-2003	48.12%	60.16%	72.19%	76.20%	80.21%
2000-2004	48.78%	60.98%	73.17%	77.24%	81.30%

Source: Amendment 80 database.

### 3.2.6 Component 7 – Identifies the vessels that are in the Non-AFA Trawl CP Sector

Component 7 defines eligibility requirements for the Non-AFA Trawl CP sector. Component 7 limits access to the Non-AFA Trawl CP sector so it is consistent with the qualifying criteria for the sector defined by the BSAI Catcher Processor Capacity Reduction Program (the “Capacity Reduction Program”). The Capacity Reduction Program was included in the Department of Commerce and Related Agencies Appropriations Act, 2005, which is part of Public Law No. 108-447. The Capacity Reduction Program not only authorizes \$75 million to reduce the capacity of the catcher processor fleets operating in the BSAI, but also defines eligibility to participate in the non-pollock groundfish fisheries<sup>15</sup> as a trawl catcher processor.

Based on the recommendation of NOAA General Counsel, the Council has defined the non-AFA Trawl Catcher Processor sector using the specific definition from section 219(a)(7)(A) through (C) of the Capacity Reduction Program. NOAA GC has stated that the Council has no authority to deviate from the eligibility criteria of the Capacity Reduction Program.<sup>16</sup>

<sup>15</sup> The Program defines the non-pollock groundfish fisheries as the Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole fisheries.

<sup>16</sup> Prior to the implementation of the Capacity Reduction Program, the Council had defined four eligibility options for the Non-AFA Trawl CP sector that had more stringent catch requirements and considered catch in different years from the Capacity Reduction Program. In order to determine the effect of the Capacity Reduction Program on the Council’s authority to develop alternatives for Amendment 80, the Council at the December 2004 meeting, asked NOAA GC to provide clarification of this new program at the February 2005 meeting. NOAA GC has provided that advice in a series of memoranda, which are attached to this analysis at Appendix 4.

**\*Component 7**

**The BSAI non-pollock groundfish CP buyback legislation establishes the vessels eligible to participate as a catcher processor in the BSAI non-pollock groundfish fisheries. The members of the Non-AFA Trawl Catcher Processor subsector are defined as the owner of each trawl CP:**

- a). **that is not an AFA Trawl CP**
- b). **to whom a valid LLP license that is endorsed for BSAI Trawl CP fishing activity has been issued; and**
- c). **that the Secretary determines who has harvested with trawl gear and processed not less than a total of 150 mt of non-pollock groundfish during the period January 1, 1997 – through December 31, 2002.**

**This definition establishes the vessels that can participate in the Amendment 80 program.**

**Restrict LLPs that are used for eligibility in Amendment 80 (either to be included in the Non-AFA CP sector or to be used in Amendment 80 cooperative formation) from being used outside of the Amendment 80 sector, except that any eligible vessel which is authorized to fish pollock under the AFA would still be authorized to fish under the statute.**

**Only history from eligible vessels will be credited in the program. The catch history credited to an eligible vessel will be catch history of that vessel. The catch history credited to an eligible vessel for the first license assigned to that vessel will only be the catch history of the eligible vessel. The catch history of any vessel that meets the non-AFA and catch criteria of Component 7 which has sunk, is lost, or becomes inoperable, or becomes otherwise ineligible during or after the qualifying period will be credited to the license that arose from the vessel. Any such license assigned to an eligible vessel will be credited with the catch history during the Component 10 period of the eligible Non-AFA Trawl CP from which the license arose, except that no history can be assigned to more than one vessel at a given time. Once the catch history has been assigned to the license, that license must be used on an eligible Non-AFA Trawl CP vessel.**

NOAA GC has also advised the Council concerning the application of these eligibility criteria. The memo providing that advice is attached as Appendix 4. The NOAA GC memo states that eligibility for the sector is based on a person meeting all three criteria. A person must own a trawl catcher processor that 1) is not an AFA trawl catcher processor, 2) has assigned to it a valid LLP license that is endorsed for BSAI trawl fishing activity, and 3) meets the catch and processing qualifying criteria. Each of these requirements and their interactions are discussed below. The order of this discussion deviates from that of the statute for clarity.

First (under a), the catcher processor must not be qualified for the directed pollock fishery under the AFA, where AFA qualified includes only vessels qualified under Section 208(e)(1) through (20) of the AFA. Under these terms, a vessel that qualifies for the directed pollock fishery under Section 208(e)(21) of the AFA is not considered AFA trawl catcher processor and could be a non-AFA trawl catcher processor, provided that vessel meets all other non-AFA trawl catcher processor qualifying criteria.

Second (under c), the vessel must have harvested with trawl gear and processed at least 150 metric tons of non-pollock groundfish between January 1, 1997 and December 31, 2002. Relying on the statute's definition, these harvests must be of Bering Sea or Aleutian Islands Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole.

Third (under b), the vessel must have assigned to it a valid trawl catcher processor LLP license endorsed for the Bering Sea and/or the Aleutian Islands. This third requirement is not time constrained and therefore creates some uncertainty concerning qualification for the sector. Specifically, vessels meeting the "non-AFA" and "catch and processing threshold" requirements will be qualified for the fisheries at those times that the vessel meets the "license assignment" requirement. So, a vessel that qualifies at implementation may be disqualified from the fisheries, if its BSAI license is assigned to a different vessel. More problematic, a vessel that meets the "non-AFA" and "catch and processing threshold" may not qualify when the program is implemented because it does not have an assigned license. If at a later time a

license is assigned to the vessel, that vessel will be qualified for the sector. So, any vessel that meets the “non-AFA” requirement of a) and the catch and processing requirement of c), will be determined to qualify for the fishery any time that it meets the qualification of b). As a result, it is possible that a vessel’s qualification for the fishery could change over time, if a license is either placed on the vessel or removed from the vessel.

The Council in October 2005 added language that would restriction LLPs that are used for eligibility in Amendment 80 from being used outside of the Amendment 80 sector. The intent of this language was to prevent sector participants using the benefit of the cooperative program by leasing their catch history to another cooperative member and then take that same license and participate in other sectors. Since all of the species in the BSAI or GOA may not have sideboards, this restriction compliments the sideboard limits placed on the qualified licenses and vessels in Component 12. The Council did clarify in February 2006 that vessels authorized to fish pollock under the AFA would be exempt from this restriction.

In February 2006, the Council added new language to Component 7 that would credit a qualifying vessel’s history to that vessel. This provision would credit the eligible vessel with its own history for the first license assigned to the vessel. In addition, an individual that stacked additional licenses from qualified vessels on the vessel would also receive that history for purposes of determining catch history in Component 10. Also included in the new language is a provision that allows catch history that was credited to vessel to be transferred to the license that arose from the vessel if the vessel sank, was lost, becomes inoperable, or becomes ineligible. Since the BSAI non-pollock groundfish catcher processor buyback legislation is steel based, allowing the catch history of sunk or lost vessel to be transferred to the license that arose from that vessel would allow the catch history to stay in the fishery and be used on another eligible vessel rather than be extinguish.

The Council in April 2006 discussed the meaning of "inoperable" and "ineligible". A reasonable interpretation of inoperable and ineligible would apply these terms to vessels that leave the fishery and are permanently unable to return. Anything more loosely defined could result in an inconsistency in the Amendment 80 regulations and the Consolidation Appropriate Act. For example, if the history of a vessel accrues to the license when the vessel leaves the fishery and is able to return, it is possible that a new owner could put an LLP license on the vessel and qualify it for the Non-AFA Trawl CP sector. Once the vessel is qualified for the sector, if the history is separated from the vessel (and is credited to the license) the vessel owner may have a reasonable claim that the intent of the Act is not being carried out. So, to limit the potential for inconsistencies with the Act, it could be appropriate to interpret "inoperable" and "ineligible" as applying only to vessels that cannot return to the fishery.

Finally, the Council in April 2006 added language that clarified that in the event that catch history is assigned to a license, that license can only be used on qualified Non-AFA CP vessels.

Based on the language in the Capacity Reduction Program and the interpretation of this program by NOAA GC, 26 vessels appear to qualify for the Non-AFA Trawl CP sector. This is reflected in Table 3-56. As noted in the table, twenty-six trawl catcher processor vessels with trawl catcher processor LLP licenses meet the “catch and processing threshold”. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002. Those vessels that failed to meet the “catch and processing threshold” had trawl CP catch history only during the 1995 and 1996 period. Of the 26 vessels meeting the threshold, 19 caught and processed BSAI groundfish every year between 1995 and 2003. Two vessels meeting the threshold did not participate in the BSAI groundfish trawl CP fishery in two or three years throughout the 1995 to 2003 period. Three vessels meeting the threshold did not participate in the BSAI trawl CP groundfish fishery for four or five years. Two vessels meeting the threshold have not participated in the BSAI trawl CP groundfish fishery since 1997. These vessels have been inactive since 1997. In each case, the license that originated on these vessels has been transferred to another vessel. If the current or future owners of these vessels acquired/assigned a trawl catcher processor LLP license endorsed for the BS or AI to these vessels, then

these vessels may be eligible to participate in the sector. However, if the license that was on a vessel at the time it sank or was lost was not the license that arose from the vessel, the catch history could be accessed through the license that arose from the vessel despite its prior transfer.

**Table 3-56 Participation patterns by year for catcher processors.**

Participation Years	Vessels meeting the catch and processing threshold	Vessels <u>not</u> meeting the catch and processing threshold	All Vessels
1995 1996 1997 1998 1999 2000 2001 2002 2003	19	0	19
1995 1996 1997 1998 1999 2000 2003	1	0	1
1997 1998 1999 2000 2001 2002 2003	1	0	1
1999 2000 2001 2002 2003	1	0	1
1995 1996 1997 1998 1999 2002	1	0	1
1995 1996 1999 2000 2001	1	0	1
1995 1996 1997	1	0	1
1996 1997	1	0	1
1995 1996	0	2	2
1996	0	1	1
1995	0	1	1
<b>Total</b>	<b>26</b>	<b>4</b>	<b>30</b>

Source: Amendment 80 database

### 3.2.7 Component 8 – Establishes Percentage of Eligible Vessels to Form Cooperative Structure

**Component 8 Establishes the number of vessels required before the cooperative is allowed to operate. No later than November 1 of each year, an application must be filed with NOAA fisheries by the cooperative with a membership list for the year.**

**In order to operate as a cooperative, membership must be comprised of at least three separate entities (using the 10% AFA rule) and must be:**

- Option 8.1 At least 15 % of the eligible vessels
- \*Option 8.2 At least 30% of the eligible vessels**
- Option 8.3 At least 67% of the eligible vessels
- Option 8.4 At least 100% of the eligible vessels
- Option 8.5 All less one distinct and separate vessel using the 10% threshold rule
- Option 8.6 All less one vessel

In order to qualify to participate in a Non-AFA trawl CP cooperative, each member must hold a valid LLP and be eligible to participate in the Non-AFA trawl CP sector. Given that cooperative eligibility is dependent upon sector eligibility, there is an estimated 26 eligible vessels. Under any option, cooperative formation requires at least three unique entities. Under Option 8.1, a cooperative must be composed of at least 15 percent of the eligible Non-AFA Trawl CP vessels allowing six cooperatives within the sector not considering any constraints imposed by requiring at least three entities. The requirement of at least three entities could limit the number of cooperatives to less than 6. Under Option 8.2, at least 30 percent of eligible licenses are necessary for cooperative formation, allowing up to a maximum of three cooperatives in the sector recognizing it could have fewer due the entity restriction. Under Option 8.3 and 8.4, 67 percent and 100 percent of eligible licenses are required to form a cooperative, allowing a single

cooperative in the sector. To form a cooperative under Option 8.5, all qualified participants less one distinct and separate license holder using the 10 percent threshold rule must join. Finally, Option 8.6 would require all licenses less one for cooperative formation. Options 8.3 to 8.6 would result in a single cooperative structure. The following analysis describes the dynamics involved with the different participation levels identified by the Council.

### **Single cooperative structures**

Single cooperative structures are those structures that, because of the membership level required for formation exceeds 50 percent of the sector, could accommodate only a single cooperative in the sector. Under a single cooperative structure (8.3, 8.4, 8.5, or 8.6), license holders qualified to harvest from the Non-AFA Trawl CP allocation would either join the sector's only cooperative or send their vessel and crew to fish in a limited access fishery. It is anticipated that qualified license holders would elect to participate in the limited access pool under two conditions. The first condition is that they would be able to generate less profit within the cooperative than they expect to be able to generate in the limited access fisheries. Many of these participants will have had relatively small catch histories during the time period that defines the cooperative allocations relative to their catching ability in the limited access fishery. Their prospects in the limited access fishery, however, depend on others with substantial catch history choosing not to join a cooperative. Persons with substantial catch histories may choose not to join a cooperative, if the terms offered by cooperative membership do not reward the catch history brought to the cooperative. These persons are likely to believe that they are not fairly rewarded by the terms offered by the cooperative agreement.

The dynamics of cooperative formation negotiations could also be affected by the enforcement of GRS requirements at the cooperative level. Since the ability to comply with GRS requirements may vary across vessels, cooperative compliance with GRS requirements will be subject to negotiation. Vessels with costly compliance might choose to use the cooperative level management to reduce retention on a vessel, negotiating the terms of that trade off in the cooperative agreement. Since the value of GRS compliance is somewhat intangible (in comparison to the value of annual allocations) analysis of the effects on negotiations is difficult. As with negotiations of other terms, a person will compare the opportunity in the limited access fishery against their cooperative opportunity. In general, participants in a cooperative should be more able to comply with GRS standards than participants in the limited access who face the time pressures of the race for fish. In a single cooperative structure, it is possible that one segment of the sector could control cooperative formation. If that segment largely consists of persons that find GRS compliance challenging and costly, it is possible that they could attempt to impose terms on persons that are well equipped to comply with GRS. Since the cooperative will control outsiders' access to the more lucrative share-based portion of the fishery, it is possible that cooperative members could gain concessions on GRS compliance terms. Using this approach, the cooperative could negotiate GRS compliance terms that are favorable to those that face relatively costly compliance, if persons outside the cooperative perceive substantial gains from joining the rationalized fishery.

The second reason a person may choose not to join a cooperative is the inability to agree to the terms and conditions defined in the cooperative agreement that do not directly impact profits. For example, a participant may not want to be involved in the internal cooperative politics, adhere to the cooperative's reporting requirements or may have other philosophical differences with a majority of the members of the cooperative or simply may not want to be part of a cooperative. However, because profits will ultimately determine whether most members of the sector will join the cooperative, balancing the power between the owners and their competing interests is a critical part of developing a cooperative structure.

The power to force changes in a cooperative agreement depends, in part, on the requirements for cooperative formation. Within a program that allows only a single cooperative, changing the percentage of eligible license holders that must join for cooperative formation will shift power among license holders. For example, if 100 percent of the sector is required for cooperative formation, the majority of

the sector could be forced to accept more demands of license holders that hold out from initially joining the cooperative. If the demands by the license holders holding-out from signing the cooperative agreement are too burdensome, the cooperative simply would not form. This scenario may not be a great hardship on qualified license holders who feel they have little to gain from a cooperative, but could be very costly for license holders that would benefit from joining a cooperative.

Fishing in a share-based fishery, such as a cooperative, is expected to increase profits for participants enough to allow for some compromise between the majority and minority views. The majority may be willing to concede some of the increase in profits to the demands of the other licenses holders to attain the benefits from cooperative fishing. On the other hand, qualified license holders that have less to gain from a slower paced fishery (or who hold less popular views) would likely want to require a higher percentage (or even 100 percent) of the sector for cooperative formation. The ability to veto cooperative formation would increase their power to negotiate terms and conditions in the cooperative agreement that they could not otherwise.

As the percentage of qualified license holders that are required to form a cooperative is reduced from 100 percent, the power structure within the sector changes. For example, if 67 percent of the eligible licenses are required to form a cooperative, 17 qualified vessels would be required to form the cooperative.<sup>17</sup> The membership level where power changes from being in the hands of those that have agreed to the terms of the cooperative and those that have not, would occur at 17 vessels. That membership level is critical because before those numbers of vessels have joined the cooperative, owners of eligible vessels that have not agreed to the terms of the cooperative wield greater power in the cooperative negotiations. However, after the eighteenth vessel joins, those that have not joined suddenly have very little leverage in cooperative negotiations. In this case, the participants that have not joined the cooperative may have to agree to the terms negotiated by the other participants of the cooperative or be excluded from its membership. Once the threshold for formation is reached, the bargaining power of those individuals owning a qualified vessel that have not agreed to its terms decreases, and the bargaining power of the members of the cooperative increases. For a cooperative to form, those wishing to establish the cooperative need to offer terms that are satisfactory to induce the minimum number of members required for cooperative formation to join that cooperative. This general principle holds for any of the percentages under consideration, and should result in a cooperative structure that more closely reflects the views of a simple majority (relative to requiring 100 percent membership) as the percentage required for formation declines toward 50 percent. When selecting the minimum percentage required for cooperative formation, the Council should consider the effect of the selected percentage on the relative bargaining power of the majority in comparison to the minority.

Debate within the sector over the appropriate percentage will probably reflect concern over who is allowed to control the terms and conditions of the cooperatives' bylaws. The power to change the bylaws results from several factors<sup>18</sup>, one of the most important is the percentage of vessels required to form the cooperative, as discussed above. Now consider individuals within the sector. If we require 18 of 27 qualified vessels to form the cooperative, and assume that part way through the negotiation process participants of 17 qualified vessels have agreed to join and 10 have not, the participants of the 17 qualified vessels need to come to terms with the demands of one of the remaining sector participants in order to form the cooperative. However, the majority is likely to agree to terms with the person that is most similar to other participants in the cooperative coalition (who is likely a person that would fare about the same under the cooperative or limited access). That person may be able to improve their position within the cooperative by agreeing to join. People favoring terms very different from the majority's or

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<sup>17</sup> If 26 vessels are used to form cooperative, then each 5% reduction in the percentage required to form a cooperative means that one less vessel is needed for cooperative formation.

<sup>18</sup> Other factors could include negotiating skills, charisma of some members, business ties within the sector, etc.

(whose potential in the limited access is substantially greater than their potential under the cooperative's terms) are the least likely to join the cooperative.

### **Multiple cooperative structures**

Under multiple cooperative structures, the membership level required for cooperative formation would be less than 50 percent, allowing more than one cooperative to form within the sector. By allowing multiple cooperatives to form, the bargaining power within the sector changes during the cooperative formation process. The Council has identified two multiple cooperative options. Under both of these options, at least 3 unique entities are required for cooperative formation; so, an owner of multiple eligible vessels could not form a cooperative as the only member. Under Option 8.1, at least 15 percent of the qualified vessels are required to form a cooperative. Under Option 8.2, at least 30 percent of the qualified vessels are required to form a cooperative. Given the sector will likely have 26 qualified vessels, this equates to 4 qualified vessels per cooperative for the 15 percent threshold and 8 qualified vessels for 30 percent threshold. In general, the smaller the number of vessels needed to form a cooperative, the easier it is to form a cooperative. Neither option precludes other members of the sector from joining a cooperative once formed, if they agree to the terms of the cooperative's bylaws. Lower member thresholds for cooperative members increase the opportunity of sector participants (particularly those with less common views or circumstances) to join a cooperative. The holders of the most divergent views can review the terms and conditions of each cooperative agreement, to determine which best meets their needs. Sector participants that do not like the conditions for membership in cooperatives that have formed could attempt to find other members of the sector willing to form a separate cooperative or join the sector limited access fishery. Alternatively, a non-member with some benefit to offer a cooperative could use two competing cooperatives to negotiate more favorable terms and conditions than could be negotiated under a structure that accommodates only a single cooperative.<sup>19</sup> If there were too few sector members that have yet to join a cooperative, that vessel would need to accept<sup>20</sup> the terms of one of the cooperatives or be forced to fish in the limited access fishery.

Some members of industry have argued that allowing multiple cooperatives to form would provide a better opportunity for the entire sector to rationalize. They are concerned that under a single cooperative structure, with less than a 100 percent membership requirement, the majority of the members of the sector could dictate their will over others that find those terms unpalatable. Those outside of the cooperative

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<sup>19</sup> In considering the effect of membership threshold levels, it is important to bear in mind that several factors could influence negotiations. The impact of these factors could vary greatly depending on the circumstances in the sector. First, a non-member's history could be attractive to a cooperative whose members have relatively small catch histories. Second, the owner of an efficient vessel could be attractive to a cooperative whose members have relatively inefficient operations. Third, owners of vessels that are more easily able to operate within the retention standards of Amendment 79 could be attractive to a cooperative. Systems that provide substantial leverage to some participants in the negotiating process (by limiting the number of cooperatives that can form) could limit the value of some of these benefits in negotiations, if efficiency in the limited access fishery is substantially less than efficiency in a cooperative fishery. This outcome is particularly problematic, if the limited access would receive a relatively small allocation with only a few participants. In this circumstance, it is possible that the limited access would not be opened, compelling the few participants that are not cooperative members to capitulate to the terms offered by the cooperative, regardless of whether the terms are reasonable. In a single cooperative structure, the non-members would only have a choice between the cooperative and the limited access. In a multiple cooperative system, non-members could join any of the sector's cooperatives or fish in the limited access. The additional cooperative opportunities presented by multiple cooperative systems not only allow additional choice, but provide additional negotiating leverage to the non-members, who can play offers from the cooperatives off each another. This additional leverage would not allow the non-member to demand terms that exceed the benefits to the cooperative of the new member, but would limit the ability of the cooperative to impose terms that under value the benefits of the non-member.

<sup>20</sup> Because the cooperative had already formed in this case, it is likely that the terms and conditions for membership in the cooperative have already been defined. Persons wishing to join the cooperative would not be precluded from attempting to renegotiate those terms; however, the cooperative members would have control over any changes that were proposed. If this is a concern, the Council could define the requirements for cooperative formation in more detail to help ensure that all members of the sector have the right to negotiate the terms of a cooperative's structure before it is formed.

would either be forced to accept the will of the majority or become part of a limited access fishery. This highlights the need for the Council to consider the impacts of a percentage threshold for cooperative formation on the balance the power within the sector. Too much power within a group, either in the hands of the majority or the minority, is probably not optimal.

Finally, as the number of cooperatives increases, the complexity of monitoring requirements by NOAA Fisheries also increases. Unlike AFA cooperatives, where only pollock is allocated, Amendment 80 will allocate several species, which must be monitored. Sideboards will also add to management and monitoring burdens. If multiple cooperatives form, multiple accounts will exist for each allocated species and a system of monitoring transfers must be developed. The system of transfers must ensure liability for harvests in excess of allocations. It is likely that staffing needs will increase for NOAA Fisheries, if they have full responsibility for monitoring catch on a vessel basis within each cooperative, performing transfers of quota between cooperatives, and notifying enforcement if quotas have been exceeded. Alternatively, Bering Sea pollock cooperatives developed under the AFA have developed an intercooperative agreement under which a large portion of the administrative and monitoring obligations are taken on by the industry with agency oversight. A similar system could be developed for the Non-AFA Trawl CP sector to ameliorate the agency management and monitoring burden, but the multispecies allocations would be more complicated for sector management than Bering Sea pollock allocations. Regardless of whether a portion of the management and monitoring burden may be transferred to participants in the sector, multiple cooperatives would substantially compound agency oversight burdens and costs.

### **Conclusion**

In considering the rules governing cooperative formation, the Council should closely assess the distribution of leverage created by the system. The establishment of a member threshold for cooperative formation will have distributive effects within the sector. Single cooperative systems could simplify management oversight by NOAA Fisheries. The single cooperative system, however, could have some pitfalls. Single cooperative systems could result in no cooperative fishing, if the threshold cannot be reached, effectively negating any potential benefit that could arise from this program. A single cooperative system also could provide some sector members with negotiating leverage that is disproportionate to the benefits that they bring to the cooperative. This effect could be particularly problematic in a system that is intended to reward certain characteristics (i.e., improved retention, historic participation, efficient operations). While multiple cooperative systems could address some of these distributional concerns, additional management burdens could be more costly.

### **3.2.8 Component 9 – Determines the Method of Allocating Primary Species and PSC Limits Between Cooperative(s) and the Non-Cooperative Group**

Component 9 defines whether total catch or retained catch will be the basis for dividing the species allocated to the Non-AFA Trawl CP sector among the cooperative(s) and the remainder of the sector. The years used to calculate the relative historic catch of vessels in the sector, either retained or total, are determined in Component 10. The options considered by the Council for Component 9 are listed below.

**Component 9** Determines the method of allocation of PSC limits and groundfish between the cooperative and eligible Non-AFA Trawl Catcher Processor participants who elect not to be in a cooperative.

**\*Option 9.1 Catch history is based on total catch**

Option 9.2 Catch history is based on total retained catch

**Assign PSC within the sector to allocated target species and Pacific cod based on the average use of PSC in each target species from the years 1998-2004, expressed as a percent of the total PSC allocation to the sector.**

**Each eligible vessel will then receive an allocation percent of PSC for catch of allocated target species and Pacific cod equal to its proportion of the catch history of the allocated fishery. This PSC allocation will not change from year to year (i.e., will not fluctuate annually with the TAC).**

The amount of the five species allocated the Non-AFA Trawl CP sector is determined under Components 3 and 4. Component 3 is similar to component 9, in that it defines whether retained or total catch is used to divide the TACs among the Non-AFA Trawl CP sector and the remainder of the fleet. Component 4 defines the years of historic catch that will be used to divide catch between the sectors. Components 9 and 10 determine how the TAC that is allocated to the Non-AFA Trawl CP sector in Components 3 and 4 will be divided among cooperative(s) and those persons (their vessels) that elect not to join the cooperative(s).

Groundfish: Recall from the discussion of Component 3 that the Non-AFA Trawl CP sector tended to receive a larger allocation when retained catch was used as the numerator and denominator. The dynamics of the allocation change when the allocation is within the sector as opposed to dividing the allocation among sectors. The Non-AFA Trawl CP sector tended to fare better when retained catch was used in the calculation because they were the sector that targeted (and retained) the five allocated species. Because they targeted those species, they retained more of their catch. When the allocation is among members of the Non-AFA Trawl CP sector, a vessel's ability to utilize more of the harvest plays a bigger role.

Vessel length appears to be the most important factor in determining whether the allotment associated with a vessel would be increased or decreased based on using retained or total catch. In almost every case, vessels that are longer than 200' LOA would be credited with a larger percentage of the sector allocation when catch history is based on retained catch. In almost every instance, vessels less than 200' LOA have their allocation reduced. It is likely that larger vessels have retained more of their catch because they have more capacity to store and process fish that are not their primary target.

Based on the catch of Non-AFA Trawl CP vessels from 1995-2003 it is possible to estimate the percentage of retained catch to total catch for each vessel. The table below shows the average percent of catch that was retained by vessels, grouped by like percentages. Information in this table further indicates that smaller vessels will be issued a smaller percentage of the Non-AFA Trawl CP allocation, if retained catch instead of total catch is used to calculate the distribution. Changes at the individual vessel level cannot be reported due to confidentiality restrictions placed on the use of these data by NOAA Fisheries. The table does indicate that smaller vessels are, on average, impacted more by the use of retained catch than larger vessels. Individual vessel data shows there are exceptions to this rule, but the trend holds based on vessel averages.

**Table 3-57 Average percent of catch retained by vessels, grouped by like percentages**

Number of Vessels	Average Vessel Length in Feet (LOA)	Average Percentage of catch Retained (1995-2003)
5	126	43%
5	130	55%
4	144	63%
6	184	74%
7	222	87%
27 Non-AFA Trawl CP	165	66%

Source: NPFMC Gulf of Alaska Rationalization and IR/IU database. Note: The catch history of the Alaska Voyager was combined with the catch history of one of her sister vessels to generate this table. The Alaska Voyager's catch history shows up in the vessels with an average length of 222' LOA.

**PSC:** The amount of halibut and other PSC species allocated to the sector will also impact the members ability to harvest the five allocated species, Pacific cod, and any other species they may want to target in the BSAI. All fisheries will be impacted since the sector's PSC allocation is meant to fund all of their fishing activities in the BSAI. If the halibut allocated to the sector is insufficient to enable the sector to harvest their directed fisheries, fishing must cease with TAC still available for harvest. Within the cooperative, members will be able to structure their harvest activity to minimize the use of halibut. Given historic halibut catch rates, it is unlikely that all the allocated species and Pacific cod could be harvested under the most restrictive alternatives, unless substantial improvements are made to halibut usage rates. It is likely that new fishing practices (perhaps gear modification) would be needed before halibut savings would be sufficient to allow the entire TAC to be taken.

In summary, PSC allocations will play an important role in the cooperative(s) and sector limited access group in harvesting their groundfish allocations and other groundfish that is not directly allocated to the sector. PSC will be divided among members of the Non-AFA Trawl CP sector in the same proportion as the groundfish are allocated to cooperative(s) and the component of the fleet that does not join a cooperative. Cooperatives are expected to devise methods to reduce their halibut bycatch, but under some options the reductions may be insufficient to harvest the entire allocation. Allowing transfers between cooperatives will help improve harvest rates. Vessels that do not join cooperative are less likely to be able to reduce halibut bycatch. One option would also only reduce their PSC allocation by 5 percent per year until it reaches a given percentage. These vessels are the least likely to be able to harvest their entire allocation.

The BSAI PSC alternative described in this section defines how PSC would be divided among vessels in the sector. The calculation bases the sector's PSC distribution on the average use of PSC in each target fishery from 1998-2004. The amount used in each fishery is then divided by the total used in all Amendment 80 species and Pacific cod. The resulting percentage is the portion of the total PSC allocation that is assigned to each species. Table 3-58 shows that 3.96 percent of the sector's halibut allotment would be assigned to the Atka mackerel, 13.47 percent to flathead sole, 24.79 to Pacific cod, 24.19 percent to rock sole, 1.87 percent to AI Pacific Ocean perch, and 31.72 percent to yellowfin sole. That percentage is then multiplied by the total amount of that PSC species assigned to the sector under Component 6. The resulting amount is the quantity of that PSC species assigned to that target fishery. Each vessel is then assigned an amount of that PSC species that is equal to their percentage of the sector's target species allocation multiplied by the total amount of the PSC assigned to that species. After the PSC allocation is determined it will not change from year-to-year.

**Table 3-58 Halibut usage in the Amendment 80 species target fisheries, 1998-2004.**

Year	Atka Mackerel	Flathead Sole	Pacific Cod	Rock Sole	Rockfish	Yellowfin Sole	Total
1998	51	356	322	326	17	731	1,803
1999	135	338	668	388	47	737	2,312
2000	226	368	382	433	10	789	2,207
2001	54	357	367	655	50	928	2,411
2002	44	206	543	654	61	921	2,429
2003	84	152	668	985	67	713	2,669
2004	57	438	1,127	536	56	398	2,612
Total Tons	651	2,215	4,077	3,977	308	5,215	16,444
% of Total	3.96%	13.47%	24.79%	24.19%	1.87%	31.72%	100%

Source: NPFMC Amendment 80 database

Data for the crab PSC calculations are provided in Table 3-59, Table 3-60, Table 3-61, and Table 3-62. It is important to note that data for 2003 and 2004 were not included in these tables. Data for those years were not available when these tables were developed. The percentages at the bottom of each table show how the PSC assigned to the sector will be divided among fisheries.

The red king crab PSC assigned to the sector would go primarily to the rock sole fishery (65 percent), the yellowfin sole fishery (24 percent), and the Pacific cod fishery (8 percent). Each of the other target fisheries would be allocated less than 2 percent of the red king crab PSC. Based on these calculations, the persons that receive substantial allocations of rock sole or yellowfin sole will also get the majority of the red king crab PSC allowance.

About 64 percent of the *C. opilio* and *C. bairdi* (Zone 2) would be assigned to the yellowfin sole fishery. Flathead sole is assigned the second largest percentage of those species at 20 and 25 percent, respectively. *C. bairdi* (Zone 1) is assigned to the rock sole (56 percent), yellowfin sole (23 percent), Pacific cod (16 percent), and flathead (4 percent) sole fisheries.

Given that the percentages are based on actual crab usage, the percentages should closely reflect the amount of those PSC species that are needed in each fishery at historic TAC levels. However, as TACs change over time the amount of each PSC assigned to a target fishery may not reflect the true need in that fishery. But, fixing the PSC allocation will tend to smooth out economic impacts of TAC changes. Persons allocated species whose TAC declines will benefit from holding a constant level of PSC. The value of the PSC will be retained if people in the sector hold allotments of target species they cannot harvest due to PSC constraints. Selling the PSC harvest privileges to those people will increase the revenue of the person holding excess PSC and decrease the revenue of persons that need to buy extra PSC harvest privileges to harvest their groundfish allotment. The market for those PSC harvest privileges will determine the market price. The amount of PSC on the market and the market value of the groundfish that would be harvested using the PSC will determine the price.

**Table 3-59 Red king crab usage in the Amendment 80 species target fisheries, 1998-2002.**

Year	Atka Mackerel	Flathead Sole	Pacific Cod	Rock Sole	Rockfish	Yellowfin Sole	Total
1995	261	93	2,301	19,340		1,398	23,393
1996	5,543	199	2,770	9,761		4,880	23,153
1997			1,538	38,380		7,043	46,961
1998		1,408	1,853	12,569	125	8,413	24,368
1999		68	7,200	62,550		13,699	83,517
2000		130	4,328	53,518	1,018	12,968	71,963
2001		547	2,241	26,344		32,461	61,594
2002	229	243	15,600	62,870		22,413	101,355
Total Animals	6,033	2,688	37,833	285,331	1,143	103,275	436,302
% of Total	1.38%	0.62%	8.67%	65.40%	0.26%	23.67%	100.00%

Source: NPFMC Amendment 80 database

Note: Data for 2003 and 2004 were not available at the time this table was developed.

**Table 3-60 C. opilio crab usage in the Amendment 80 species target fisheries, 1998-2002**

Year	Atka Mackerel	Flathead Sole	Pacific Cod	Rock Sole	Rockfish	Yellowfin Sole	Total
1995	2,828	449,882	12,863	349,934	74	1,823,898	2,639,479
1996	65	1,038,063	65,556	176,133	138	1,520,748	2,800,702
1997		574,495	293,427	559,632		2,858,146	4,285,699
1998	1,084	657,622	176,178	462,149	890	2,324,301	3,622,224
1999	62	320,256	218,587	87,619	152	515,984	1,142,661
2000	121	318,552	106,356	145,917	263	2,342,246	2,913,455
2001		480,078	28,630	237,127		1,036,724	1,782,560
2002	5	165,498	126,877	102,091	5,939	651,451	1,051,861
Total Animals	4,165	4,004,446	1,028,474	2,120,603	7,456	13,073,498	20,238,642
% of Total	0.02%	19.79%	5.08%	10.48%	0.04%	64.60%	100.00%

Source: NPFMC Amendment 80 database

Note: Data for 2003 and 2004 were not available at the time this table was developed.

**Table 3-61 C. bairdi crab (Zone 1) usage in the Amendment 80 species target fisheries, 1998-2002**

Year	Flathead Sole	Pacific Cod	Rock Sole	Yellowfin Sole	Grand Total
1995	1,441	72,304	268,641	80,804	423,190
1996	78,555	64,501	329,108	115,355	587,519
1997	120	109,141	415,967	93,312	618,540
1998	46,481	55,192	187,298	152,149	441,119
1999	2,685	66,546	129,480	131,669	330,380
2000	1,206	45,710	178,125	77,807	302,848
2001	13,009	38,019	133,137	122,301	306,466
2002		104,741	286,732	25,904	417,376
Total Animals	143,498	556,153	1,928,487	799,300	3,427,438
% of Total	4.19%	16.23%	56.27%	23.32%	100.00%

Source: NPFMC Amendment 80 database

Note: Data for 2003 and 2004 were not available at the time this table was developed.

**Table 3-62 C. bairdi crab (Zone 2) usage in the Amendment 80 species target fisheries, 1998-2002**

Year	Atka Mackerel	Flathead Sole	Pacific Cod	Rock Sole	Rockfish	Yellowfin Sole	Total
1995		54,849	12,938	8,702		779,992	856,481
1996		214,305	6,048	68,025	430	372,839	661,647
1997		140,642	52,532	45,433	352	640,047	879,006
1998	121	154,868	17,471	14,650	699	591,525	779,335
1999	28	165,582	24,296	636		249,210	439,751
2000		211,161	16,254	9,650	28	393,296	630,389
2001		266,681	19,339	132,423		196,741	615,183
2002		205,392	57,972	79,387	49	238,212	581,012
Total Animals	149	1,413,479	206,850	358,906	1,557	3,461,862	5,442,804
% of Total	0.00%	25.97%	3.80%	6.59%	0.03%	63.60%	100.00%

Source: NPFMC Amendment 80 database

Note: Data for 2003 and 2004 were not available at the time this table was developed.

### 3.2.8 Component 10 – Cooperative Allocation Catch History Years

Component 10 defines the catch history years that will be used to determine how the Non-AFA Trawl CP allocation will be divided among the cooperatives and those vessels whose owners that decide not to join a cooperative (sector limited access). The alternatives under consideration by the Council are listed in the text box below.

**Component 10 Determines which years of catch history are used for establishing cooperative allocations. The allocation of groundfish between the cooperative and those eligible participants who elect not to join a cooperative is proportional to the catch history of groundfish of the eligible license holders included in each pool. Applicable PSC limits are allocated between the cooperative and non-cooperative pool in same proportions as those species that have associated PSC limits. The catch history as determined by the option selected under this component will be indicated on the Sector Eligibility Endorsement, which indicates the license holder's membership in the Non-AFA Trawl Catcher Processor sector. The aggregate histories will then be applied to the cooperative and the non-cooperative pool.**

**Notwithstanding the qualified history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the program of no less than:**

**0.5 percent of the yellowfin sole catch history**

**0.5 percent of the rock sole catch history**

**0.1 percent of the flathead sole catch history**

- Option 10.1 1995-2003, but each vessel drops its 3 lowest annual catches by species during this period
- Option 10.2 1997-2003, but each vessel drops its two lowest annual catches by species during this period
- Option 10.3 1998-2002, but each vessel drops its lowest annual catch by species during this period
  - Suboption 10.3.1 Each vessel does not drop its lowest annual catch by species during this period
- Option 10.4 1998-2003, but each vessel drops its lowest annual catch by species during this period
  - Suboption 10.4.1 Each vessel drops two years during this period
- Option 10.5 1999-2003, but each vessel drops its lowest annual catch by species during this period
- Option 10.6 1997-2004, but each vessel drops its 2 lowest annual catches by species during this period
- Option 10.7 1997-2004, but each vessel drops its 3 lowest annual catches by species during this period
- \*Option 10.8 1998-2004, but each vessel drops its 2 lowest annual catches by species during this period**
- Option 10.9 Select the highest percentage allocation by species, for each vessel using total catch of the vessel over the total catch of the sector for the following four suites of years: 1997-2003, drop 2; 1997-2004, drop 2; 1997-2004, drop 3; 1998-2004, drop 2. Different year scenarios may be chose for different species with the sector.
  - Add all of the percentages together and then adjust proportionally to 100%.

**For AI POP, all vessels will receive their allocation equally in 541, 542, and 543**

**Each vessel will receive its historic share of the sector's Atka mackerel allocation based on Component 10 (all areas combined). Vessels less than 200' in length having less than 2% of the sector's Atka mackerel history ("Non-mackerel vessels") will receive their allocation distributed by area according to each individual vessel's catch distribution during the Component 10 years. The remainder of EBS/541, 542, and 543 sector allocation after "Non-mackerel vessels" have been removed will be allocated to vessels that are greater than 200' in length or have more than 2% of the sector's Atka mackerel allocation ("mackerel vessels"). Mackerel vessels will receive their respective percentages (adjusted to 100%) equally in each area.**

**n the event that the Non-AFA Trawl CP sector receives an exclusive allocation of Pacific cod, that allocation will be divided between cooperatives and the sector's limited access fishery in the same manner (and based on the same history) as the division of the other allocated species within the sector.**

Very little quantitative information can be reported in this section. Information at the individual vessel level cannot be reported due to confidentiality constraints. Since information that would reveal catch levels cannot be reported at the vessel level, data would need to be aggregated to groups that would each include at least three companies. Aggregating data requires assumptions regarding which vessels would join specific cooperatives and those that would not join a cooperative. Those groupings would be speculative at best and would likely provide misleading information. Therefore, a qualitative discussion of the alternatives will be provided. The discussion will focus on general impacts of the various alternatives.

Including Components 9 and 10 in the amendment will provide a structure that is more conducive to allowing cooperatives to form. Without these provisions all members of the Non-AFA Trawl CP sector would need to reach an agreement on how the sector's allocation should be divided among individual members. That would be very difficult, and would only be possible if every member of the sector agreed to the division. Without these components, every member would need to join a single cooperative or all of the cooperatives would need an inter-cooperative agreement so that everyone was held accountable. A discussion of the issues associated with requiring everyone to agree on the cooperative structure was provided in Section 3.2.7. That section concluded that the majority of the sector could be forced to accept more of the demands of owners that hold out from initially joining the cooperative. If the demands of participants holding-out from signing the cooperative agreement were too burdensome, the cooperative simply would not form. This scenario may not be a substantial hardship on qualified vessel owner who feel they have little to gain from a cooperative, but could be very costly for license holders that would benefit from joining a cooperative.

Several of the alternatives allow the vessel's worst year or years of catch data to be dropped. It is assumed that this applies to each vessel and not the total history associated with all of the vessels a person may own. Entities that own more than one vessel could drop the worst year(s) associated with each vessel, as opposed to aggregating the catch history associated with all eligible vessels and then dropping the worst year(s).

Concern has been expressed that selecting a different qualifying period for allocating species among vessels within the Non-AFA Trawl CP sector than was used to determine sector eligibility could result in vessels qualifying for the sector but not receiving an allocation. To remedy this concern the Council included an option that would provide a minimum allocation of flatfish species for any vessel qualified for the Non-AFA Trawl CP sector. The percentages were developed to provide a minimal allocation, so they are relatively small. The percentages are 0.5 percent for yellowfin sole and rock sole and 0.1 percent for flathead sole. Any qualified vessel in the sector would be granted catch history equal to those minimum percentages. Vessels that harvested more than those percentages would have their allocations reduced to fund the minimum guaranteed amounts. Table 3-63 and Table 3-64 provide the number of vessels below the minimum allocation for the three allocated species. In general the number of vessels below the minimum allocation is zero for year combinations before 1998 with the exception of flathead sole and yellowfin sole using retained catch, and for year combinations after 1997 the number of vessels below the minimum is two.

**Table 3-63 Number of vessels below the minimum allocations for flathead sole, rock sole, and yellowfin sole by year combination using total catch**

Year Combination Option	Number of vessels under minimum	Additional tons needed to meet minimum (mt)	Total Tons catch by all vessels (mt)	Additional tons as a percent of total tons
<b>Flathead Sole (0.1%)</b>				
1995-2003 drop 3	0	0	102,349	0.00%
1997-2003 drop 2	0	0	85,350	0.00%
1998-2002 drop 1	*	*	67,973	*
1998-2002	*	*	77,322	*
1998-2003 drop 1	*	*	79,863	*
1998-2003 drop 2	*	*	69,237	*
1999-2003 drop 1	*	*	60,024	*
1997-2004 drop 2	0	0	100,260	0.00%
1997-2004 drop 3	0	0	89,021	0.00%
1998-2004 drop 2	*	*	84,147	*
Blended Option	0	0	89,775	0.00%
<b>Yellowfin Sole (0.5%)</b>				
1995-2003 drop 3	0	0	497,703	0.00%
1997-2003 drop 2	0	0	397,225	0.00%
1998-2002 drop 1	2	*	267,381	*
1998-2002	2	*	301,701	*
1998-2003 drop 1	2	*	331,996	*
1998-2003 drop 2	2	*	284,748	*
1999-2003 drop 1	2	*	349,278	*
1997-2004 drop 2	2	*	461,755	*
1997-2004 drop 3	0	0	408,993	0.00%
1998-2004 drop 2	2	*	256,781	*
Blended Option	0	0	396,566	0.00%
<b>Rock Sole (0.5%)</b>				
1995-2003 drop 3	0	0	213,213	0.00%
1997-2003 drop 2	0	0	170,716	0.00%
1998-2002 drop 1	2	*	122,671	*
1998-2002	2	*	138,635	*
1998-2003 drop 1	2	*	149,456	*
1998-2003 drop 2	2	*	128,008	*
1999-2003 drop 1	2	*	123,883	*
1997-2004 drop 2	0	0	210,448	0.00%
1997-2004 drop 3	0	0	186,886	0.00%
1998-2004 drop 2	2	*	167,741	*
Blended Option	0	0	185,662	0.00%

Source: NMFS WPR Data

\* Withheld due to confidentiality requirements.

**Table 3-64 Number of vessels below the minimum allocations for flathead sole, rock sole, and yellowfin sole by year combination using retain catch**

Year Combination Option	Number of vessels under minimum	Additional tons needed to meet minimum (mt)	Total Tons catch by all vessels (mt)	Additional tons as a percent of total tons
<b>Flathead Sole (0.1%)</b>				
1995-2003 drop 3	1	*	79,703	*
1997-2003 drop 2	2	*	67,094	*
1998-2002 drop 1	2	*	54,524	*
1998-2002	2	*	61,849	*
1998-2003 drop 1	2	*	64,058	*
1998-2003 drop 2	2	*	55,622	*
1999-2003 drop 1	2	*	48,235	*
1997-2004 drop 2	2	*	78,380	*
1997-2004 drop 3	2	*	69,611	*
1998-2004 drop 2	2	*	67,040	*

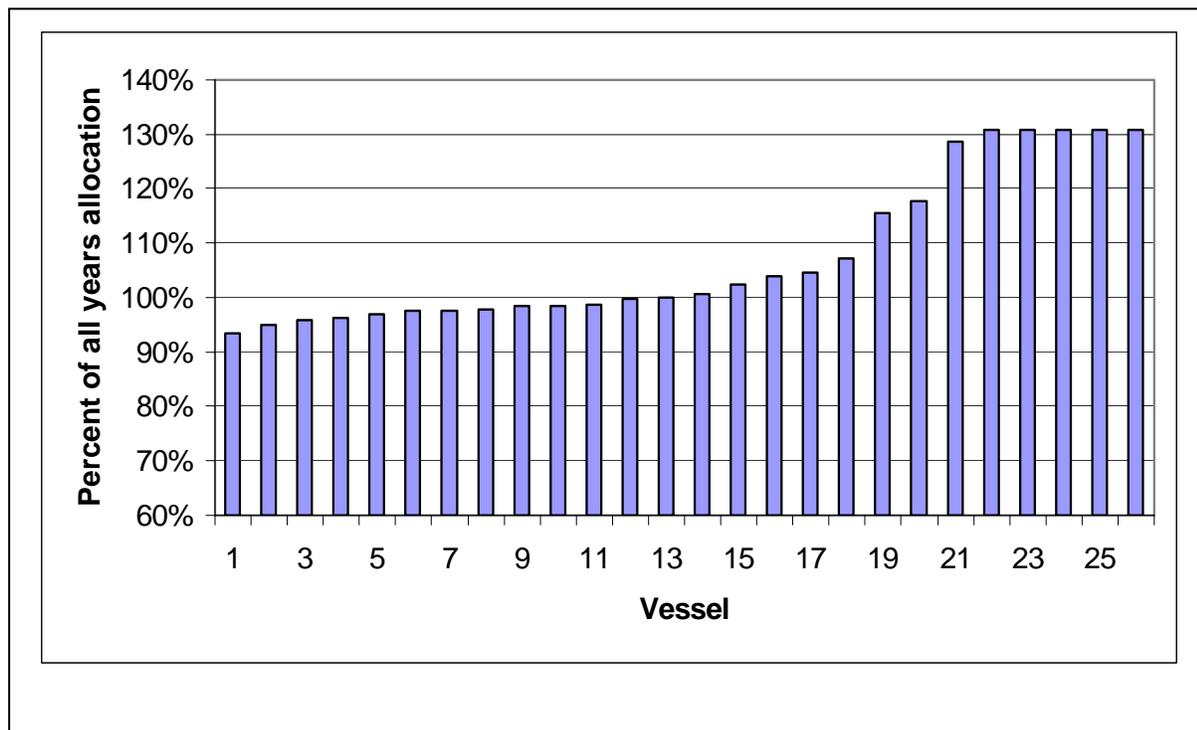
Year Combination Option	Number of vessels under minimum	Additional tons needed to meet minimum (mt)	Total Tons catch by all vessels (mt)	Additional tons as a percent of total tons
<b>Yellowfin Sole (0.5%)</b>				
1995-2003 drop 3	0	0	382,287	0.00%
1997-2003 drop 2	1	*	314,878	*
1998-2002 drop 1	2	*	206,160	*
1998-2002	2	*	232,861	*
1998-2003 drop 1	2	*	260,951	*
1998-2003 drop 2	2	*	223,974	*
1999-2003 drop 1	2	*	204,409	*
1997-2004 drop 2	1	*	367,493	*
1997-2004 drop 3	1	*	326,613	*
1998-2004 drop 2	2	*	276,590	*
<b>Rock Sole (0.5%)</b>				
1995-2003 drop 3	0	0	96,623	0.00%
1997-2003 drop 2	0	0	77,966	0.00%
1998-2002 drop 1	2	*	54,613	*
1998-2002	2	*	60,667	*
1998-2003 drop 1	2	*	67,995	*
1998-2003 drop 2	2	*	58,162	*
1999-2003 drop 1	2	*	56,534	*
1997-2004 drop 2	0	0	98,637	0.00%
1997-2004 drop 3	0	0	87,530	0.00%
1998-2004 drop 2	2	*	78,833	*

Source: NMFS WPR Data

\* Withheld due to confidentiality requirements.

Allowing owners to drop years of data tends to increase the allocation to vessels that have not fished every year or have had more than average variation in their annual catch. Between 5 and 7 vessels would be able to drop years they did not fish, depending on the alternative selected. These vessels will tend to benefit from the allocations that allow persons to drop years of data. Other vessels that have had more than an average variation in their historic catch would also benefit. Figure 3-5 is provided as an example of how the vessel's allocations could vary as a result of dropping years. While all vessels were allowed to drop their three worst years in this example, 13 vessels increased their allocation and 13 vessels had their allocation decrease. This change is a result of dropping their worst three years of catch history. Three vessels would have their allocation reduced by more than 4 percent. The other 10 vessels would have their percentage of the Non-AFA Trawl CP sector's allocation reduced by less than 4 percent. Thirteen vessels would have their allocation increase. Eight of the vessels would have their allocation increased by more than 15 percent. The other five vessels would have their allocation increase by 7 percent or less. This indicates that the vessels that could drop all three years or had a lot of variation in their catch history, in this example, could increase their allocation by almost 31 percent. These percentages will vary based on the alternative selected. However, this example describes the general trends that should be expected, if vessel owners are allowed to drop years of catch history. The magnitude of the impact will depend on the number of years that can be dropped and the number of vessels that did not fish or had low relative catches during years that can be dropped. Impacts on the distribution of PSC are expected to follow a similar pattern.

**Figure 3-5 Percent of initial allocation assigned to each vessel using retained catch and dropping 3 years of data, when compared to using all years of data, 1995-2003**



Vessels with consistent annual catch history during the qualifying period will be negatively impacted by dropping years of data. Vessels that did not fish each year during the qualifying period, or had large fluctuations in their annual catch amounts, would tend to benefit.

Many participants in the Non-AFA Trawl CP sector view the provisions that allow vessel owners to drop years of catch as an important part of the program. Several issues have been cited as reasons that dropping years of data is important. For example, some members of the sector have testified that the changes in fishing patterns resulting from the Steller sea lion protection measures had substantial impacts on some vessels in specific years. They indicated that some vessels were placed at a disadvantage as a result of changes in fishing seasons and fishing areas that were part of the Steller sea lion protection measures. Dropping years of data is anticipated to help reduce the negative impacts on those vessels.

Allowing people to drop their worst year(s) of catch history also lessens other hardships that occurred during the qualifying period. Owners that had mechanical trouble, health problems, or other issues that resulted in them having poor fishing years will be able to drop those year(s) of data. Dropping years of data will allow them to increase their allocation to an amount that is closer to their “normal”. Other vessel owners that had consistent catch during the time period will have their catch reduced.

Option 10.9 provides flexibility for the owner of each vessel to select their vessel's best years by species. The owner of the vessel may select from four different year combinations 1997-2003 (drop 2 years), 1997-2004 (drop 2 years), 1998-2004 (drop 2 years), or 1997-2004 (drop 3 years) on a species-by-species basis. After the best years are selected to determine the vessel's percentage of the sector allocation, all the percentages are summed and adjusted to equal 100 percent. This option allows each person to select his/her “best” fishing years. Given that everyone is also selecting their best fishing years, it is not possible for each person to determine if they would fare better under this alternative than another option being

considered. This option would likely benefit owners of vessels that have not fished the entire time period, have had inconsistent catches over the years they did fish, or those that moved between fisheries.

The actual allocation to vessels for each of the alternatives cannot be reported because of confidentiality constraints. That information is needed for individual vessels to determine their allocation under each of the alternatives. If all years of catch history during the qualifying period are included in the allocation, then the denominator for each person's allocation is the total catch of all vessels in the sector. Dropping years of data makes it difficult for individuals to determine their allocation because the denominator will change by an amount that cannot be determined by individuals in the fleet.

The Council also stated their intent that if Pacific cod is allocated to the Non-AFA Trawl CP sector in the future, that it would be allocated among vessels using the same method selected for the five species allocated in this amendment. Defining how Pacific cod will be allocated in the future accomplishes an important goal. It allows the cooperatives that form under Amendment 80 to rationalize the sector's Pacific cod allocation without additional Council action or potentially contentious negotiations within the sector. Negotiations may never reach a resolution if some vessels elect not to join a cooperative. The action also removes the potential for any delay in the time it would take to rationalize the Pacific cod sector allocation once it is made. If the formula to allocate Pacific cod is not defined in this amendment the sector would need to agree among the participants. If they could not reach an agreement they could petition the Council to make the division. However, the amendment process to divide the allocation among vessels could take a year or two to complete. During that time the sector would not be able to rationalize their Pacific cod harvests, and lose the benefits that accrue from rationalization.

#### ***Atka mackerel and AI POP Allocation Options***

In February 2006, the Council expanded the options for allocating Atka mackerel and AI POP between the sectors (Components 3 and 4) and within the Non-AFA Trawl CP sector (Components 9 and 10). The first option would allocate equal proportions of Atka mackerel in Eastern AI/Bering Sea area, Central AI area, and Western AI area based on the combined catch history of these areas. For AI POP, the allocations would be made for the Eastern AI, Central AI, and Western AI. The second option would allocate Atka mackerel and AI POP to each of the AI subareas based on the catch history in each of the subareas. The following analysis focuses on the allocations of these species within the Non-AFA Trawl CP sector. See Components 3 and 4 for a more detailed discussion of the inter-sector allocations of these species.

One of the drawbacks of allocating Atka mackerel in equal percentages (option one) is the approach could result in some Non-AFA Trawl CP sector participants not having enough Atka mackerel in the Eastern AI/Bering Sea to harvest their allocation of other Amendment 80 species. This situation is the result of a diverse Non-AFA Trawl CP sector and because there are two different Atka mackerel fisheries (a directed fishery in the CAI and WAI and an incidental top off fishery in the EAI/BS). The directed Atka mackerel fishery has traditionally been limited to a small number of Non-AFA Trawl CP vessels. In addition, the directed Atka mackerel fishery has primarily been in the Central and Western AI subareas. The magnitude of these directed fisheries would likely marginalize the incidental/top off fishery in the Eastern AI/Bering Sea. Allocations issued as an equal percentage for all areas would allow vessels that have harvested Atka mackerel in the Central and Western AI to be allocated the majority of the Eastern AI/Bering Sea allocation, even though they may have little catch history in this area. This issue is amplified by the fact that in 2006 about 63 percent of the BSAI Atka mackerel ITAC is allocated to the Central AI, 25 percent to the Western AI, and 12 percent to the Eastern AI and BS. Since only 12 percent of the ITAC is allocated to the Eastern AI and BS, a vessel with 50 percent of the history of that area no history in either of the other areas would be allocated about 6 percent of each area. It would be allocated 6 percent of the other areas as compensation for losing 44 percent of the Eastern AI and BS Atka mackerel allotment. On the other hand, if a vessel harvested 50 percent of the Central AI ITAC and did not fish either of the other areas it would be allocated 31.5 percent of each area. Some of the problems associated with this method could be solved through inter- or intra-cooperative transfers. However, these trades will result in some

costs and distributional impacts and persons may not be able to access the fish they want in a specific area.

The second option, allocations based on catch history, would address the drawbacks of the first option. In this option, each sector would be allocated Atka mackerel and POP based on the vessel's catch history in each of the subareas. A vessel with history in the Central and Western AI would get allocations reflective of that catch history in those areas, not in Eastern AI/Bering Sea. The one drawback of this approach is that cooperatives with allocations in one subarea could be left without an Atka mackerel or POP fishery, if, in the future, the biomass were to decline in that area.

Selecting between the two alternatives requires policy makers to weigh the positive and negative impacts of the two options. If concerns over fluctuating TACs are a primary concern, then using the second option to provide a portfolio of species that is less susceptible to area TAC fluctuations may be appropriate. However, if the concern of issuing allocations in areas where vessels may have never fished is the primary concern then the catch by area method should be used.

In April 2006, the Council added an option to Component 10 that may address some allocation concerns by allocating Atka mackerel differently to two groups of vessels within the sector. Each vessel will receive its historic share of the BSAI Atka mackerel allocation based on its qualified catch in all areas combined using a year combination from Component 10. Each vessel less than 200' in length and having less than 2 percent of the sector's Atka mackerel history would be defined as a "non-mackerel vessel" and would receive its allocation divided among areas according to the distribution of its catch during the Component 10 years. After making allocations to all of the non-mackerel vessels, the remaining Atka mackerel would be allocated to those vessels over 200' in length and have more than 2 percent of the sector's Atka mackerel history ("mackerel vessels") with each vessel receiving a proportional share of the remaining Atka mackerel in each area (i.e., a vessel with 10 percent of the total qualified history of mackerel vessels would receive 10 percent of the remaining Atka mackerel in each area).

Calculating the allocation to the mackerel and non-mackerel vessels requires several steps. First, based on the years selected from Component 10, each vessel's total qualified catch of BSAI Atka mackerel is calculated for all areas combined. Next, each vessel that is less 200' in length and has less than 2 percent of the sector's qualifying Atka mackerel catch history would receive its BSAI allocation distributed by area according to its distribution of catch among the subareas during the Component 10 years. This was estimated by first determining the percent of the vessel's BSAI Atka mackerel catch that came from each of the subareas using the same year combination.<sup>21</sup> As an example, a 180' vessel with 1 percent of the total qualified catch in the BSAI that has 70 percent of its catch history in EAI/BS and the remaining 30 percent in CAI, would receive 0.7 percent of the total BSAI Atka mackerel allocated to the sector in the EAI/BS and 0.3 percent of the total BSAI Atka mackerel allocated to the sector in the CAI. Once all 'non-mackerel' vessels have received their allocations, the remaining portion of the sector allocation would be allocated to 'mackerel' vessels with each receiving an equal proportional share from the three different areas. So, consider a 'mackerel' vessel that has 45 percent of the total qualified history. If the 'non-mackerel' vessels have 10 percent of the total qualified history, this vessel would have half of the 'mackerel' vessel history. The vessel would then receive one-half of all of the remaining allocation in each area, after allocations are made to the 'non-mackerel' vessels. This system of allocation will ensure that each vessel receives its share of the qualified catch regardless of changes in the relative TACs among the different subareas. The allocations from the subareas, however, would be determined by the distribution of catch of 'non-mackerel' vessels and the relative TACs across the areas.

Table 3-65 provides the total BSAI allocation of Atka mackerel to the mackerel and non-mackerel vessels. The table also provides the portion of the total BSAI Atka mackerel allocation that would come

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<sup>21</sup> No years were dropped in this step of the calculation. The purpose of dropping years in determining a boat's overall allocation is to eliminate years of uncharacteristically low activity, rather than to affect distribution of catch by area.

from each of the subareas for the non-mackerel vessels based on the 2005 TACs. For example, for the year combination 1998-2004 drop 2 years, the non-mackerel vessels' portion of the total BSAI Atka mackerel is 6 percent, while the remaining 94 is allocated to mackerel vessels. Of that 6 percent of BSAI Atka mackerel, approximately 4.6 percent is from EAI/BS; 1.2 percent is from CAI; and the remaining .2 percent is from WAI. Table 3-66 shows the allocations to the 'non-mackerel' vessels in the different areas based on the 2005 TAC (assuming any ICAs are an equivalent portion of the TAC in each area). For each subarea, the first column shows the allocation to 'non-mackerel' vessels in each area as the portion of the overall sector allocation of Atka mackerel. The second column shows the allocation as a percentage of the sector's allocation in the respective area. So, for the 1995 – 2003, drop 3 suboption, the 'non-mackerel' vessels are estimated to receive 1.9 percent of the sector's BSAI allocation of Atka mackerel as Bering Sea/Eastern Aleutian Islands Atka mackerel or 15.7 percent of the sector's allocation Bering Sea/Eastern Aleutian Islands Atka mackerel. The third column for each area shows the percentage of the sector's qualified Atka mackerel catch in the area made by non-mackerel vessels. So, 'non-mackerel' vessels caught 6.3 percent of the sector's Bering Sea/Eastern Aleutian Islands qualified Atka mackerel catch during the 1995 – 2003 period (dropping no years for any vessels).<sup>22</sup> The last column in Table 3-66 shows the percentage of all qualified catch of the sector made by 'non-mackerel' vessels.<sup>23</sup> In general, the table shows that the allocations to 'non-mackerel' will vary significantly depending on the option selected. Allocations to non-mackerel vessels are a substantially larger share of the Bering Sea/Eastern Aleutian Islands under this option than under either option 1 (allocations by history in the area) or option 2 (equal allocations in each area based on all history).

**Table 3-65 Total percent of Atka mackerel in the BSAI and percent of total Atka mackerel by subarea for non-mackerel vessels**

Year Combination	Total Percent of Atka Mackerel for all areas combined		Portion of total Atka Mackerel allocated to Non-Atka Mackerel vessels by subarea		
	Non-Atka Mackerel Vessels	Atka Mackerel Vessels	EAI/BS	CAI	WAI
1995-2003 drop 3	3.478	96.522	1.865	1.381	0.232
1997-2003 drop 2	3.188	96.812	2.497	0.0691	0
1997-2004 drop 2	5.042	94.958	3.864	1.012	0.166
1997-2004 drop 3	5.7	94.3	4.387	1.13	0.184
1998-2002	1.937	98.063	1.505	0.432	0
1998-2002 drop 1	2.201	97.799	1.717	0.484	0
1998-2003 drop 1	3.407	96.593	2.6678	0.7394	0
1998-2003 drop 2	3.892	96.11	3.065	0.827	0
1999-2003 drop 1	4.037	95.963	3.128	0.909	0
1998-2004 drop 2	5.974	94.026	4.596	1.185	0.193

Source: Amendment 80 database

<sup>22</sup> This number is similar (but not the same) as the allocation to non-mackerel vessels under option 2 (under which each vessel receives an allocation in each area based on its qualified catch in the area). The difference arises because no years were dropped in estimating this percentage.

<sup>23</sup> This number is equivalent to the allocation to 'non-mackerel' vessels under option 1, since each vessel would receive an equal portion of the sector's allocation in each area, based on qualified catch history in all areas combined.

**Table 3-66 Atka mackerel allocations in each area to non-mackerel vessels as a percentage of the total sector allocation and as a percentage of the area sector allocation (based on 2005 TAC) and catch of non-mackerel vessels from the area during the qualifying period**

Allocation Option	Number of non-mackerel vessels	Bering Sea/Eastern Aleutian Islands			Central Aleutian Islands			Western Aleutian Islands			Percent of total TAC
		allocation as percent of combined TAC	allocation as percent of area TAC	percent of total catch from the area	allocation as percent of combined TAC	allocation as percent of area TAC	percent of total catch from the area	allocation as percent of combined TAC	allocation as percent of area TAC	percent of total catch from the area	
1995-2003 drop 3	18	1.9	15.7	6.3	1.4	2.5	2.6	0.2	0.7	0.5	3.5
1997-2003 drop 2	16	2.5	21.0	8.7	0.7	1.2	1.4	0.0	0.0	0.0	3.2
1997-2004 drop 2	16	3.9	32.5	14.5	1.0	1.8	2.0	0.2	0.5	0.4	5.0
1997-2004 drop 3	16	4.4	36.8	14.5	1.1	2.0	2.0	0.2	0.6	0.4	5.7
1998-2002	15	1.5	12.6	6.6	0.4	0.8	1.0	0.0	0.0	0.0	1.9
1998-2002 drop 1	15	1.7	14.4	6.6	0.5	0.9	1.0	0.0	0.0	0.0	2.2
1998-2003 drop 1	15	2.7	22.4	11.0	0.7	1.3	1.5	0.0	0.0	0.0	3.4
1998-2003 drop 2	15	3.1	25.7	11.0	0.8	1.5	1.5	0.0	0.0	0.0	3.9
1999-2003 drop 1	15	3.1	26.3	12.6	0.9	1.6	1.7	0.0	0.0	0.0	4.0
1998-2004 drop 2	15	4.6	38.6	17.8	1.2	2.1	2.1	0.2	0.6	0.5	6.0

Source: Amendment 80 database

### ***Management of Atka mackerel***

The allocation of Atka mackerel to members of the Non-AFA Trawl CP sector will be divided among vessels whose owners elect to join cooperatives and those that do not join a cooperative. Those cooperatives with Atka mackerel allocations that elect to participate in the Atka mackerel fishery will still be managed under the current Steller sea lion regulations. The harvest of allocations to cooperative members may potentially in the future be managed through the cooperative structure under development in Amendment 80. The following discussion describes the current management structure used to limit Atka mackerel harvests by time and area and a discussion of using the cooperative structure to limit harvests. Amendment 80 qualified vessels that do not join cooperatives will also be managed under the current Steller sea lion regulations.

Current harvest structure: Section 3.1.3.4 provides an historical overview of the Atka mackerel fishery. A brief summary of that discussion and some additional information on Atka mackerel harvest limitations are provided here. Atka mackerel TACs specified for the Eastern Aleutian Islands District and Bering Sea subarea, after CDQ allotments and other reserves<sup>24</sup>, are allocated at up to 2 percent to jig gear and at least 98 percent to other gear types. Currently NMFS is allocating 1 percent to jig gear since they have not fished at levels warranting a 2 percent allocation, leaving 99 percent of the ITAC available to the trawl gear vessels subject to A and B season allocations. These two equal seasonal allowances are defined in § 679.23(e)(3), which defines the A season as January 20th through April 15<sup>th</sup> and the B season is September 1<sup>st</sup> through November 1<sup>st</sup>. Any portion of the Atka Mackerel TAC that is not harvested during the A season would be available for harvest during the B season. In addition to the seasonal division of the Atka mackerel TAC, Steller sea lion protection measures restrict the Atka mackerel harvest in the Harvest limit area (HLA) to 60 percent<sup>25</sup> of the seasonal TAC. Areas 542 and 543 are opened to directed Atka mackerel fishing 48 hours after the area 541 Atka mackerel fishery is closed to directed fishing<sup>26</sup>. To fish in the HLA fishery during the A season, vessel owners must register their vessel(s) with NMFS by the first working day following January 1st. The registration process results in NMFS assigning an Atka mackerel endorsement to the vessel's Federal Fisheries Permit. Registered vessels will then be assigned to fish in the 542 or 543 HLA based on a lottery. Each platoon of vessels will switch areas/HLA as directed by the Regional Administrator. This management structure was developed to limit the rate of Atka mackerel removals from critical Steller sea lion habitat during defined times of the year.

It should also be noted that § 679.22 states that when the HLA Atka mackerel fishery is open in areas 542 and 543, directed fishing for Pacific cod in the HLA by vessels named on a Federal Fisheries Permit under § 679.4(b) is prohibited. Allowing cooperatives to extend their Atka mackerel fishery would reduce the potential number of days the Pacific cod fishery in the HLA could be open to directed trawl fishing.

Cooperative based harvest controls: In the future, controlling harvest rates in the HLA may be possible using methods approved by NOAA Fisheries and implemented by Non-AFA Trawl CP cooperatives. NOAA Fisheries approval will depend on assurance that cooperatives will limit their daily harvest rates to pre-specified levels using methods agreed to by NOAA Fisheries. If the cooperative is unable to develop criteria that would satisfy NOAA Fisheries, then the current management regulations would stay in place. Management measures that are currently in place were discussed in the previous section.

Amendment 80 qualified vessels that do not join a cooperative: Some members of the Amendment 80 fleet may elect not to join cooperatives. Those owners will not be bound by cooperative contracts and

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<sup>24</sup> The CDQ reserve is currently set at 7.5 percent of the BSAI TAC. That allocation could increase under Amendment 80. Other reserves could include ICAs if they are developed under this action and the portion of the 15 percent reserve that is not assigned to the CDQ program.

<sup>25</sup> The Regional Administrator has the authority to set the HLA limit at less than 60 percent if appropriate.

<sup>26</sup> Directed Atka mackerel fishing in Area 541 has recently been closed. The allocation to the Eastern Bering Sea and area 541 has been taken as incidental catch to other Bering Sea target fisheries.

their catch will come from the sector limited access pool. These vessels will also need to be managed under rules similar to those used to manage other limited access vessels. NOAA Fisheries will determine whether a sufficient amount of Atka mackerel is available to those vessels to warrant a directed fishery. If an insufficient amount of Atka mackerel were available, the fishery would not be opened to directed fishing by these vessels. They would then be allowed to retain bycatch amounts of Atka mackerel until they are required to stop fishing or Atka mackerel catch levels require that it be defined as a PSC species for the remainder of the season. An allocation to those vessels warranting a directed fishery, would require NOAA Fisheries to define how they would be managed. If limited access vessels are managed using a platoon system, where NOAA Fisheries determines which vessels are allowed to fish specific areas during specific times of the year, then vessel owners would need to abide by the defined application and participation rules for those fisheries. Vessel owners not meeting the participation requirements would be prohibited from participating in the directed fisheries for those species. The timing and amount of removals would need to consider catches made by cooperatives during the same period of time.

Vessels Outside the Non-AFA Trawl CP Sector: Vessels operating outside of the Non-AFA Trawl CP sector will continue to be managed under the regulations in place for those vessels. Atka mackerel removal rates in the HLA will be limited to the extent necessary to protect the Steller sea lion food supplies. The management of these vessels would likely closely correspond to the management of vessels in the Non-AFA Trawl CP sector that elect not to join a cooperative. Whether any vessels in this category will be able to participate in a directed Atka mackerel fishery will depend on the division of TAC between the Non-AFA Trawl CP sector and the trawl limited access trawl sectors. Alternatives are currently being considered that would allocate from 80 to 100 percent of the Atka Mackerel TAC to the Non-AFA Trawl CP sector. Selecting an alternative that allocates 20 percent of the TAC to vessels outside the Non-AFA Trawl CP sector could result in NMFS allowing these vessels to participate in a directed Atka mackerel fishery. If they are allowed to participate in a directed fishery, HLA harvest restrictions need to consider the catch rates of the Non-AFA Trawl CP cooperatives and vessels in that sector that do not join a cooperative. Alternatives that allocate closer to 100 percent of the available TAC to the Non-AFA Trawl CP sector will result in insufficient amounts being allocated to the trawl limited access vessels for a directed fishery. If these vessels were not allowed to participate in a directed fishery for Atka mackerel then their incidental harvests would have limited impacts on removals from the HLA. Under that scenario, NOAA Fisheries emphasis on limiting HLA harvests of Atka mackerel would focus on the Non-AFA Trawl CP sector.

### **3.2.9 Component 11 – Excessive Share Limits**

Amendment 80 will define a cooperative structure for the Non-AFA Trawl CP sector. Like many other rationalization actions that have been considered by the Council, the proposed action includes options for limiting the percentage of the sector's allocation a "person" may hold. Three options are under consideration by the Council in this proposed action. The first option would not limit the percentages of future sector allocations a license holder may hold, thus allowing unlimited consolidation within the sector. The second option would place a limit on the percentage of future species allocations a license holder may hold on a species-by-species basis or in aggregate. In other words, Option 11.2 would limit the percentage of the sector's allocation an individual license holder can bring to a cooperative, either through license holding or through inter-cooperative leasing. To apply this cap, inter-cooperative transfers would need to be conducted through individuals or entities. All inter-cooperative transfers must be approved by NMFS before the transfer is complete. The intent of this option would prevent persons (individuals or entities) from entering a cooperative with an excessive share of the sector's apportionment. The cap would be set as a fixed percentage of the sector's allocation and would be applied to each species allocated to the sector. The option will determine each license holder's percentage of the sector allocation using the "individual and collective rule." This rule basically says that the amount of the sector allocation a person is credited with holding is calculated by assigning a person with:

- 1) all of the harvest rights they own outright;
- 2) harvest rights equal to the percentage of the partnership, corporation, or other entity owned by an individual (e.g., if a person owns 25 percent of a corporation, they are credited with “owning/controlling” 25 percent of the harvest rights held by the corporation).

Option 11.2 includes a suboption that would grandfather license holders that exceed the cap in the initial allocation. Grandfathering a person at their initial allocation level means that they may own a percentage of the sector’s allocation that is above the excessive share limit, as long as it is issued to them at the time of the initial allocation. They are not allowed to purchase or otherwise acquire more rights to harvest shares of those fisheries, unless they divest of their initial allocation to a point they fall below the use cap. At that time they may acquire harvest rights until they reach the excessive share cap. Because caps are applied at the individual species level, we assume that grandfather privileges would also be at the individual species level. A person who is over the cap for one species would be allowed to purchase other species until the excessive share cap for that species is reached.

As noted above, the excessive share caps defined in Options 11.2 would prohibit eligible individuals or entities from acquiring an excessive share of the sector’s apportionment prior to enter their cooperative.

<b>Component 11</b>	Determines if excessive share limits are established in the Non-AFA Trawl Catcher Processor sector.
Option 11.1	There is no limit on the consolidation in the Non-AFA Trawl Catcher Processor sector.
<b>*Option 11.2</b>	<b>Consolidation in the Non-AFA Trawl Catcher Processor sector is limited such that no single person (using the individual and collective rule) can hold catch history more than a fixed percentage of the overall sector apportionment history. The cap will be applied on an aggregate basis (options: 20%, *30%, 40%, or 50% of the sector’s allocation).</b>
Suboption 11.2.1	Cap would be applied on an aggregated basis.
<b>*Suboption 11.2.2</b>	<b>Persons (individuals or entities) that exceed the cap in the initial allocation would be grandfathered.</b>
<b>Option 11.3</b>	<b>No vessel shall harvests more than 5%, *10%, 15%, or 20% of the entire Non-AFA Trawl CP sector allocation.</b>
<b>*Suboption 11.3.1</b>	<b>Vessels owners that are initially allocated a percentage of the sector allocation that is greater than the vessel use cap shall be grandfathered at their initial allocation.</b>

In February 2006, the Council added an option to limit how much a Non-AFA Trawl CP vessel can harvest of the sector’s allocation. The vessel use caps being considered are 5, 10, 15, or 20 percent. Implementing a vessel use cap would ensure that a minimum number of vessels remain in the fishery. A suboption is included that would grandfather those vessels owners who exceed the initial allocation. As noted above, grandfathering a vessel owner at their initial allocation level means that they may harvest a percentage of the sector’s allocation that is above the cap, as long as the vessel harvested that amount at the time of the initial allocation. They are not allowed to harvest more of the fisheries, unless they divest of their harvest share to a point they fall below the cap.

National Standard 4 of the Magnuson-Stevens Fishery Conservation and Management Act states that fishery management programs that allocate or assign fishing privileges shall be carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of those privileges.

The National Research Council study “Sharing the Fish,” stated that ownership and use caps are generally favored as a means to prevent excessive shares (or the ownership or a disproportionate amount of shares by a single person or entity) (NAS 1999). In fisheries with excess capital, it is likely that issuance of transferable quota share, or other individual harvest rights such as those assigned under cooperatives, will result in some consolidation, as surplus capacity leaves the fishery. While this consolidation might be favored on economic efficiency grounds (e.g., for exploiting economics of scale), concentration of share

holdings in a relatively few individuals or entities can result in excessive market power. The concentration of market power can affect working conditions, prices, and wages, and harm small participants in a fishery.<sup>27</sup> Although caps on ownership and use of shares are generally viewed as a means to prevent excessive concentration of shares, the level of the cap could vary among fisheries depending on the particular nature of the fishery and the objectives of the cap.

Establishing excessive share caps may not provide extensive opportunities for new entrants in the Non-AFA Trawl CP sector. The primary reason for the limited opportunities for new entrants is because of the low number of historical participants in these fisheries. It is projected that only 27 vessels will qualify for the Non-AFA Trawl CP sector. Some companies participating in the Non-AFA Trawl CP sector own more than 1 vessel. Anecdotal information provided by some members of the sector indicates the fleet may be owned by 12 or fewer companies.

Another reason for limiting the opportunities of new entrants is that annual allocations to a cooperative may be fully transferable within the cooperative. Any member of the cooperative would be eligible to use the catch history of any other member, regardless of vessel length limitations of the LLP that carries the catch history. If an owner, for any reason, decides not to participate in the Amendment 80 fisheries, they could transfer their catch history to another cooperative member and collect the agreed upon compensation from that person. Further, if a single cooperative is formed, it is possible that all of the cooperative participants could elect to transfer their catch history for the allocated species to a single participant thus technically enabling one vessel to harvest the entire cooperative allocation. Although allowing transfer of catch history is a valuable tool for fleet consolidation and the economic efficiency that would result, it also limits potential opportunities for new entrants to participate in the fishery through vessel/license ownership.

The Council is considering establishing individual ownership caps and vessel use caps to help maintain the minimum fleet size and prevent excessive consolidation of market power. Permitting fully transferable catch history within a cooperative and not limiting the size of the fleet through vessel caps, could allow owners to gain influence over the working conditions and gain more influence of their market. On the other hand, limiting transfers tends to reduce efficiency of the sector. Free transfers within the cooperative would allow persons to lease quota to other cooperative members that can harvest the fish more efficiently. Any improved efficiency would generate more net benefits to the Nation by increasing producer surplus.

Several factors complicate an accurate assessment of caps and whether they are need, given the fluctuating pollock stocks and the impact those fluctuations have on the TAC of allocated species. A lack of verifiable ownership information allows only rough estimates of the caps to be generated. . Without these data, it is difficult to determine an estimate of the current distribution of interests in the fishery, preventing a verifiable and accurate assessment of the number of participants currently supported in the fishery. Limited information on first wholesale prices and costs of production, for the allocated species, also limits our ability to estimate impacts on profitability of these at-sea processors. Without knowing the profitability of at-sea processors, it is impossible to estimate, with any certainty, the number of participants the different allocated fisheries can support. Another factor making it difficult to assess user caps for the Non-AFA Trawl CP sector is predicting the amount of consolidation that would occur without caps. This information would provide some measure of the impacts of the user caps. Combined, these factors make it difficult to provide an accurate estimate of whether use caps are needed for the Non-AFA Trawl CP sector and what percentage of the TAC should be established as a cap.

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<sup>27</sup> Concentration of shares in a fishery is unlikely to affect final product markets, as most fisheries' outputs compete in a world market. Concentration of shares, however, could affect the balance of power between the eligible participants in the Non-AFA Trawl CP sector.

**Excessive shares: Ownership cap analysis**

Several factors could be used to assess whether excessive share caps on ownership and control are needed and if they serve the objectives of the Council. The number of participants that would remain in the sector if all participants buy or lease shares up to the cap would illustrate the potential limit on concentration of shares. The number of historical participants in the fisheries allocated to the Non-AFA Trawl CP sector provide some indication of the number of participants that these fisheries may support.<sup>28</sup> The number of participants historically in the fishery also provides some insight into whether the cap is consistent with past participation levels. Also, since allocations might be a reflection of historic participation, the number of persons that would receive allocations at or above the cap might also provide some insight into whether the cap is consistent with historic participation, if participation is stable over time. The analysis below is intended to provide the Council with a discussion of the options under consideration and available data that might form the basis for a decision of an acceptable ownership cap if one is needed.

Excessive share caps were analyzed using vessel data aggregated at the LLP owner level and supplemented by information provided by members of the sector. The caps were estimated using only the 5 BSAI species allocated under Amendment 80. It is assumed that Pacific cod will be included in the ownership cap calculations when the Non-AFA Trawl CP sector is given their allocation under Amendment 85. However, those calculations are not included in these estimates due to limits on available data. Amendment 85 has been approved by the Council and would allocate 13.4 percent of the BSAI Pacific cod ITAC to the Non-AFA Trawl CP sector, if approved by the SOC and implemented by NMFS.

Given that the proposed caps would be applied at the individual species level, vessel catch history for the allocated species were reported separately to show the number of owners above specific caps. These percentages were analyzed based on the allocation options at the Non-AFA Trawl CP sector level. Allocations were calculated for both retained and total catch. These allocations are based on the activity of 12 companies that are thought to be part of the sector. It is important to note that information on ownership has not been verified through official sources. Since no information is available concerning the percentage of ownership of any vessel or LLP license by any person, beyond the company level, the analysis credits each owner with full ownership of the entire allocation

Option 11.2 provide the information that can be shown for the number of companies over the various ownership caps Table 3-67 shows the number of eligible LLP owners that exceeded the 20, 30, or 50 percent ownership caps. In general, between 1 and 3 companies<sup>29</sup> exceed the 20 percent ownership caps under most options for rock sole, flathead sole, and AI POP. Between 1 and 3 companies are over the 20 percent cap for yellowfin sole and Atka mackerel. The number of owners over the cap is fairly consistent over all of the options. At the 30 percent excessive share cap level, no company exceeds the cap for rock sole when total catch is used in the calculation. One to three companies are over the limit for all other species in most options. When 50 percent is used for the excessive share cap, no companies were over the cap for yellowfin sole, rock sole, or flathead sole. One to three companies were over the excessive share cap for Atka mackerel and AI POP.

Based on the information in Table 3-67, a maximum of one to three companies will be impacted by the excessive share caps for a species. These companies will not be allowed to purchase the harvest privileges for species if they are above the cap. Depending on the cooperatives that are formed, these companies may be able to harvest additional fish if they can lease from other members.

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<sup>28</sup> Historical participation for each fishery allocated to the Non-AFA Trawl CP sector is shown in Section 3.2.3. However, given entry and exit over time, one may not be able to conclude that these numbers accurately reflect those “supported”, or “supportable” by the fisheries.

<sup>29</sup> The exact number cannot be reported because that data is considered confidential.

**Table 3-67 Excessive share caps analyzed using vessel data at the LLP license holder level for each year combination under Option 9.1, total catch, and Option 9.2, retained catch**

Allocation Option/Catch History Years		Sum of LLP owners with over 20 percent catch history		Sum of LLP owners with over 30 percent catch history		Sum of LLP owners with over 40 percent catch history		Sum of LLP owners with over 50 percent catch history	
Years	Species	Total	Retain	Total	Retain	Total	Retain	Total	Retain
1995-2003 (drop lowest 3)	Yellowfin Sole	*	*	*	*	*	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	*	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1997-2003 (drop lowest 2)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	*	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1998-2002 (drop lowest)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	*	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1998-2002	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	*	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1998-2003 (drop lowest)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	*	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1999-2003 (drop lowest)	Yellowfin Sole	*	*	*	*	*	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	0	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1997-2004 (drop 2 lowest)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	0	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*
1997-2004 (drop 3 lowest)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	0	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*

Allocation Option/Catch History Years		Sum of LLP owners with over 20 percent catch history		Sum of LLP owners with over 30 percent catch history		Sum of LLP owners with over 40 percent catch history		Sum of LLP owners with over 50 percent catch history	
Years	Species	Total	Retain	Total	Retain	Total	Retain	Total	Retain
1998-2004 (drop 2 lowest)	Yellowfin Sole	*	*	*	*	0	*	0	0
	Rock Sole	*	*	0	*	0	0	0	0
	Flathead Sole	*	*	0	*	0	0	0	0
	Atka Mackerel	*	*	*	*	*	*	*	*
	AI POP	*	*	*	*	*	*	*	*

Source: NMFS WPR Data

\* Withheld due to confidentiality requirements.

Information developed for the excessive shares analysis shows that several companies could greatly increase their holdings before they reach the proposed caps. That result is not surprising. The caps are set at levels that would allow, 2, 4, or 5 persons to hold all the quota allocated to the sector. Given that about 12 companies are currently participating in the sector, at least half of the companies could leave the fishery before the caps are binding on all the remaining participants.

Component 11.3 sideboard caps calculations are based on the aggregate of all species combined, as opposed to Option 11.2 where the caps were calculated on a species-by-species basis. Table 3-68 shows that no companies were over the 50 percent cap. At least one company was over the 20 and 30 percent caps under every option.

**Table 3-68 Number of companies over the ownership caps.**

Allocation Option/Catch History Years	Sum of LLP owners with over 20 percent catch history	Sum of LLP owners with over 30 percent catch history	Sum of LLP owners with over 40 percent catch history	Sum of LLP owners with over 50 percent catch history
Based on Option 9.1 (total catch)				
1995-2003 (drop lowest 3)	*	*	*	0
1997-2003 (drop lowest 2)	*	*	*	0
1998-2002 (drop lowest)	*	*	*	0
1998-2002	*	*	*	0
1998-2003 (drop lowest)	*	*	*	0
1999-2003 (drop lowest)	*	*	*	0
1997-2004 (drop lowest 2)	*	*	*	0
1997-2004 (drop lowest 3)	*	*	*	0
1998-2004 (drop lowest 2)	*	*	*	0
Based on Option 9.2 (retained catch)				
1995-2003 (drop lowest 3)	*	*	*	0
1997-2003 (drop lowest 2)	*	*	*	0
1998-2002 (drop lowest)	*	*	*	0
1998-2002	*	*	*	0
1998-2003 (drop lowest)	*	*	*	0
1999-2003 (drop lowest)	*	*	*	0
1997-2004 (drop lowest 2)	*	*	*	0
1997-2004 (drop lowest 3)	*	*	*	0
1998-2004 (drop lowest 2)	*	*	*	0

Source: NPFMC Amendment 80 Database

Note: An asterisk indicates that between 1 and 3 companies were over the cap. The exact number cannot be reported to protect confidential data.

The information that can be provided in the above table indicates that the sector can undergo considerable consolidation under each of the alternatives. Allowing the fleet to consolidate should enable the remaining companies to operate more efficiently. Improvements will be due to the cost savings that result

from retiring vessels that are the least efficient. More efficient vessels will harvest their allocations and reduce the overall costs of production.

If the excessive share cap is set at a higher percentage of the sector's allocation, then the more efficient operations will tend to buy those that are less efficient. Because they are more efficient they will be able to offer a higher price to the persons wishing to exit than owners with less efficient operations could.

Vessel owners that want to leave the fishery would prefer that ownership caps be very loose or not implemented, so they can sell their allocations to the persons that can pay the most for the harvest rights. Restrictive caps would preclude some buyer from the market, and this could reduce the sale price of their allocation relative to the price they could receive under free market transactions.

Table 3-69 shows the mean allocation for the sector, the median allocation that was calculated, and the average of the four largest allocations for each alternative. The data indicates that there is relatively little variation in the median allocation and the average of the four largest allocations. This indicates that the options selected will have relatively small impacts on the allocation relative to the size of the sideboard cap that should be selected. Data for the average of the four largest operations shows that they account for about 70 to 80 percent of the sector's total allocation. The other 8 companies control the remaining 20 to 30 percent of the sector's allocation.

**Table 3-69 Mean allocation for the Non-AFA Trawl CP sector, median allocation, and the average of four largest allocations for each alternative**

Allocation Option/Catch History Years	Mean	Median	Average of four largest allocations
<b>Based on Option 9.1 (total catch)</b>			
1995-2003 (drop lowest 3)	9.1	5.0	17.5%
1997-2003 (drop lowest 2)	9.1	5.7	17.3%
1998-2002 (drop lowest)	9.1	5.6	17.6%
1998-2002	9.1	5.1	17.8%
1998-2003 (drop lowest)	9.1	5.8	17.6%
1999-2003 (drop lowest)	9.1	5.8	17.5%
1997-2004 (drop lowest 2)	9.1	5.7	17.7%
1997-2004 (drop lowest 3)	9.1	5.8	17.2%
1998-2004 (drop lowest 2)	9.1	5.9	17.4%
<b>Based on Option 9.2 (retained catch)</b>			
1995-2003 (drop lowest 3)	9.1	4.1	19.0%
1997-2003 (drop lowest 2)	9.1	4.1	18.8%
1998-2002 (drop lowest)	9.1	4.1	19.1%
1998-2002	9.1	4.0	19.3%
1998-2003 (drop lowest)	9.1	4.2	19.0%
1999-2003 (drop lowest)	9.1	4.3	18.9%
1997-2004 (drop lowest 2)	9.1	4.3	18.9%
1997-2004 (drop lowest 3)	9.1	4.8	18.6%
1998-2004 (drop lowest 2)	9.1	4.9	18.7%

Source: NPFMC Amendment 80 Database

### ***Species versus Aggregate Excessive Share Caps***

The Council has considered both species-by-species and aggregate excessive share caps. Species-by-species caps would reduce flexibility of the participants, because they would need to monitor five caps (six when Pacific cod is added). Since history can only be sold in whole, purchasing a vessel and its history may put the buyer over one or more cap, while being below the aggregate cap. Under the species-by-species program the sale would not be allowed because the buyer would exceed an excessive share cap. If aggregate caps were implemented the buyer would be allowed to purchase the vessel because they would be under the aggregate cap.

A reason why some individuals may not like aggregate excessive share caps is that it could allow an entity to own an entire fishery and remain under the cap. Assume that the ownership cap is set at 30

percent of the sector's allocation. Also assume that the Council allocates 90 percent of the Atka mackerel and POP fisheries, 98 percent of the flathead sole, 97 percent of the rock sole, and 82.5 percent of the yellowfin sole fishery to the Non-AFA Trawl CP sector. Assuming 2005 TACs for each of those species, calculating the percentage of each species relative to the total of all species results in the following:

<i>Atka Mackerel</i>	28.7%
<i>Flathead sole</i>	9.7%
<i>POP</i>	5.1%
<i>Rock sole</i>	18.6%
<i>Yellowfin sole</i>	37.9%

Those percentages indicate that one entity could potentially own the POP (5.1 percent of the aggregate cap) or flathead sole (9.7 percent of the aggregate cap) fisheries and still be under the cap. Since species cannot be sold separately, it is unlikely that one person could ever own the entire fishery, but they could buy a vast majority of the fishery if they were willing to pay prevailing market prices. If a primary goal is to prevent individuals from owning the vast majority of a single species, then species-by-species caps would be preferred. It could also be argued that species-by-species caps give policy maker more flexibility to set caps at an appropriate level for each species. For example, the POP cap could be set higher than the yellowfin sole cap.

The above discussion highlights problems and benefits of each alternative. Deciding which method to use will require the decision maker to balance the desire to provide flexibility to members of the fleet or have greater control over the ownership over individual species in the complex.

### **Management of Excessive Share Caps**

Ownership caps set for the Non-AFA Trawl CP sector will be calculated using the individual and collective rule using the 10 percent ownership standard. The individual and collective rule defines how much of the sector's catch history a "person" may "hold". The term hold in this amendment refers to ownership and cooperative leasing. The ownership portion of the issue will be addressed as it was under the Crab Rationalization and Halibut/Sablefish IFQ programs. Persons owning 100 percent of a vessel<sup>30</sup> would be assigned 100 percent of the vessel's history toward their cap. If they own 50 percent of the vessel they are credited with owning 50 percent of the history assigned to that vessel. Once the person is assigned an amount equal to the cap they would not be allowed to own any additional amount of the sector allocation. Inter-cooperative leases would also be limited, if everyone in the cooperative is at or above the cap. In this program a minimum of 3 distinct entities must join a cooperative before it is allowed to form. At the 30 percent ownership cap the minimum number of entities necessary to form a cooperative could hold 90 percent of the sector's allocation. Grandfather provisions in this amendment could also make it possible for three persons to hold the entire sector allocation if one of the cooperative members was grandfathered to harvest 40 percent of the sector's allocation. If a fourth member joined the cooperative, the cooperative could hold the entire sector allocation. However, if only three persons were part of the cooperative and they were not grandfathered to hold additional amounts of the sector's allocation, they would be prohibited from leasing any addition portion of the sector's allocation from other cooperatives.

The caps will be calculated based on the number of "catch history units"<sup>31</sup> a person holds. Assuming the caps are based on the aggregate of all species in the sector and one unit is equal to one pound of catch history, then a person would be allowed to own 30 percent of the qualifying historic catch by the sector.

<sup>30</sup> In cases where the catch history is applied to a license (permit), ownership of the license would determine the amount of the sector's allocation a person holds.

<sup>31</sup> Catch history units are defined to be analogous to quota share units in an IFQ program.

Since the units do not change over time, a person will always know where they stand relative to that caps even when TAC of the allocated species fluctuate.

### **Excessive Shares: Vessel Use Caps**

In addition to the ownership caps discussed above, the Council is also considering vessel use caps. Vessel use caps would limit the percentage of the Non-AFA Trawl Sector's allocation of the five primary species that a vessel may harvest. The vessel use caps being considered are 5, 10, 15, or 20 percent of the five species in aggregate. The Council could also elect to take no action on vessel use caps and essentially default to a use cap of 100 percent of the sector's allocation.

Implementing a vessel use cap would help ensure that a sufficient number of vessels remain active in the Non-AFA Trawl CP sector. A 5 percent use cap would require about 20 vessels to harvest the five species allocated to the sector. The actual number of vessels could be more or less than 20. If several active vessels are harvesting less than 5 percent of the sector's allocation then more than 20 vessels could participate. Given the historic catch of vessels in the fleet, it is unlikely that more than 20 vessels would be required to harvest the allocation. Seven vessels averaged more than 5 percent of the sector's harvest from 1995-2004. These vessels may be grandfathered to harvest a percentage that is over the cap, so it is also possible that fewer than 20 vessels could be used to harvest the entire allocation. Given that 27 vessels are expected to qualify for the sector, a vessel use cap of 5 percent would allow approximately 7 vessels to leave the fishery. Setting the cap at 10 percent would require about 10 vessels to remain in the sector to harvest the allocation. Using 10 vessels to harvest the entire sector allocation would technically allow 17 vessels to exit. Given historic harvest levels by vessel, it is unlikely that 10 vessels<sup>32</sup> would harvest the entire allocation at current TAC levels. However, if TACs of the five allocated species decline in the future, it may be possible for the entire allocation to be harvested by 10 vessels. TAC declines of a magnitude that would allow the allocation to be harvested by 10 vessels are not expected given current ABCs of these species and projections of future pollock TACs. Under a 15 percent vessel use cap, at least 7 vessels must remain in the fleet. Finally, if the use cap is set at 20 percent of the sector's allocation, 5 vessels would be allowed to harvest the entire allotment.

As many as 4 vessels, in the Non-AFA Trawl CP sector, have historically harvested more than 10 percent of the sector's allocation. Their owners would likely want the opportunity to harvest percentages equal to their historic amounts in the future. The grandfather provision would benefit the owners of these vessels. Without a grandfather provision they would be required to lease some of their initial allotment to other harvesters. The amount of revenue generated from those leases will be impacted by the demand from other members of the sector to harvest their excess allotment. If demand is limited as a result of the cap, then the lease price will be reduced below its unconstrained market value. The level of demand will be impacted by the number of vessels that have room under the cap and any transfer restrictions that are implemented.

Consolidation of the fleet is expected to occur as a result of the cooperative structure and vessels being assigned a specific percentage of the five allocated species they may take into a cooperative. Reducing the number of vessels in the fleet is expected to improve the overall economic efficiency of the sector, but will also reduce the number of jobs that are available in the sector. Economic efficiency is expected to improve as the most efficient vessels<sup>33</sup> harvest more of the sector's allocation. The owners of these vessels should be able to purchase the harvest privileges assigned to vessels whose cost of production is higher.

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<sup>32</sup> Some members of the sector have indicated during public testimony that they estimate the fleet would reduce to approximately 15 vessels with no use caps. This estimate was based on their personal opinion and knowledge of the sector.

<sup>33</sup> Efficient vessels are able to harvest and process Amendment 80 species at a lower cost than other vessels in the fleet. A lower cost structure and revenues that are comparable revenues allow vessels to generate a larger producer surplus.

Table 3-70 reports the number of Non-AFA Trawl CP vessels that caught amounts of Amendment 80 species that would be over the proposed vessel use cap amounts. Information in the table is reported for the years 1995 through 2004 and the average of 1995 through 2004. Cells that contain an asterisk indicate that less than three vessels met the criteria. Setting the vessel use cap at 5 percent would have impacted between 7 to 9 vessels depending on the year. At the 10 percent level, from 1 to 4 vessels would have been impacted. Less than three vessels would have been impacted at the 15 percent level, and no vessels would have been impacted at the 20 percent level. While this example does not indicate the number of vessels that could be impacted by use caps in the future, it does show that selecting a use cap less than 10 percent or possibly 15 percent could prohibit vessels from harvesting their historic percentage of the sector's catch. The impacts on those vessels would be even greater if a grandfather provision that allows vessels to harvest their initial allocation is not included. At least one vessel would benefit from the grandfather provision under the 5, 10, or 15 percent alternatives.

**Table 3-70 Number of vessels over the proposed vessel use caps**

Vessels	5%	10%	15%	20%
1995	7	*	*	0
1996	8	4	*	0
1997	8	*	*	0
1998	7	4	*	0
1999	7	3	0	0
2000	8	3	0	0
2001	8	*	0	0
2002	8	*	0	0
2003	9	*	0	0
2004	9	3	0	0
1995-2004	7	3	0	0

Source: NPFMC Amendment 80 database.

It is assumed that the grandfather exemption will be determined annually based on each vessel's percentage of that year's allocation. NOAA Fisheries will determine the percentage of the five allocated species a vessel is allowed to take into a cooperative, in aggregate, at the time they are allocated each year. If a vessel is assigned an amount of the sector's allocation above the use cap, the vessel would be grandfathered to harvest the percentage of the sector's allocation equal to their initial allocation. Grandfathered vessels would be allowed to harvest their initial allocation, but they would be unable to harvest any portion of another vessel's allocation, in addition to their own. Vessels whose initial allocation is below the use cap would be allowed harvest other cooperative member's allotments (and NMFS approved transfers from outside the cooperative), until they harvest up to the use cap. Once the cap is reached that vessel would be required to stop fishing for the five allocated species for the remainder of the year.

Given TACs fluctuations that occur from year-to-year, it is possible that a vessel could be over the use cap some years (and be allowed to harvest their allotment under the grandfather provision) and be under the cap other years. The years they are over the cap they would be grandfathered and the years they are under the cap they would be limited to harvesting 10 percent of the sector's allotment.

Permanent transfers of catch history that are assigned to a license, not a vessel, would only be allowed if the qualified vessel the history is placed on would not be over the cap after the transfer. If stacking the license on a vessel would put the vessel over the use cap, the transfer would not be allowed by NMFS.

Limiting the harvest of the vessels over the cap may prohibit some of the most economically efficient harvesters from catching as much of the sector allocation as they would without use caps. Limiting their

harvest will restrict efficiency improvements. Requiring less efficient vessels to harvest more of the sector's allocation will reduce net benefits to the Nation and could reduce the compensation vessels wishing to exit the fishery will receive.

Selecting a use cap and its associated percentage requires the Council to balance their desire for economic efficiency and their desire to maintain jobs and competition in the market. Determining the appropriate cap level is not possible based solely on information that can be gleaned from the historic catch data. Information provided in public testimony and personal knowledge of the fishery will play an important role in determining an appropriate cap.

### **3.2.10 Component 12 – Sideboards for Pacific Cod and Non-Allocated Species**

Allowing members of the Non-AFA Trawl CP sector to form a cooperative, or cooperatives, should allow them to rationalize when and where they fish. The increased flexibility in planning their fishing year is expected to enable companies to alter their historic fishing patterns and improve their efficiency. Efficiency improvements would reduce the costs associated with harvesting and processing catch. However, the flexibility that allows them to change their fishing patterns could also give them a competitive advantage over other participants in the North Pacific fisheries that are unable to rationalize their fishing operations. For example, if members of the Non-AFA Trawl CP sector can decide the best time to fish their allocation, it may provide them opportunities to increase their participation in GOA or BSAI groundfish fisheries. Under the old system they may not have had the opportunity to participate in those fisheries at that level because of conflicts with other fishing seasons. Under a cooperative program, the cooperative members' participation in these fisheries would only be limited by the restrictions on their groundfish license and its associated endorsements, the amount of PSC they are allocated, and fishing conflicts that cannot be overcome<sup>34</sup>. Expanding their participation in the fisheries not directly allocated among members of the Non-AFA Trawl CP sector could result in other participants having less fish available to harvest. Fishermen historically participating in those fisheries may feel they are disadvantaged as a result of the cooperatives. As a result they may request that harvest limits be placed on the fishermen participating in cooperatives to restore the balance that existed prior to the cooperative(s) forming.

Harvest caps would allow the cooperative members to catch up to their "historic" amounts of species they harvest out side of their cooperative allocation. Harvest caps are not an allocation. They are a limit on the maximum amount of a species the sector can catch. Members of the sector are not guaranteed that amount of catch. They must compete against other fishermen to catch the fish before the TAC is harvested. Cooperative harvest caps were first developed as part of the AFA and were frequently referred to as "sideboards" in that amendment, since they limited the AFA cooperative members' expansion into other fisheries. Given that similar impacts could result from allowing cooperatives to form under Amendment 80, the Council thought it would be prudent to consider harvest limits as part of this amendment package. The options considered by the Council are analyzed in this section of the document and are provided in the text box below.

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<sup>34</sup> These conflicts could include biological factors such as spawning aggregations at given times of the year, increased values associated with roe, and bycatch interactions.

Component 12	Establishes measures to maintain relative amounts of non-allocated species until such time that fisheries for these species are further rationalized in a manner that would supersede a need for these sideboard provisions. Sideboards shall apply to eligible licenses and associated vessels from which the catch history arose.
Option 12.1	BSAI and/or GOA sideboards for the Non-AFA Trawl CP sector would be established by regulation using the same years used to calculate the apportionment of PSC and groundfish between the Non-AFA Trawl CP and limited access pool until such time as these other fisheries are rationalized, when the allocations are determined in these newly rationalized fisheries.
Suboption 12.1.1	Sideboards would be allocated between cooperative and non-cooperative LLP holders, based on the same formula as Component 10.
Option 12.2	BSAI and/or GOA sideboards for the Non-AFA Trawl CP sector would be established by regulation by establishing percentages and/or amounts for the species/fisheries not included in this program. These measures maintain relative amounts of non-allocated species until such time that fisheries for these species are further rationalized in a manner that would supersede a need for these sideboard provisions.
Suboption 12.2.1	Sideboards would be allocated between cooperative and non-cooperative LLP holders, based on the same formula as Component 10.
<b>*Option 12.3</b>	<b>In the BSAI, Pacific cod will be managed under existing sector apportionments, with rollovers, until new Pacific cod sector allocations are implemented. Pacific cod will be allocated between the cooperative and non-cooperative sub-sectors based on the same formula as Component 10.</b>
	<b>In the BSAI, management of unallocated species should remain status quo.</b>
Option 12.4	GOA sideboard provisions
	Sideboard provisions for Amendment 80 qualified non-AFA trawl CP sector with valid transferable GOA LLP with appropriate area endorsements are as follows:
*Suboption 12.4.1	<b>Vessels associated with LLPs that have Gulf weekly participation of greater than 10 weeks in the flatfish fishery during the years defined in Component 10 will be eligible to participate in the GOA flatfish fisheries.</b>
*Suboption 12.4.2	<b>If the analysis shows that one non-AFA trawl CP vessel has significantly higher participation in the GOA flatfish fisheries relative to other non-AFA trawl CP vessels, that vessel may be considered for an exemption from Amendment 80 halibut sideboards in the GOA and may participate fully in the GOA open-access flatfish fisheries. The history of this vessel will not contribute to the Non-AFA Trawl CP sideboards and its catch will not be subtracted from these sideboards.</b>
*Suboption 12.4.2.1	<b>If a vessel is given an exemption to Amendment 80 GOA sideboards, they may not lease their Bering Sea Amendment 80 history.</b>
*Suboption 12.4.3	<b>Gulf-wide halibut sideboards for the deep and shallow complex fisheries would be established by season calculated based on:</b>
Option A:	Bycatch rate approach for each of the target fisheries within each of the regulatory areas (610, 620, 630, and 640) for the Amendment 80 qualified non-AFA trawl sector for the years defined in Component 10
*Option B:	<b>Actual usage for the Amendment 80 qualified non-AFA trawl sector for the years defined in Component 10</b>
Option C:	The Council may select a percentage for halibut sideboards which is between options A and B.
*Suboption 12.4.4	<b>GOA Pollock, Pacific cod, and directed rockfish species (POP, NR and PSR) sideboards for the Amendment 80 qualified non-AFA trawl CP sector would be established using the years defined in Component 10, where catch is defined as retained catch by Gulf area as a percentage of total retained catch of all sectors in that area.</b>

*Suboption 12.4.5	While the CGOA rockfish demonstration program is in place, the CGOA rockfish demonstration program takes precedence. The demonstration program would remove the need for catch sideboards for the CGOA directed rockfish species. The amendment 80 CPs deep halibut mortality sideboard cap for the 3rd seasonal allowance (in July) will be revised by the amount of the deep complex halibut mortality allocated to the rockfish demonstration program for the Amendment 80 qualified non-AFA trawl CP sector while the demonstration program is in effect.
*Suboption 12.4.6	Sideboards apply to vessels (actual boats) and LLPs used to generate harvest shares that resulted in allocating a percentage of the amendment 80 species TACs to the non-AFA trawl CP sector. The intent is to prevent double-dipping with respect to GOA history related to sideboards.
*Suboption 12.4.7	On completion of a comprehensive rationalization program in the GOA, any sideboards from the BSAI amendment 80 plan amendment will be superseded by the allocations in the GOA rationalization program.
*Suboption 12.4.8	Sideboards for PSC and GOA groundfish would be allocated between cooperative and non-cooperative vessel/license that are initially assigned harvest privileges for the five BSAI species allocated, based on the same formula LLP holders, based on the same formula as Component 10.
*Suboption 12.4.9	Each cooperative will receive its GOA sideboards; cooperatives that sign an inter-cooperative agreement that allow aggregation of sideboards will be included within the aggregated sideboards. GOA sideboards may not be transferred between cooperatives. Sideboards limits assigned to cooperative will be managed as hardcaps.

### 3.2.10.1 Option 12.1

Option 12.1 would implement a system designed to limit the harvest of species that are not allocated under Component 1. The harvest limit amounts would be based on the catch of sideboard species by members of the Non-AFA Trawl CP sector during the years used to determine the Non-AFA Trawl CP sector's allocation of target species. Options 12.1 and 12.2 each have a suboption that would allocate the sideboard limits among the cooperatives and the companies that do not join a cooperative. Option 12.2 simply makes a statement that harvest limits could be implemented at a level that the Council determines to be appropriate. This option would require the Council to select an appropriate level for the sideboards. That sideboard amount may or may not equal those calculated using another method. It is assumed that if the level of the sideboard selected falls within the range analyzed in this amendment that no additional analysis would be needed. However, if the sideboards were set at levels outside the bounds of those considered, then the impacts may need to be reviewed in more detail. Option 12.3 would manage BSAI Pacific cod as currently managed with trawl catcher processor sector sharing 23.5 percent of the TAC. Once the Non-AFA Trawl CP sector receives its own allocation of Pacific cod, it will be allocated between the cooperative and non-cooperative groups based on the same formula as Component 10. Finally, Option 12.4 is specific to the GOA fisheries, and nine suboptions are considered within that option. The first suboption would allow only the vessels with the required number of weeks of GOA flatfish participation to fish GOA flatfish in the future. The second suboption would consider a halibut sideboard exemption so a vessel with significantly higher GOA flatfish participation could fully participate in the GOA flatfish fisheries. The third suboption would set GOA halibut sideboards for the deep and shallow water species complexes based on usage rates, actual usage, or a Council defined percentage of the total available halibut. The fourth option would set groundfish sideboards for specific GOA target species using the allocation method described in Component 10. The fifth suboption would remove catch sideboards for the CGOA directed rockfish species due to the CGOA rockfish demonstration program. In addition, the halibut mortality sideboard cap for the deep water complex would be revised for the 3<sup>rd</sup> season by the amount allocated to the rockfish demonstration program. The sixth suboption would specify that sideboards apply to vessels and LLPs that are used to determine cooperative allocations. The seventh suboption would replace GOA sideboards with GOA allocations

upon completion of the GOA rationalization program. The eighth suboption would allocate GOA sideboards and groundfish allocations between cooperatives and the non-cooperative pool using the same formula as Component 10. Finally, the ninth suboption would require each cooperative to include in its contract a provision to not exceed its aggregate cooperative sideboard.

The suboptions included under each of the first two components would allocate sideboards to the cooperative and non-cooperative members of the Non-AFA Trawl CP sector. If the suboption is not selected a single sideboard allocation would be set for the Non-AFA Trawl CP sector. Selecting the option to allocate a single sideboard cap could reduce the benefits that cooperative members are able to generate from the program. Cooperative members would need to plan their fishing seasons such that the sideboard species taken by other members of the sector would not close their target fisheries. They would not be guaranteed the amount of sideboard they are assigned in either case, because vessels outside the sector could harvest those fish and reduce the amount of fish that could be caught. To help ensure that the sideboard species would not limit their target catches, they would likely need to race to catch their target species before the sideboard species are taken. Depending on the amount of sideboard species assigned to the Non-AFA Trawl CP sector, a division among the cooperatives could reduce the pressure to harvest these species. If it appears the sideboards will be a constraint they will need to increase their rate of harvest, especially under a hard cap system, because the cooperative members have no control over the harvesting activities of non-cooperative members or members of the other sectors. The activities of other harvesters can then affect the amount of each species the Non-AFA Trawl CP sector can catch that is not directly allocated to them.

Implementing the suboption would benefit cooperative members, if everyone in the sector does not join a cooperative. The suboption would provide cooperative members more control over their harvest strategy. The amount of control will be greater if the overall sideboards available to the sector are not reduced by catches of vessels outside the Non-AFA Trawl CP sector. If the suboption was not implemented and cooperative members harvest sideboard amounts in an open access environment cooperative members must compete against other members of the Non-AFA Trawl CP Sector and other trawl vessels. The more competition that exists for the sideboard species the greater the reduction in overall efficiency that could occur.

### **Gulf of Alaska**

Two important factors should be considered when developing harvest restrictions in the GOA. The first is the Gulf rationalization program that is currently being contemplated. Implementing a rationalization program that allocates all of the GOA TACs to vessels or groups of vessels would reduce or eliminate the need for additional harvest restrictions. The need for additional sideboard restrictions would probably be eliminated if the rationalization program covered the Central and Western GOA areas and was structured as an IFQ or cooperative program. If the rationalization program was based on revising the LLP to reduce the number of vessels that could fish, limiting the harvest of the Non-AFA Trawl CP sector could still benefit other vessel owners. Owners of vessels may benefit from harvest limitations on the Non-AFA Trawl CP vessels if the GOA rationalization is implemented after Amendment 80 or the Council rejects the GOA rationalization program.

The second issue is the halibut bycatch limits that tend to restrict the harvest of several groundfish species in the GOA. Halibut bycatch limits often constrain harvests of species assigned to the deep and shallow water fishery complexes developed to manage halibut mortality. If vessels do not have adequate amounts of halibut PSC to cover their groundfish harvests, increases for those species will not occur.

Over two-thirds<sup>35</sup> of the vessels expected to qualify for the Non-AFA Trawl CP sector also hold groundfish area endorsements that allow them to fish in the Western and/or Central GOA sub-areas. If all of those vessels were to participate in the Gulf, at higher levels of catch than they have traditionally, they could have a substantial impact on the other vessels that harvest in the GOA.

GOA pollock harvests made by vessels operating in the offshore component of the fleet are limited by Inshore-Offshore regulations. Those regulations allocate 100 percent of the GOA pollock TAC to vessels operating as part of the inshore component<sup>36</sup>. Three Non-AFA Trawl CPs held an inshore endorsement on their Federal Fisheries Permit in 2004. The remaining vessels in that sector would not be allowed to participate in a directed GOA pollock fishery given their offshore designation. Unless more vessels apply for an inshore endorsement, it is unlikely that additional harvest limits are needed in the GOA pollock fishery. Remember that the three vessels are limited by the inshore/offshore regulations in terms of the amount of fish they can process in a week. However, if the intent is to limit pollock bycatch in other fisheries as well as effort in the directed pollock fishery, sideboards may be appropriate.

Pacific cod harvests are also regulated by Inshore/Offshore amendments in the GOA. Those regulations assign 90 percent of the Pacific cod TAC to the inshore component. Inshore participation was limited to three vessels in 2004. Even if more of the Non-AFA Trawl CP vessels that are less than 125 ft LOA apply for an Inshore endorsement in the future, they would still be limited to processing less than 126 mt of pollock and Pacific cod each week. The Offshore component is allowed to harvest up to 10 percent of the quota as incidental catch in other directed fisheries and in a directed fishery Pacific cod fishery, if the fishery is opened. The inshore and offshore allocations are available to both fixed and trawl gear vessels so the Non-AFA Trawl CP sector would be competing against longline catcher processors in the offshore sector and catcher vessels and catcher processors in the inshore fishery. Additional regulations on harvest restrictions may be needed in the Pacific cod fishery, if sufficient concerns exist that the Non-AFA Trawl CP sector will expand their Pacific cod harvests in either the inshore or offshore sectors.

The TAC set for deep water flatfish includes Dover sole, Greenland turbot, and deep sea sole. Historically the TAC for deep water flatfish have been relatively small. The Western Gulf TAC was set at only 330 mt, as of December 2005, and the Central Gulf TAC was 3,340 mt. During the 2004 fishing year, only 7 mt (2 percent) of the Western Gulf deep water flatfish TAC and 614 mt (21 percent) of the Central Gulf deep water flatfish TAC was harvested. Deep water flatfish harvests in 2005 were reported to be at similar levels. Harvest of the deep water flatfish TAC has historically been limited, in part, because of halibut constraints.

Rex sole and arrowtooth flounder are other flatfish species that are prized by the Non-AFA Trawl CP Sector and harvested under the deep water halibut complex allotment. These flatfish species are also constrained by halibut usage limits. During the years 2004-2005 less than 50 percent of the TAC was harvested for each of these species (the only exception is that 67 percent of the Central Gulf arrowtooth flounder TAC was taken in 2005) in the Western, Central, and West Yakutat areas of the GOA. Markets appear to be willing to accept additional deliveries of these species if they can be harvested, according to members of the Non-AFA Trawl CP sector. The primary constraint to their harvest is the availability of halibut PSC. It is expected that members of the Non-AFA Trawl CP sector would target these species before they would harvest species assigned to the deep water flatfish TAC.

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<sup>35</sup> This preliminary estimate is based on the licenses currently assigned to the vessels that appear to qualify under the alternatives being considered by the Council. The percentage could increase if vessels acquire valid trawl CP licenses with GOA area endorsements.

<sup>36</sup> An inshore processor is defined in 50 CFR Section 679.2 as either a shoreside plant, a stationary floating processor that holds an inshore endorsement on their Federal Fisheries Permit and operates in a single geographic location while processing Pacific cod or pollock harvested in a directed fishery within Alaska state waters for the entire year, or a mobile processing vessel that has an inshore endorsement on their Federal Fisheries Permit and is less than 125' LOA and processes less than 126mt of pollock and Pacific cod per week.

A specific amount of halibut PSC is apportioned to the deep water species<sup>37</sup> complex for halibut (see Table 3-71). This grouping of species includes rockfish species, deep water flatfish, rex sole, arrowtooth flounder, and sablefish. The deep water halibut complex allotment is set for the entire GOA. The allotment is not further divided by sub-area in the GOA. Therefore when the halibut allotment for the deep water complex is taken, all the deep water fisheries in the GOA are closed to directed fishing.

**Table 3-71 GOA halibut bycatch allotments in 2005 for the deep-water species complex and dates closure notices were issued**

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

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

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

Any vessel that is assigned a valid LLP with the appropriate gear and area endorsements may fish in the GOA. The majority of the Non-AFA Trawl CP fleet holds a valid endorsement to fish in the Western or Central Gulf. These vessels would compete against other trawl catcher vessels and other catcher/processors for halibut assigned to the deep water complex. However, based on the constraints imposed by halibut bycatch limits and the amount of TAC traditionally left unharvested for these species, the harvest limits for deep water fisheries are likely to be a larger percentage of the TAC than has been harvested recently<sup>38</sup>. Non-AFA Trawl CP vessels that participate in GOA fisheries are expected to continue to harvest species that allow them to generate the greatest profits within the halibut bycatch limits. Based on historic market conditions, halibut bycatch rates, and current TACs it is expected that the fleet will continue focusing their effort on rockfish harvests and leave portions of the TACs harvested in conjunction with the deep water complex for halibut unharvested.

Halibut also play an important role in determining when fisheries associated with the shallow water halibut complex will close in the GOA. The GOA species harvested under the shallow water halibut complex allotment include shallow water flatfish, flathead sole, pollock, Pacific cod, Atka mackerel and other species<sup>39</sup>. The TAC set for shallow water flatfish includes all flatfish species except deep-water flatfish, flathead sole, rex sole, and arrowtooth flounder. Flathead sole have their own TAC and it has historically been an important target species for some members of the Non-AFA Trawl CP sector, especially in the Central Gulf area. During 2005, 1,904 mt of Central Gulf flathead sole (38 percent of the TAC) was harvested. In the Western Gulf, only 611 mt (31 percent) of the flathead sole TAC was harvested. In 2005 the shallow-water flatfish ITAC in the Western GOA was 4,500 mt and in the Central Gulf it was 13,000 mt. The shallow water flatfish TACs are larger than the deep water flatfish TACs. During 2005, only 107 mt (2 percent) of the Western Gulf shallow water flatfish TAC was harvested. In the Central Gulf, 4,516 mt (35 percent) of the TAC was harvested. Halibut bycatch limits played a large role in limiting the harvest of the species associated with the shallow water halibut complex.

Halibut bycatch mortality generated harvesting shallow water species during 2005 is provided in (Table 3-72). Proportionally more of the halibut (516 mt.) was harvested after September 1. During the first half of the year the fleet structured their fisheries such that the halibut limit was not exceeded.

<sup>37</sup> Regulations at § 679.21(d)(3)(iii) authorize apportionments of the halibut PSC limit to a deep water species complex, comprised of sablefish, rockfish, deep water flatfish, rex sole, and arrowtooth flounder.

<sup>38</sup> Recall that rockfish will be managed using the rockfish pilot program in the Central GOA. That program will allocate rockfish and PSC amounts for the third quarter of the year.

<sup>39</sup> Regulations at § 679.21(d)(3)(iii) authorize apportionments of the halibut PSC limit to a shallow water species complex, comprised of pollock, Pacific cod, shallow water flatfish, flathead sole, Atka mackerel, and “other species”.

**Table 3-72 Seasons defined for halibut bycatch allotments and dates closure notices were issued for the shallow water species complex**

Season Start	Season End	Amount of Halibut	Total Catch
January 20	April 1	450mt	164mt
April 1	July 5	100mt	275mt
July 5	September 1	200mt	255mt
September 1	October 1	150mt	516mt
October 1	December 31	300mt*	

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

\*No apportionment is made between the shallow-water and deep-water complex during the 5<sup>th</sup> season (Oct 1 – Dec 31).

Information on deep and shallow water closures that occurred as a result of halibut mortality in the GOA is provided in Table 3-73. The information provided in that table shows that halibut has traditionally caused fisheries in those groups to close. Recall that these closures are Gulf-wide, so the closures apply to the Western, Central, West Yakutat, and Eastern Areas of the GOA.

**Table 3-73 Deep and shallow water complex halibut trawl closures over the past 5 years**

Year	Halibut Allotment	Closure 1	Closure 2	Closure 3	Closure 4	Closure 5	Closure 6	Closure 7
2001	Deep Water	25-May	23-Jul	21-Oct				
2001	Shallow Water	27-Apr	26-May	4-Aug	5-Sep	21-Oct		
2002	Deep Water	24-May	2-Aug	13-Oct	10-Nov			
2002	Shallow Water	15-May	5-Aug	13-Oct	10-Nov			
2003	Deep Water	16-May	15-Oct					
2003	Shallow Water	19-Jun	12-Sep	15-Oct				
2004	Deep Water	19-Mar	26-Apr	25-Jul	1-Oct			
2004	Shallow Water	10-Sep	1-Oct					
2005	Deep Water	23-Mar	8-Apr	3-May	24-Jul	4-Sep	10-Sep	1-Oct
2005	Shallow Water	19-Aug	4-Sep	1-Oct				

Source: NMFS

Given that halibut tends to close most of the flatfish species, it is expected that the PSC sideboards will limit the harvest of these species more than groundfish catch limits. The species that close as a result of the TAC being harvested are more likely to require groundfish sideboards than these flatfish species.

Rockfish in the GOA are assigned to the deep water complex for the purpose of halibut bycatch accounting. TAC, rather than the halibut bycatch mortality, typically causes the rockfish fisheries to be closed to directed fishing. The majority of the harvests occurred during the month of July since the rockfish fisheries are closed by regulation until the first week in July. Table 3-74 provides a brief summary of the rockfish closures during 2004. The important point of this table is that it shows Pacific Ocean perch, pelagic shelf rockfish, and Northern rockfish all closed as a result of the TAC being reached during July. Though these species do not close every year as a result of the TAC being taken, it is not uncommon.

**Table 3-74 Directed fishing closure dates for various GOA rockfish species during 2004**

Species	West Yakutat*	Central Gulf	Western Gulf
Pacific Ocean Perch (POP)	July 16 (TAC)	July 12 (TAC)	July 17 (TAC)
Northern Rockfish	n/a	Jul 25 (H)	July 24 (TAC)
Pelagic Shelf Rockfish	July 21 (TAC)	Jul 25 (H), Oct 1 (H)	Jul 25 (H), Oct 1 (H)
Shortraker/Rougheye Rockfish	January 1	Jan. 1	Jan. 1, Jul 28 (PSC)
Other Rockfish	January 1	Jan. 1, Jul. 28 (PSC)	January 1

Source: NMFS Notes: POP, Northern rockfish, and pelagic shelf rockfish opened to directed fishing on July 4<sup>th</sup> for the first time in 2004. Shortraker/rougheye, thornyhead, and other rockfish were placed on bycatch status January 1<sup>st</sup>. Those species were never opened to directed fishing. The reason the fishery was closed is listed in the parentheses and (TAC) means the Total Allowable catch of the species was taken for that season, (H) means that the fishery was closed because the halibut PSC limit was reached, and (PSC) means the species was placed on PSC status.

\*Shortraker/rougheye rockfish are managed as an Eastern Gulf species.

Table 3-74 indicates that of the rockfish species in the GOA, POP fisheries generally close first. In 2004 POP was only open to directed fishing for about fourteen days in the Western Gulf, eight days in the

Central Gulf, and thirteen days in West Yakutat. Northern rockfish was the next species to close in the Central and Western Gulf. Those fisheries stayed open about 3 weeks in both areas. Pelagic shelf rockfish stayed open to directed fishing about 2.5 weeks in West Yakutat and about 3 weeks in the Central and Western Gulf.

The short seasons indicate that when rockfish fisheries are open, a substantial amount of effort moves into those fisheries. Whether additional effort would flow into those fisheries if the Non-AFA Trawl CP sector was rationalized is not known. However, the increase, if any, may be limited given that few fishing opportunities historically existed in the BSAI during the month of July. Vessels would have had the opportunity to participate in those fisheries in the past.

The rockfish pilot program is also expected to control effort in the Central Gulf rockfish fisheries during July. That program will allocate rockfish and the associated halibut PSC to specific vessels. While the Rockfish Pilot program is in place, sideboards in the Central GOA rockfish fishery are unnecessary in July.

Table 3-75, Table 3-76, and Table 3-77, show estimates of the GOA sideboards using the various allocation options under Option 12.1. Note that it is assumed that the percentages selected under Options 12.2 would fall within the range covered in these tables.

**Table 3-75 GOA sideboard estimates based on total catch of Non-AFA Trawl CP vessels divided by the total catch of all vessels**

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Pollock</b>								
Pollock 610	0.5%	0.5%	0.6%	0.4%	0.6%	0.5%	0.6%	0.7%
Pollock Central	0.9%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%
<b>Central Gulf</b>								
Arrowtooth Flounder	63.3%	63.1%	58.8%	64.3%	65.6%	60.5%	65.4%	60.6%
Deep Water Flatfish	25.0%	19.8%	19.2%	17.0%	21.5%	20.5%	25.6%	28.9%
Flathead Sole	33.6%	28.8%	27.1%	28.8%	29.4%	27.3%	29.7%	25.8%
Northern Rockfish	44.7%	36.8%	37.0%	32.9%	34.6%	35.2%	35.6%	36.0%
Other Rockfish	75.0%	56.6%	58.0%	47.3%	52.4%	55.0%	63.2%	65.6%
Pacific Cod	4.9%	5.1%	4.9%	5.5%	5.5%	5.2%	4.7%	4.9%
Pelagic Shelf	44.6%	41.3%	40.6%	39.4%	39.6%	39.1%	39.8%	36.1%
Pacific Ocean Perch	45.1%	45.2%	44.6%	46.9%	45.1%	44.4%	46.2%	44.7%
Rex Sole	81.9%	88.5%	87.6%	90.1%	91.0%	89.8%	91.4%	90.3%
Sablefish	34.9%	33.4%	33.3%	32.7%	33.7%	33.6%	34.6%	36.4%
ShallowWater	5.0%	3.8%	4.3%	4.2%	3.7%	4.3%	3.6%	4.1%
Shortracker/Roughe	61.2%	61.0%	61.0%	62.6%	62.6%	62.5%	68.5%	70.9%
Thornyhead	45.6%	45.4%	46.4%	38.2%	46.1%	47.2%	49.0%	55.1%
<b>Western Gulf</b>								
Arrowtooth Flounder	89.6%	92.2%	92.1%	93.2%	94.4%	94.2%	95.0%	94.8%
Deep Water Flatfish	35.6%	58.4%	60.0%	58.0%	65.3%	66.7%	72.6%	76.3%
Flathead Sole	76.9%	79.2%	81.2%	81.5%	81.6%	83.3%	81.1%	83.1%
Northern Rockfish	98.4%	99.7%	99.6%	99.7%	99.7%	99.6%	99.8%	99.6%
Other Rockfish	73.1%	72.4%	74.8%	78.4%	73.0%	75.2%	73.7%	77.3%
Pacific Cod	2.3%	2.2%	2.2%	2.2%	2.3%	2.3%	2.5%	2.5%
Pelagic Shelf	62.8%	67.3%	73.5%	66.0%	71.4%	76.8%	75.8%	83.0%
Pacific Ocean Perch	98.3%	98.7%	98.9%	99.2%	99.2%	99.4%	99.5%	99.5%
Rex Sole	90.9%	96.2%	96.6%	99.2%	99.3%	99.4%	99.5%	99.5%
Sablefish	69.0%	68.3%	69.4%	65.6%	65.4%	66.9%	65.6%	67.5%
ShallowWater	64.2%	70.8%	70.0%	75.0%	74.3%	73.1%	75.7%	77.1%
Shortracker/Roughe	67.9%	73.5%	73.7%	57.7%	75.4%	75.4%	77.7%	80.3%
Thornyhead	47.4%	51.1%	51.6%	54.2%	53.0%	53.2%	54.7%	54.6%
<b>Entire Gulf</b>								
Atka Mackerel	89.4%	89.2%	90.0%	78.6%	86.1%	88.0%	84.1%	93.3%
Other Species	28.7%	26.7%	25.3%	28.2%	25.8%	24.4%	25.2%	24.8%

Source: Total catch of the Non-AFA Trawl CP sector was estimated using the Council IRFA data set, and total catch of all vessels was taken from the 1995-2004 NOAA Fisheries catch reports ([www.fakr.noaa.gov](http://www.fakr.noaa.gov)).

Note: These tables were generated with data that are considered to be preliminary by the analysts. The official sideboard estimates generated using this method could vary from those reported here.

**Table 3-76 GOA sideboard estimates based on retained catch of Non-AFA Trawl CP vessels divided by the retained catch of all vessels.**

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Pollock</b>								
Pollock 610	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%
Pollock Central	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%
<b>Central Gulf</b>								
Arrowtooth Flounder	63.6%	68.7%	58.0%	76.1%	78.66%	64.72%	80.14%	65.25%
Deep Water Flatfish	13.1%	6.4%	6.1%	4.0%	4.73%	4.45%	3.83%	4.87%
Flathead Sole	31.3%	27.0%	26.0%	27.0%	28.27%	26.86%	29.62%	26.69%
Northern Rockfish	41.5%	32.6%	33.2%	28.5%	30.9%	31.8%	32.1%	32.7%
Other Rockfish	36.1%	7.5%	7.7%	9.1%	7.6%	7.9%	5.7%	3.0%
Pacific Cod	4.1%	4.8%	4.5%	5.4%	5.4%	5.0%	4.5%	4.7%
Pelagic Shelf Rockfish	43.2%	40.4%	39.8%	38.5%	38.7%	38.2%	39.0%	34.8%
Pacific Ocean Perch	41.9%	42.4%	41.9%	44.4%	42.3%	41.8%	43.9%	42.1%
Rex Sole	83.5%	91.0%	90.2%	93.1%	93.8%	92.8%	94.7%	94.0%
Sablefish	32.0%	29.4%	29.6%	28.8%	29.5%	29.8%	31.1%	33.4%
Shallow Water Flatfish	3.4%	2.1%	2.9%	1.9%	1.8%	2.7%	1.6%	2.7%
Shortracker/Rougheye	60.4%	60.9%	60.9%	62.7%	62.4%	62.2%	70.2%	72.1%
Thornyhead Rockfish	44.7%	45.6%	46.6%	38.9%	47.0%	48.0%	50.8%	55.3%
<b>Western Gulf</b>								
Arrowtooth Flounder	98.9%	99.2%	99.0%	99.4%	99.39%	99.17%	99.47%	99.19%
Deep Water Flatfish	7.9%	25.6%	28.7%	28.2%	27.60%	30.90%	32.03%	46.15%
Flathead Sole	87.0%	88.8%	89.8%	93.5%	93.44%	93.31%	97.28%	95.68%
Northern Rockfish	99.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Other Rockfish	19.4%	21.4%	20.2%	30.1%	22.1%	20.8%	22.1%	22.5%
Pacific Cod	1.9%	1.8%	1.8%	2.0%	2.0%	2.0%	2.2%	2.2%
Pelagic Shelf Rockfish	61.4%	66.5%	72.7%	64.8%	70.9%	76.4%	75.6%	83.6%
Pacific Ocean Perch	98.7%	99.1%	99.3%	99.3%	99.3%	99.4%	99.5%	99.6%
Rex Sole	91.3%	96.3%	96.7%	99.4%	99.5%	99.6%	99.8%	99.8%
Sablefish	79.8%	81.2%	83.3%	73.1%	75.4%	78.6%	75.6%	78.2%
Shallow Water Flatfish	81.2%	82.7%	82.3%	80.2%	80.5%	80.2%	81.7%	84.2%
Shortracker/Rougheye	75.8%	81.6%	80.9%	65.3%	83.5%	82.5%	85.2%	85.9%
Thornyhead Rockfish	45.6%	49.4%	50.1%	52.6%	51.4%	51.8%	54.0%	53.2%
<b>Entire Gulf</b>								
Atka Mackerel	95.0%	99.0%	99.2%	97.6%	98.6%	98.9%	98.5%	100.0%
Other Species	7.4%	8.6%	8.8%	6.3%	10.6%	10.6%	11.6%	11.7%

Source: Retained catch of the Non-AFA Trawl CP sector was estimated using the Council IRFA data set, and retained catch of all vessels was taken from the 1995-2004 NOAA Fisheries discard reports ([www.fakr.noaa.gov](http://www.fakr.noaa.gov)).

Note: These tables were generated with data that are considered to be preliminary by the analysts. The official sideboard estimates generated using this method could vary from those reported here.

**Table 3-77 GOA sideboard estimates based on retained catch of Non-AFA Trawl CP vessels divided by the total catch of all vessels**

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Pollock</b>								
Pollock 610	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%
Pollock Central	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%
<b>Central Gulf</b>								
Arrowtooth Flounder	15.18%	17.43%	15.42%	18.34%	19.69%	17.11%	20.60%	18.69%
Deep Water Flatfish	10.04%	4.96%	4.73%	3.14%	3.50%	3.31%	2.51%	3.05%
Flathead Sole	24.43%	20.93%	20.08%	20.83%	21.55%	20.42%	21.81%	20.06%
Northern Rockfish	35.5%	28.0%	28.7%	24.7%	27.0%	27.9%	28.0%	28.8%
Other Rockfish	0.8%	1.5%	1.4%	2.2%	1.8%	1.7%	1.3%	0.6%
Pacific Cod	4.0%	4.7%	4.5%	5.4%	5.3%	4.9%	4.4%	4.6%
Pelagic Shelf	40.6%	38.5%	37.9%	36.7%	36.8%	36.3%	37.0%	33.1%
Pacific Ocean Perch	36.2%	37.4%	37.2%	39.8%	37.6%	37.3%	39.1%	37.6%
Rex Sole	78.7%	86.0%	85.0%	88.0%	88.8%	87.5%	89.2%	87.8%
Sablefish	23.1%	21.7%	22.5%	21.3%	21.9%	22.8%	22.0%	23.7%
Shallow Water	2.9%	1.8%	2.4%	1.6%	1.5%	2.3%	1.3%	2.2%
Shortracker/Roughe	50.1%	50.7%	50.8%	52.8%	52.7%	52.7%	61.3%	63.2%
Thornyhead	39.1%	40.9%	42.0%	35.0%	42.5%	43.7%	45.9%	51.4%
<b>Western Gulf</b>								
Arrowtooth Flounder	40.3%	43.7%	42.4%	46.7%	47.07%	45.39%	49.24%	48.06%
Deep Water Flatfish	4.3%	7.2%	8.1%	10.3%	8.05%	9.00%	8.67%	11.78%
Flathead Sole	57.6%	57.3%	58.5%	57.3%	59.29%	60.19%	59.15%	60.95%
Northern Rockfish	72.3%	75.0%	76.6%	81.2%	76.3%	77.5%	76.6%	75.7%
Other Rockfish	4.8%	5.5%	4.3%	6.5%	5.6%	4.4%	5.5%	4.4%
Pacific Cod	1.9%	1.8%	1.8%	2.0%	2.0%	2.0%	2.2%	2.1%
Pelagic Shelf	55.5%	61.7%	65.0%	60.7%	65.5%	68.0%	69.5%	73.9%
Pacific Ocean Perch	85.0%	83.6%	84.1%	88.3%	82.5%	83.4%	81.7%	81.5%
Rex Sole	88.1%	93.1%	92.8%	95.6%	95.9%	95.1%	96.0%	94.9%
Sablefish	41.1%	39.2%	42.5%	36.2%	35.6%	39.4%	35.4%	40.3%
Shallow Water	39.7%	38.8%	39.6%	35.4%	38.6%	39.6%	39.5%	43.1%
Shortracker/Roughe	63.5%	68.8%	67.8%	49.9%	70.4%	69.2%	73.2%	74.1%
Thornyhead	39.7%	42.4%	43.7%	44.0%	43.7%	44.9%	45.8%	46.9%
<b>Entire Gulf</b>								
Atka Mackerel	71.7%	61.9%	57.2%	56.2%	55.3%	51.7%	55.6%	54.4%
Other Species	2.1%	2.7%	2.9%	1.1%	3.3%	3.4%	3.7%	4.7%

Source: Retained catch of the Non-AFA Trawl CP sector was estimated using the Council IRFA data set, and total catch of all vessels was taken from the 1995-2004 NOAA Fisheries catch reports ([www.fakr.noaa.gov](http://www.fakr.noaa.gov)).

Note: These tables were generated with data that is considered to be preliminary by the analysts. The official sideboard estimates generated using this method could vary from those reported here.

The fisheries that appear to have historically been given a high harvest priority by the members of the Non-AFA Trawl CP sector, in terms of using GOA halibut PSC first, are rockfish species. Because they have been given a high priority those species have relatively high sideboard percentages. The Non-AFA Trawl CP sector would be allowed to harvest most the TAC of those species in the Western Gulf under any sideboard option. In 2004, 60 percent of the Western Gulf - northern rockfish TAC and 43 percent of the pelagic shelf rockfish TAC was harvested before the fishery was closed due to the halibut PSC limit being reached. The percentages of these species that would be allocated as sideboards are greater than the percentage of the TAC taken that year. As a result, the Non-AFA Trawl CP sector will have access to more of TAC than was harvested that year. POP harvests were more than the sideboards so they would be more likely to constrain harvests. The sideboard percentages are lower in the Central Gulf, but they would still be set between 30 and 50 percent of most rockfish TACs. Pelagic shelf and northern rockfish harvests in 2004 were larger than the sideboards, so the sideboard limits could potentially constrain rockfish harvests in the Central Gulf.

Arrowtooth flounder, rex sole, and flathead sole are also important fisheries for the Non-AFA Trawl CP fleet. Sideboard limits for arrowtooth flounder would be approximately 60 percent of the Central Gulf TAC under each of the options using total catch of the sector divided by total catch of all vessels. The

sideboard amount would range from 90 to almost 100 percent in the Western Gulf. Most of the options for setting rex sole sideboards would result in caps at 90 percent of the TAC or more in the Western and Central Gulf. Finally, the flathead sole sideboards would be about 25 to 30 percent in the Central Gulf and 75 to 90 percent of the TAC in the Western Gulf.

Comparing the alternative that uses total catch of the sector over total catch of all vessels to the option that uses retained catch of the sector divided by retained catch of all vessels indicates that under most options the sideboards are larger when total catch is used for arrowtooth flounder and rex sole. The sideboard cap is generally smaller for flathead sole when retained catch is used for the calculation. Calculating sideboard caps using retained catch over total catch results in the smallest sideboard limits in almost every case.

The shallow water flatfish sideboard limit would be considerably larger in the Western than the Central Gulf. The deep water flatfish sideboards also tend to be larger when more recent years are used in the calculation. During the 2004 fishing year only 4 percent of the Western Gulf shallow water flatfish TAC was harvested, and only 16 percent of the deep water flatfish TAC was harvested. Only the deep water flatfish sideboard, calculated using retained catch of the Non-AFA Trawl CP sector divided by total catch of all vessels, results in a smaller sideboard. Under most options the sideboards would not be expected to constrain harvests given the current fishery conditions. Should halibut bycatch become less of a constraint, sideboards could become a binding constraint.

Sideboards would be a constraint in the Central Gulf flatfish fisheries. In 2004, 41 percent of the deep-water TAC and 34 percent of the shallow water TAC was harvested. The sideboards for shallow-water flatfish are projected to be less than 5 percent of the TAC. The deep water flatfish sideboard could be as high as 30 percent or as low as 3 percent, depending on the option selected. A low sideboard could limit catch in the future beyond those imposed by halibut constraints. If the sector is constrained by their groundfish allocation, they would likely attempt to fish species that remain open as long as they have halibut available.

Sideboard limits, in general, are largest when they are based on either the retained catch of the Non-AFA Trawl CP sector divided by the retained catch of all vessels, or on the total catch of the Non-AFA Trawl CP sector divided by the total catch of all vessels. Sideboard limits are generally considerably smaller when they are based on retained catch of the Non-AFA Trawl CP sector divided by total catch of all sectors. The sideboard limits tend to be larger based on total catch of the Non-AFA Trawl CP sector divided by total catch of all sectors when the Non-AFA Trawl CP sector had relatively higher discard rates than other sectors. The Non-AFA Trawl CP sector tends to have higher sideboard limits when the calculation is based on retained catch of the Non-AFA Trawl CP sector divided by retained catch of all vessels when they have retained a greater percentage of species harvested than the other sectors.

### **Bering Sea/Aleutian Islands**

Two BSAI species that would be allocated to BSAI sectors in quantities that would support target fisheries are pollock and Pacific. As discussed earlier, the Non-AFA Trawl CP sector member's pollock harvests are already limited under the AFA. Only the fishing vessel *Ocean Peace*, in the Non-AFA Trawl CP sector, is allowed to participate in the directed pollock fishery. Other vessels will not be allowed to increase their pollock harvests above the incidental catch allowance. It is possible that incidental catches of pollock could increase over time. However, this is a very sensitive issue. Dramatic increases in pollock catches are strongly discouraged and would likely be closely scrutinized by members of the pollock fleet as well as NOAA Fisheries staff. The current pollock ICA is set at 3 percent of the TAC. If NOAA Fisheries determines an increase in the pollock ICA is needed, they will report to the Council and provide information as to why the increase is necessary.

Given the conditions that exist in the pollock fisheries it is unlikely that additional harvest limits are needed in that fishery. However, if the AFA fleet's concerns over ICA increases are viewed as valid

concerns, the percentage taken by the Non-AFA Trawl CP sector could be constrained by sideboards. The sideboard limits in the Bering Sea would be set a just over 50 percent of the ICA.

Pacific cod is another species that would be allocated to other components of the BSAI fleet in amounts that could support a directed fishery. Fixed gear Pacific cod harvests are restricted to vessels that hold a valid Pacific cod endorsement on their license. Based on LLP data as preliminary estimates of qualified vessels, none of the vessels that would qualify for the Non-AFA Trawl CP sector currently hold a license with an endorsement that would allow them to participate in a fixed gear Pacific cod fishery. If a vessel did obtain a license with the appropriate endorsement, they would likely be competing against other vessels that primarily fish Pacific cod when harvesting groundfish. Hook-and-Line CPs are allocated 80 percent of the fixed gear Pacific cod quota. Those vessels typically fish almost exclusively for Pacific cod. Allowing a Non-AFA Trawl CP vessel to obtain an endorsement and participate in that fishery with hook-and-line gear would not be expected to disadvantage other hook-and-line CPs. It would simply allow one hook-and-line CP to replace another. Since the licenses can only be used on vessels that are approximately the same length<sup>40</sup>, it is not anticipated that the Non-AFA Trawl CPs would have substantially greater harvesting power than the vessel they would replace.

The Pacific cod allocation to the hook-and-line catcher vessels greater than 60 ft LOA is only 0.3 percent of the fixed gear quota. It is unlikely that members of the Non-AFA Trawl CP sector would enter that fishery given the limited quota and the limited number of endorsed licenses that are available. Most of the vessels that hold those endorsements rely on other fisheries to generate the majority of their income. Therefore, they would need to purchase a replacement license to continue fishing their primary fisheries. It may be difficult for them to generate sufficient income from trading licenses to justify selling the license package they currently hold.

The remaining fixed gear Pacific cod fisheries are for pot gear. Vessels harvesting Pacific cod with pot gear typically fish cod as secondary fishery to their crab operation. Pacific cod were often harvested in the past after the *C. opilio* fishery closed and during other times of the year when tanner and red and blue king crab fisheries were closed. Crab rationalization should allow these vessels to harvest Pacific cod during times of the year that allows them to maximize profits. It is unlikely that the Non-AFA Trawl CP fleet would want or be able to obtain a substantial number of licenses for the fishery. If they did they would still need to compete against other vessels that are able to rationalize their participation in their other fisheries.

Pacific cod quota for harvest by trawl vessels is equally divided among the catcher vessels and catcher processors. The catcher processors allocation would be divided between the AFA Trawl CPs and the Non-AFA Trawl CPs. The AFA Trawl CPs Pacific cod harvests are limited to be within their sideboard restrictions. Sideboards for the Non-AFA Trawl CP sector would be define as the maximum amount of Pacific cod they would be allowed to harvest in this capacity. Depending on the size of the Non-AFA Trawl CP sideboard and the number of trawl catcher processors operating outside the two sectors, the competition for the trawl CP cod could be limited. That is most relevant if the sum of the two sectors sideboards is equal to 100 percent of less of the total trawl CP Pacific cod allocation. Given that the AFA Trawl CP sector is limited to 25.8 percent of the trawl CP allocation of Pacific cod, the Non-AFA Trawl CP vessels can harvest a minimum of 74.2 percent of the overall allocation to the trawl CP sector.

An allocation of the Pacific cod fishery is being considered under a separate amendment. If that amendment were implemented, it would likely negate the need for Pacific cod sideboards, since each sector would have their own cod allocation in addition to the halibut PSC associated with that harvest. Those allocations would negate the need for Pacific cod sideboards.

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<sup>40</sup> The LLP program allows the license to be used on a vessel (limited by the 125' LOA ceiling) that is 1.2 times the length of the vessels that earned the LLP. Vessels that are greater than or equal to 125' are not allowed to use a license that was issue to a vessel that is smaller than it.

Only the Non-AFA Trawl CV sector remains to be discussed. That fishery appears to be the most at risk of gaining additional effort as a result of the Non-AFA Trawl CP sector forming a cooperative. The level of risk will depend on the number of vessels that elect to participate in both the Non-AFA Trawl CP sector and the Non-AFA Trawl CV sector. Catcher processor vessels are allowed to operate as a catcher vessels and there are no Pacific cod endorsements for trawl gear in the BSAI. The Council may wish to restrict eligible Non-AFA Trawl CP vessels from participating in the Non-AFA Trawl CV sector. If it is not reasonable to restrict participation of the eligible vessels from participating in the Non-AFA Trawl CV sector and sufficient vessels could participate in both sectors, harvest restrictions for the Non-AFA Trawl CP sector may be warranted.

Several BSAI flatfish species are targeted primarily by members of the Non-AFA Trawl CP sector, and are included in the species to be directly allocated to the Non-AFA Trawl CP sector. Given their historic participation in those fisheries, the majority of the flatfish TACs will likely be allocated to them. Preliminary data indicates that, depending on the allocation alternative selected, between 60 percent and 90 percent of the BSAI yellowfin sole TAC will be assigned the Non-AFA Trawl CP sector. The percentage of rock sole and flathead sole allocated to them is expected to be about as large as was projected for yellowfin sole. Like flatfish, the vast majority (over 90 percent) of the AI POP TAC is expected to be allocated to the Non-AFA Trawl CP sector.

Table 3-78, Table 3-79, and Table 3-80 contain estimates of the BSAI sideboards under the various alternatives in Option 12.1. These tables show that the sideboard limits vary more across species than they do for a species over the various time periods. Sideboards tend to be larger in the BS than in the AI (except for other rockfish). Rockfish species that have TACs set for both the BS and AI and Pacific cod, tend to have sideboards from 61 percent to over 73 percent. Because these sideboards are calculated using everyone's total catch, they represent approximately what the sector would catch under historic fishing conditions and TACs.

**Table 3-78 BSAI Sideboard estimates based on total catch of the Non-AFA Trawl CP sector divided by the total catch of all trawl catcher processor vessels**

Species	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_200	2000_2004
<b>Bering Sea</b>								
Other Rockfish	65.77%	61.09%	64.01%	62.78%	65.06%	67.37%	70.24%	73.36%
Pacific Ocean Perch	24.52%	35.83%	34.63%	46.35%	38.65%	36.82%	39.80%	32.53%
Sablefish (Trawl)	85.04%	94.85%	94.50%	95.18%	94.70%	94.36%	94.85%	93.63%
Greenland Turbot	21.00%	25.94%	25.97%	27.78%	27.35%	27.30%	31.91%	30.75%
Pollock - ICA	n/a	n/a	n/a	n/a	n/a	n/a	54.72%	59.14%
<b>Aleutian Islands</b>								
Other Rockfish	61.68%	65.32%	64.69%	69.47%	67.86%	67.00%	71.57%	61.25%
Sablefish (Trawl)	64.94%	99.26%	99.31%	99.72%	99.23%	99.28%	99.21%	99.42%
Greenland Turbot	21.51%	34.81%	35.75%	27.99%	32.15%	33.45%	38.14%	43.09%
Pollock	n/a	n/a	n/a	n/a	n/a	n/a	26.37%	32.18%
<b>Bering Sea &amp; Aleutians</b>								
Arrowtooth Flounder	75.05%	79.21%	80.61%	81.84%	81.73%	82.80%	82.72%	83.66%
Northern Rockfish	77.42%	93.80%	93.80%	96.02%	94.81%	94.66%	94.98%	94.39%
Other Flatfish	75.82%	81.14%	82.49%	86.38%	87.69%	88.45%	90.98%	93.08%
Other Species&Squid	41.62%	43.20%	42.18%	46.20%	44.29%	42.96%	44.94%	42.19%
P. Cod (Trawl -C/P)	n/a	82.7%	84.3%	84.2%	85.8%	87.0%	89.5%	91.2%
Shortraker/Rougheye	47.75%	44.56%	46.41%	44.60%	41.95%	44.49%	42.76%	46.40%
<b>Bogoslof</b>								
Pollock – ICA	n/a	n/a	n/a	n/a	n/a	n/a	5.32%	2.50%

Source: NPFMC Amendment 80 database

Pollock sideboards were only calculated for the years when the AFA was in place and a pollock ICA was established. Pacific cod sideboards were not calculated for the 1995-2003 period because the CV/CP split of the trawl allocation did not begin until 1997.

Table 3-79 reports the sideboard estimates when retained catch is used for both the Non-AFA Trawl CP sector's catch and the total catch. Most of the sideboard estimates using retained catch are larger than when total catch is used. Other rockfish, Bering Sea POP, arrowtooth flounder, and BS Greenland turbot

had the largest percentage increases when retained catch was used. That indicates the Non-AFA Trawl CP sector tends to retain more of these species than other sectors. Aleutian Islands Greenland turbot sideboards did not change much when retained catch is used compared to total catch. The sideboard amounts are decreased for other species/squid and shortraker/rougheye rockfish when retained catch is used to calculate sideboards. The reduction is due to the Non-AFA Trawl CP sector retaining a smaller percentage of these species than other sectors. Therefore, other species could potentially limit the amount of allocated species they can harvest.

**Table 3-79 BSAI Sideboard estimates based on retained catch of the Non-AFA Trawl CP sector divided by the retained catch of all trawl catcher processor vessels**

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Bering Sea</b>								
Other Rockfish	69.77%	64.77%	67.54%	65.42%	68.99%	71.11%	74.32%	77.84%
Pacific Ocean Perch	21.00%	48.60%	45.45%	57.30%	55.78%	50.79%	75.04%	58.76%
Sablefish (Trawl)	85.32%	96.47%	96.19%	96.73%	96.36%	96.08%	96.50%	95.70%
Greenland Turbot	19.02%	23.10%	23.07%	24.80%	24.21%	24.11%	28.83%	27.22%
Pollock - ICA	n/a	n/a	n/a	n/a	n/a	n/a	55.07%	63.26%
<b>Aleutian Islands</b>								
Other Rockfish	58.81%	62.18%	61.10%	68.20%	64.95%	63.61%	68.01%	52.12%
Sablefish (Trawl)	67.79%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Greenland Turbot	23.47%	35.48%	35.96%	28.13%	32.13%	32.98%	38.83%	43.34%
Pollock	n/a	n/a	n/a	n/a	n/a	n/a	61.44%	62.72%
<b>Bering Sea &amp; Aleutians</b>								
Arrowtooth Flounder	88.92%	91.13%	91.51%	94.02%	92.50%	92.71%	93.18%	93.35%
Northern Rockfish	31.80%	81.17%	78.84%	99.66%	79.13%	76.94%	74.68%	63.60%
Other Flatfish	71.73%	67.96%	70.90%	77.06%	79.45%	82.05%	81.80%	92.70%
Other Species&Squid	17.16%	19.30%	19.76%	22.39%	21.49%	21.50%	22.40%	23.30%
P. Cod (Trawl -C/P)	n/a	86.5%	87.9%	87.9%	89.5%	90.3%	93.1%	94.4%
Shortraker/Rougheye	58.58%	56.62%	59.60%	55.93%	54.58%	58.33%	57.27%	61.77%
<b>Bogoslof</b>								
Pollock (ICA)	n/a	n/a	n/a	n/a	n/a	n/a	10.73%	5.15%

Source: NPFMC Amendment 80 database

Note: Pollock sideboards were only calculated for the years when the AFA was in place and a pollock ICA was established. Pacific cod sideboards were not calculated for the 1995-2003 period because the CV/CP split of the trawl allocation did not begin until 1997. An asterisk indicates that the data could not be calculated with the retained catch data available for the entire BSAI fleet, at the time the tables were developed.

Table 3-80 reports the BSAI sideboard estimates when the retained catch of the Non-AFA Trawl CP sector is divided by the total catch of all sectors. This method of calculating sideboards results in lower amounts than either of the other methods. BSAI species with the smallest decline using retained over total catch are Greenland turbot, Pacific cod, and shortraker and rougheye rockfish. Other rockfish declined the most of the AI TACs. It declined from 25 to 30 percent depending on the years used. The other AI sideboards only decline by less than 1 percent to 5 percent. Bering Sea species with the smallest decrease using retained over total catch was Greenland turbot (4 to 6 percent). All other BS species in the Bering Sea were reduced from 10 to 22 percent. Northern rockfish (73 to 92 percent), other flatfish species (64 to 85 percent), arrowtooth flounder (54 to 58 percent) and other species (37 to 43 percent) had the largest decreases of the species that have a TAC set for BSAI species, when compared to Table 3-79. Pacific cod sideboards tended to change a relatively small amount, for most year combinations, when compared to Table 3-79.

**Table 3-80 BSAI Sideboard estimates based on retained catch of the Non-AFA Trawl CP sector divided by the total catch of all trawl catcher processor vessels**

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Bering Sea</b>								
Other Rockfish	51.37%	48.14%	49.99%	47.65%	51.28%	52.61%	56.49%	59.60%
Pacific Ocean Perch	11.46%	17.46%	16.19%	23.48%	18.86%	17.18%	17.49%	14.28%
Sablefish (Trawl)	73.83%	83.47%	82.04%	86.69%	84.00%	82.43%	84.13%	81.19%
Greenland Turbot	16.99%	21.04%	21.01%	22.74%	22.07%	21.97%	25.96%	24.43%
Pollock - ICA	n/a	n/a	n/a	n/a	n/a	n/a	51.70%	31.96%

	1995_2003	1997_2003	1997_2004	1998_2002	1998_2003	1998_2004	1999_2003	2000_2004
<b>Aleutian Islands</b>								
Other Rockfish	35.73%	38.38%	37.47%	43.58%	40.10%	39.00%	43.55%	31.02%
Sablefish (Trawl)	62.61%	94.96%	95.74%	94.50%	94.72%	95.58%	97.38%	98.66%
Greenland Turbot	19.38%	31.90%	32.22%	25.80%	29.03%	29.67%	34.80%	38.43%
Pollock	n/a	n/a	n/a	n/a	n/a	n/a	25.67%	23.65%
<b>Bering Sea &amp; Aleutians</b>								
Arrowtooth Flounder	20.13%	24.33%	23.21%	26.13%	26.42%	24.80%	28.98%	27.51%
Northern Rockfish	4.25%	5.12%	5.15%	5.74%	4.84%	4.92%	4.22%	3.42%
Other Flatfish	11.90%	8.70%	8.93%	8.71%	8.56%	8.86%	7.48%	8.25%
Other Species&Squid	2.25%	2.74%	3.03%	2.58%	3.11%	3.38%	3.48%	4.21%
P. Cod (Trawl -C/P)	n/a	78.6%	81.0%	83.7%	85.5%	86.8%	89.2%	91.1%
Shortraker/Rougheye	38.13%	34.54%	38.40%	34.22%	32.65%	37.17%	33.04%	38.16%
<b>Bogoslof</b>								
Pollock- ICA	n/a	n/a	n/a	n/a	n/a	n/a	2.41%	2.20%

Source: NPFMC Amendment 80 database.

Note: Pollock sideboards were only calculated for the years when the AFA was in place and a pollock ICA was established. Pacific cod sideboards were not calculated for the 1995-2003 period because the CV/CP split of the trawl allocation did not begin until 1997.

### **Crab**

The BSAI crab fisheries are currently managed under a license limitation program, but the Council has approved a voluntary cooperative program for the crab fisheries. It is anticipated that the crab cooperatives will be in place by time the Non-AFA Trawl CP cooperatives could be developed and implemented. If that happens, harvest limits in the crab fishery would not be needed.

#### **3.2.10.2 Option 12.2:**

The Council would select sideboard percentages under this option. Percentages selected would be based on information provided in this section of the document, public input, and personal knowledge of the fishery. It is assumed that the percentage selected would fall within the ranges that are being considered under the other options. The analysis conducted for those options would provide the information needed for the impacts of the selection to be understood.

#### **3.2.10.3 Option 12.3**

This options states that BSAI Pacific cod will continue to be managed under current regulations, including rollover provisions, until sector allocations are implemented in Amendment 85. Continuing status quo management of the Pacific cod fishery should result in minimal impacts to the fleet and the ecosystem. If Amendment 85 is implemented, the new sector allocations will alter the amount of Pacific cod available to the Non-AFA Trawl CP sector. The impacts of redistributing the Pacific cod TAC are provided in Amendment 85. Once the Non-AFA Trawl CP sector allocation is determined, this option states that it will be divided among cooperatives and vessels not joining cooperatives, using the same allocation formula (from components 9 and 10) developed for dividing the 5 BSAI groundfish species allocated under this amendment.

The proposed Amendment 85 action would modify the current BSAI Pacific cod allocations to the various gear sectors, including an exclusive allocation to the Non-AFA Trawl CP sector. This section first describes the allocation options under Amendment 85, then goes on to describe the coordination of management of the Amendment 85 Pacific cod allocation with the management changes for the Non-AFA Trawl CP sector under Amendment 80. Currently, two trawl sectors receive a BSAI Pacific cod allocation: trawl catcher processor sector and trawl catcher vessel sector. Each sector receives 23.5 percent of the non-CDQ BSAI Pacific cod TAC. The four trawl sectors proposed to receive BSAI Pacific cod sector allocations under Amendment 85 are the AFA catcher vessel sector, Non-AFA catcher vessel sector, AFA catcher processor sector, and Non-AFA catcher processor sector. The allocation to each of these sectors would be calculated based on the retained legal catch (including harvested rollovers) from both the federal fishery and the parallel fishery (less CDQ) for the qualifying years as a percentage of the

total retained legal catch by all sectors (fixed-gear and trawl gear combined). Under a suboption, each sector may drop a year drop its worst qualifying year (smallest annual harvest share percentage for that sector). The year combinations options are the following: 1995-2002, 1997-2000, 1997-2003, 1998-2002, 1999-2003, and 2000-2003. The other option the Council may select is to choose percentages of cod allocated to each sector.

Based on the allocation calculation and the different year combinations under Amendment 85, Table 3-81 provides a range of potential sector allocations for BSAI Pacific cod and compares these percentages to current allocations. For the Non-AFA Trawl CP sector, the Pacific cod allocation under Amendment 85 would range from 12.7 percent to 16.2 percent. As noted in Table 3-81, the Non-AFA Trawl CP sector currently shares 23.5 percent Pacific cod allocation with the AFA trawl CP sector, which has a sideboard of 6.1 percent. The Non-AFA Trawl CP sector currently does not have a sideboard for Pacific cod. However, Amendment 80 includes two sideboard options for the Non-AFA Trawl CP sector. The first option would base the sideboard on catch of Pacific cod by members of the Non-AFA Trawl CP sector relative to all trawl catcher processor vessels. The second option available to the Council is to select a percentage and/or amount. Based on calculations from Amendment 80, the sideboard levels could range from 14.8 percent to 20.9 percent. Although the upper range of the Pacific cod sideboard is greater than the upper range of the Pacific cod allocation and the lower range for the allocation is lower than the sideboard range, there is some overlap of the two ranges.

As noted earlier, to simplify management, the sideboards would be divided between the cooperatives and the sector's limited access fishery based on the catch histories of the respective participants in the cooperatives and sector limited access fishery. Each cooperative would manage its compliance with the sideboard, while NOAA Fisheries would manage compliance by members of the sector's limited access. Two changes would occur in management of the sector's Pacific cod catch once Amendment 85 is implemented. First, any sideboard limitations would be removed, with the sector instead being constrained by the Amendment 85 allocation. Second, the division of the sector sideboard between the cooperatives and the sector limited access fishery (based on relative catch histories during the Amendment 80 qualifying years defined in Component 10) would be applied to the Amendment 85 Pacific cod allocation. Applying this distribution will simplify management of the allocation within the sector by continuing cooperative management of cooperative allocations. In addition, sector members that join cooperatives will have the added advantage of exclusive cooperative allocations of Pacific cod that can be harvested to maximize returns. Exclusive allocations should also facilitate bycatch reduction, allowing sector members to more fully harvest allocations limited by PSC. Finally, if the non-AFA trawl CP Pacific cod allocation is further subdivided into separate cooperative(s) and limited access cod allocations, the limited access allocation could be so small that most of the allocation would need to be set aside as an ICA. This is partially due to the reduced size of the allocation from Amendment 85 (the non-AFA trawl CP allocation is estimated to be 13.2% - 16.1% of the BSAI Pacific cod TAC) and due to the variability and unpredictability in the catch of the non-cooperative vessels. NMFS would need a sufficiently large ICA to manage the non-cooperative vessels (the vessels in the cooperative would manage their own allocation).

**Table 3-81 Range of proposed BSAI Pacific cod allocations for the Trawl CP and CV sectors under Amendment 85**

Sectors	Current allocation (% of BSAI Pacific cod ITAC)	Current (or proposed sideboard)	Proposed AM85 allocations
AFA trawl CP	23.5% (AFA CP sector is subject to sideboard of 6.1%)	6.1%	0.9% - 3.7%
Non-AFA trawl CP		14.8% to 20.9 %	12.7% - 16.2%
AFA trawl CV	23.5% (non-exempt AFA CV sector is subject to sideboard of 20.2%)	20.2	17.8% - 24.4%*
Non-AFA trawl CV		n/a	0.5% - 3.1%

Source: Amendment 80 database. Note: Note also that the AFA trawl CP sector is subject to cod sideboards, as are the non-exempt AFA trawl CVs. \*Could include vessels from Non-AFA CV sector that meet the catch eligibility threshold.

### 3.2.10.4 Option 12.4

This option is divided into nine suboptions and focuses strictly on GOA sideboards.

#### 3.2.10.4.1 Suboption 12.4.1

This option is divided into seven alternatives and focuses strictly on GOA sideboards. The first option examines the number of weeks that vessels participate in GOA flatfish fisheries during the qualifying periods developed in component 4. If a vessel fishes at a level over the proposed 10-week threshold they would be allowed to continue fishing in the GOA flatfish fisheries. Vessels that did not fish a sufficient number of weeks would not be allowed to harvest GOA flatfish in a directed fishery in the future. Table 3-82 shows the number of weeks each vessel participated in the GOA flatfish fisheries during the time periods considered. The range in the number of weeks fished is from 0 to 188 weeks depending on the alternative. Each cell in the table represents a vessel's participation. Therefore if the Council selected the years from 1999-2003, for example, and required vessels to have fished at least 10 weeks, 8 vessels would be prohibited from fishing in the GOA for flatfish. Depending on how many weeks of participation are required, this option could have a minimal or substantial impact on the amount of flatfish harvested in the GOA by Non-AFA Trawl CP vessels.

**Table 3-82 Weeks of participation by each Non-AFA Trawl CP vessel in the GOA flatfish fisheries.**

1995-2003	1997-2003	1998-2002	1998-2003	1999-2003	1997-2004	1998-2004	2000-2004
5	1	0	1	1	1	1	1
10	3	2	3	3	3	3	3
10	4	3	4	4	5	5	4
12	6	3	5	4	7	5	5
16	7	4	5	5	7	6	5
17	9	6	7	6	9	7	5
17	10	6	9	6	10	9	6
19	15	8	10	8	15	10	8
19	17	10	16	14	17	16	11
21	17	13	17	14	17	17	12
23	18	14	17	16	18	17	13
23	19	15	17	17	19	17	13
28	22	16	22	18	22	22	15
45	25	19	23	20	25	23	17
64	33	26	31	29	33	31	23
87	67	48	58	46	73	64	39
90	71	55	67	55	74	70	51
91	80	55	72	58	80	72	54
186	133	88	109	91	141	117	89
188	145	95	126	106	161	141	107
200	151	108	129	109	163	142	118

Source: NPFMC Amendment 80 database

#### 3.2.10.4.2 Suboption 12.4.2

The second alternative in this section, Option 12.4.2, would exempt vessels from the GOA flatfish and halibut sideboards if they had significantly higher participation in the GOA flatfish fisheries than other vessels. If this option is selected the historic catch of the exempted vessel will not contribute to the sideboard allocation calculations and the future catch of this vessel will not count against the sideboard caps. Sideboard cap estimates included in this document include the catch history of all Non-AFA Trawl CP vessels. Reporting the sideboard amounts with one vessel's history excluded would violate data confidentiality restrictions that prohibit presenting data that would allow a vessel's historic catch to be calculated. A suboption to this alternative would prohibit any vessels that qualified for this exemption from leasing their BSAI allocation to other members of the Non-AFA Trawl CP Sector.

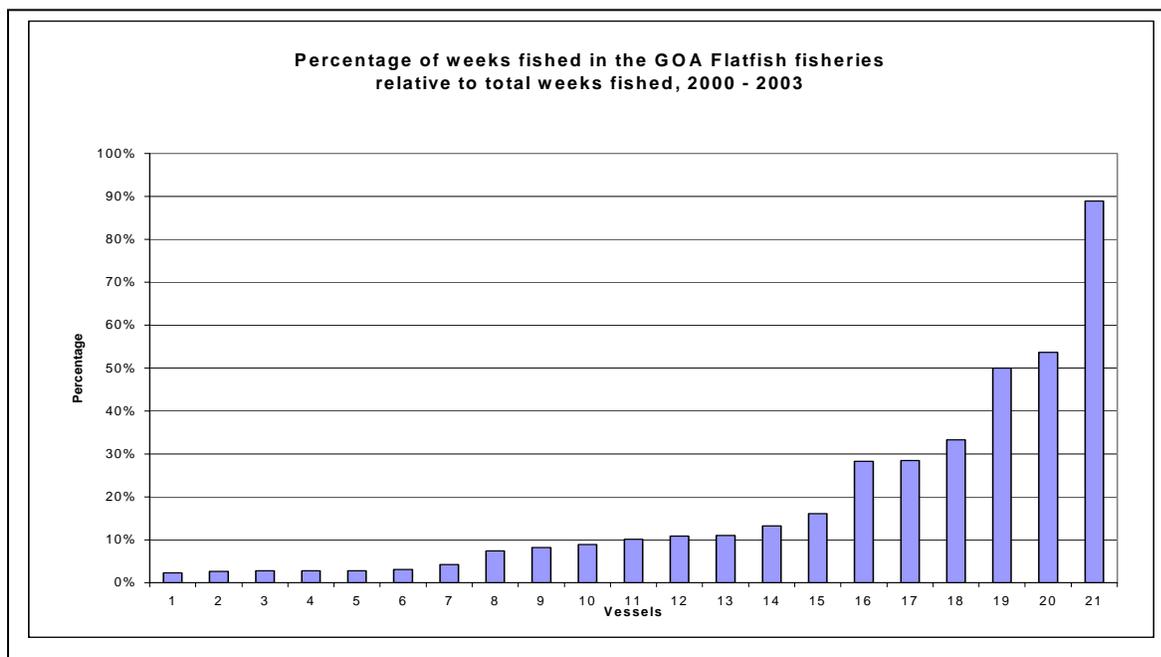
**Figure 3-6 Percentage of weeks fished in the GOA flatfish fisheries relative to total weeks fished**

Figure 3-6 shows that one vessel fished in the GOA flatfish fisheries about 90 percent of the weeks they fished from 2000 through 2003. Only two other vessels fished GOA flatfish more than 35 percent of their fishing weeks fished during that time period. Neither of those vessels fished more than 55 percent of their weeks fished in the GOA flatfish fisheries. Therefore, based on the criteria described in the alternative it appears that one vessel would have significantly more participation in the GOA flatfish fisheries than other Non-AFA Trawl CP vessels since 2000. Because the vessel participated almost 90 percent of the time in GOA fisheries, exempting it from the GOA flatfish and halibut sideboards would have little impact on other participants in the fleet. Requiring the vessel to harvest its own allocation of BSAI species would further reduce the impact of the exemption on other members of the GOA fisheries. It would still likely spend the majority of its fishing time in the GOA, but it would be required to transit to the BSAI and harvest its allocation of BSAI species if it wanted to derive any benefit from that allotment of fish.

Since that vessel has spent relatively small portions of its recent fishing seasons in the BSAI its allotment of BSAI species is expected to be relatively small. Even though its allocation is small, it will probably still harvest those fish as a result of cooperatives providing the flexibility to fish when they want in the BSAI. For example, when fishing closes in the GOA due to TACs being reached or halibut allotments being taken, the vessel may move to the BSAI to harvest its allotment of yellowfin, rock sole, flathead sole, AI POP, and Atka mackerel, if it is part of a cooperative. If the vessel does not join a cooperative they will need to compete in the BSAI sector limited access fishery. Given the potential for a very small allotment of fish to be available for the non-AFA trawl CP vessels that do not join a cooperative, they may not be able to participate in the BSAI fisheries if they conflict with GOA fisheries that are more important to their business.

#### **3.2.10.4.3 Suboption 12.4.3**

Option 12.4.3 would establish GOA halibut PSC sideboards for the non-AFA trawl CP sector. Three approaches are being considered to estimate sideboard amounts. Option A is the most difficult to estimate. That alternative is based on a bycatch rate approach for each target fishery and regulatory area. Halibut bycatch rates were estimated by dividing the amount of halibut mortality by the amount of target

species that were harvested. Those calculations were done for the target species in the deep water complex and the shallow water complex. Those rates are presented in Table 3-83 and Table 3-84. Table 3-83 shows the rates for the deep water complex fisheries.

**Table 3-83 Halibut bycatch rates in GOA deep water complex fisheries**

<b>1995 – 2003</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0113	0.0221	0.0221
620	0.0287	0.0148	0.0246	0.0303
630	0.0436	0.0161	0.0276	0.0326
640	0.0226	0.0177	0.0569	0.0230
<b>1997-2002</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0127	0.0241	0.0230
620	0.0836	0.0102	0.0204	0.0364
630	0.0448	0.0167	0.0285	0.0338
<b>1998-2002</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0084	0.0241	0.0211
620	0.0208	0.0093	0.0217	0.0357
630	0.0738	0.0169	0.0286	0.0330
<b>1998-2004</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0090	0.0222	0.0206
620	0.0208	0.0075	0.0232	0.0307
630	0.0738	0.0169	0.0274	0.0339
<b>1999-2003</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0095	0.0219	0.0199
620	0.0208	0.0075	0.0229	0.0303
630	0.1191	0.0175	0.0266	0.0344
<b>2000-2004</b>				
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole
610		0.0110	0.0218	0.0202
620	0.0208	0.0066	0.0228	0.0306
630	0.1191	0.0162	0.0250	0.0336

Source: NMFS PSC Bycatch data and NMFS Weekly Production Report data.

**Table 3-84 Halibut bycatch rates in GOA shallow water complex fisheries**

<b>1995 – 2003</b>					
Atka Mackerel	Shallow Water Flatfish	Flathead sole	Other Species	Pollock	Pacific Cod
0.0059	0.0398	0.0228	0.0101	0.0747	0.0216
0.0027	0.0482	0.0312		0.0039	0.0254
	0.0367	0.0358	0.0088		0.0476
		0.0368			
<b>1997-2002</b>					
Pacific Cod	Shallow Water Flatfish	Flathead sole			
0.0256	0.0401	0.0208			
0.0277	0.0779	0.0446			
0.0479	0.0348	0.0390			

<b>1998-2002</b>			
Pacific Cod	Shallow Water Flatfish	Flathead sole	
0.0263	0.0408	0.0228	
0.0322	0.1265	0.0310	
0.0479	0.0344	0.0339	
<b>1998-2004</b>			
Pacific Cod	Shallow Water Flatfish	Flathead sole	Other Species
0.0270	0.0459	0.0243	0.0101
0.0302	0.0843	0.0263	
0.0475	0.0344	0.0333	0.0088
<b>1999-2003</b>			
Pacific Cod	Shallow Water Flatfish	Flathead sole	Other Species
0.0276	0.0527	0.0279	0.0101
0.0333	0.0275	0.0235	
0.0456	0.0340	0.0315	0.0088
<b>2000-2004</b>			
Pacific Cod	Shallow Water Flatfish	Flathead sole	Other Species
0.0240	0.0527	0.0279	0.0101
0.0365	0.0275	0.0235	
0.0337	0.0350	0.0315	0.0088

Source: NMFS PSC Bycatch data and NMFS Weekly Production Report data

The difficult part of the calculation is determining the amount of each target species that should be multiplied by the halibut usage rate. None of the GOA target species are directly allocated to the non-AFA Trawl CP sector, so the groundfish sideboard amount is the most reasonable basis for making the calculation. The groundfish sideboard amount is calculated by multiplying the percentage of the TAC defined as the sideboard (for 620 and 620 the historic catch rates were used to divide the TAC by area) multiplied by the TAC set for the allocation year. The resulting metric tons are then multiplied by the appropriate rate shown in Table 3-83 and Table 3-84. That calculation yields the halibut sideboard cap for each area for that year. Fluctuations in future TACs will change the sideboard cap unless the sideboards are fixed at the time of initial allocation.

The results of these calculations are shown in Table 3-85 and Table 3-86 for the shallow water and deep water complexes, respectively. Halibut sideboard cap amounts that result from those calculations are larger than those calculated using the halibut usage approach and are larger than the amount of halibut the sector historically used. During the 9-year period from 1995 through 2003 the Non-AFA Trawl CP sector used an average of just over 710 mt halibut mortality per year. The sideboard caps under this alternative would range from under 1,100 mt of halibut mortality to about 1,180 mt. These amounts are well above the historic usage of halibut reported in the NMFS bycatch reports. Therefore the sideboard cap amounts from this option overestimate the amount of halibut that was historically used. Therefore, the basing the sideboard caps on this method would likely make more halibut available to the sector than they would need to harvest their historic catch levels in the GOA.

**Table 3-85 Deep water complex halibut sideboard caps, based on historic use rates.**

<b>1995-2003</b>					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	44	130	34	208
620	1	13	78	103	195
630	16	111	182	84	393
Total	17	169	390	221	796
<b>1997-2002</b>					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	50	147	36	233
620	1	8	66	137	212
630	8	107	190	96	401
Total	9	166	402	269	846

1998-2002					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	33	147	35	215
620	0	8	78	138	223
630	10	106	211	96	423
Total	10	146	436	268	861
1998-2004					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	35	133	34	202
620	0	6	75	118	200
630	11	109	185	99	402
Total	11	150	393	250	804
1999-2003					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	36	129	33	198
620	0	6	87	119	213
630	16	117	209	103	444
Total	16	160	425	255	855
2000-2004					
Area	Deep water Flatfish	Rockfish	Arrowtooth	Rex Sole	Total
610	-	44	128	33	205
620	0	6	76	119	201
630	15	107	171	99	393
Total	15	157	375	250	798

Source: NPFMC Amendment 80 database and NMFS PSC bycatch reports

**Table 3-86 Shallow water complex halibut sideboard caps, based on historic use rates.**

1995-2003						
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Other Species	Pollock	Total
610	8	131	32	4	0	175
620	8	6	9	-	1	23
630	40	10	34	-	-	84
Total	55	147	76	4	1	282
1997-2002						
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Total		
610	9	119	28	156		
620	10	6	12	28		
630	47	6	33	86		
Total	66	132	72	270		
1998-2002						
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Total		
610	11	124	32	168		
620	13	9	8	30		
630	55	5	29	89		
Total	79	138	69	287		
1998-2004						
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Other Species	Total	
610	11	143	37	0	192	
620	12	8	7	-	27	
630	52	7	28	7	94	
Total	75	159	72	7	313	

1999-2003					
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Other Species	Total
610	13	168	40	0	221
620	12	2	7	-	20
630	45	4	28	7	84
Total	69	174	75	8	325
2000-2004					
Area	Pacific Cod	Shallow water Flatfish	Flathead sole	Other Species	Total
610	11	177	43	1	231
620	13	3	6	-	22
630	35	7	26	8	76
Total	59	186	75	9	329

Source: NPFMC Amendment 80 database and NMFS PSC bycatch reports

Option B bases the halibut PSC sideboard caps on the actual amount of halibut that was historically used by the Non-AFA Trawl CP sector. Table 3-87 and Table 3-88 show the percentage of the halibut allotment that was used by the sector and the metric tons of use, respectively. If the halibut cap continues to be set at 2,000 metric tons in the future, using either the percentage or the metric ton amount will not differ. If the GOA halibut PSC allotment changes then implementing the percentage or tonnage amount will have different impacts.

The amount of halibut that would be available to the non-AFA trawl CP sector in this option reflects the amount of halibut they used to harvest GOA groundfish. It is not possible to determine if that amount of halibut is too large or too small for future needs. If the sector improves their halibut bycatch, then this cap level may exceed their needs. However, if the mix of fisheries change or halibut bycatch increases, then this cap amount may restrict their harvest below historic levels.

Cooperative formation is expected to help the fleet improve their PSC bycatch usage in the fisheries that are rationalized in the BSAI. The GOA fisheries will continue to be harvested under the LLP management structure, at least in the near future. That management structure is expected to provide fewer opportunities for these vessels to improve their bycatch rates in the GOA. Since the fleet used these levels of halibut in the past it is likely a reasonable measure of future usage, before changes occur in the fishery.

It should be noted that variation in the amount of halibut PSC taken in a year by this fleet is fairly large. The standard deviation of halibut usage by the fleet between 1995 and 2003 was 99 metric tons. Year-to-year variation in the amount of halibut used by various sectors of the fleet could limit this sector's ability to harvest historic amounts of groundfish if the cap is set too low. On the other hand, setting the cap too high could give this sector the opportunity to increase their groundfish harvests at the expense of other sectors.

**Table 3-87 Percentage of GOA Trawl Halibut Mortality Allotment (2,000 mt)**

PSC Group	Quarter	1995-2003	1997-2002	1998-2002	1998-2004	1999-2003	2000-2004
GOA Deep water trawl fishery	1	2.87%	2.72%	2.55%	2.84%	2.73%	2.92%
	2	9.46%	10.18%	11.40%	11.92%	13.15%	14.05%
	3	10.93%	11.82%	12.16%	11.60%	11.35%	11.43%
	4	4.91%	3.20%	3.04%	4.09%	4.34%	4.42%
Deep Total		28.18%	27.91%	29.16%	30.45%	31.57%	32.81%
GOA Shallow water trawl fishery	1	1.03%	0.96%	0.94%	0.85%	0.84%	0.55%
	2	2.09%	2.05%	2.18%	1.92%	1.57%	1.97%
	3	1.84%	2.12%	2.18%	2.06%	0.72%	0.89%
	4	2.41%	2.96%	2.90%	2.74%	2.96%	1.94%
Shallow total		7.37%	8.09%	8.20%	7.57%	6.08%	5.35%
Grand Total		35.55%	36.00%	37.36%	38.02%	37.65%	38.16%

**Table 3-88 Tons of Halibut Mortality (based on 2,000 mt allotment)**

PSC Group	Quarter	1995-2003	1997-2002	1998-2002	1998-2004	1999-2003	2000-2004
GOA Deep water trawl fishery	1	57.47	54.34	50.94	56.82	54.58	58.31
	2	189.28	203.56	228.05	238.49	263.03	280.98
	3	218.64	236.36	243.29	231.91	226.92	228.52
	4	98.17	63.95	60.84	81.87	86.82	88.36
Deep Total		563.56	558.20	583.12	609.09	631.35	656.18
GOA Shallow water trawl fishery	1	20.59	19.13	18.75	16.93	16.74	11.06
	2	41.87	41.10	43.68	38.47	31.46	39.32
	3	36.77	42.34	43.59	41.19	14.35	17.85
	4	48.13	59.13	58.03	54.79	59.13	38.74
Shallow total		147.35	161.70	164.05	151.38	121.68	106.97
Grand Total		710.91	719.91	747.18	760.47	753.04	763.15

Option C would allow the Council to select an amount for the GOA sideboards. Public input and Council knowledge of these fisheries will be important in determining the appropriate sideboard levels. It is not possible to determine whether one sideboard amount is superior to another based solely on the information available from the data. Council objectives relative to bycatch reductions and distribution of harvest among various members of the fleet play an important role in determining the sideboard amounts. As long as each sector of the fleet is given an opportunity to harvest at levels considered reasonable by the policy makers, other members of the fleet, and the general public several alternatives considered in this section could be argued to be desirable. This option would give the Council the opportunity to select sideboard amounts that meet their objectives, if the results shown in Options A and B are not appropriate for every species.

#### 3.2.10.4.4 Suboption 12.4.4

This option would establish GOA for groundfish target species. This information was already provided under Option 12.1 (retained catch of the non-AFA trawl CP sector divided by the retained catch of all vessels) for the GOA species. Therefore, the reader is referred to that section for a discussion of the sideboard amounts and their impacts.

#### 3.2.10.4.5 Suboption 12.4.5

Option 12.4.5 defines the interaction between the Central Gulf of Alaska Rockfish Demonstration Program (RDP) and Amendment 80. While the RDP is in place, it will take precedence over Amendment 80. Amendment 80 sideboard caps will not be established for rockfish species allocated under the RDP<sup>41</sup>. The RDP will define the percentage of the directed rockfish TACs that will be allocated to members of the Non-AFA Trawl CP sector. That allocation will replace sideboard limits for those species and control harvests in Central GOA rockfish fisheries by the Non-AFA Trawl CP sector. Table 3-89 provides sideboard limits under the RDP.

If the RDP is eliminated before a GOA rationalization program is implemented, sideboard limits could be established using the same allocation formula developed for other GOA species. For example, the allocation formula defined under Option 12.4.4. The Council will need to address this issue if they wish to account for the possibility of the RDP expiring before the Central GOA is rationalized.

Halibut PSC sideboard limits will be treated similarly to rockfish. The third seasonal halibut PSC allowance will be reduced by an amount equal to the halibut allocation to the Non-AFA Trawl CP sector under the RDP. While the reduction will be taken from the third seasonal allotment, the RDP allocation may be used when fishing is allowed under the RDP. The proposed start date for fishing under the RDP is

<sup>41</sup> The RDP is assumed to allocate 30.03 percent of the Central GOA shorttraker TAC and 58.87 percent of the Central GOA rougheye TAC to catcher/processors.

May 1<sup>st</sup>. So, the deduction will come from the Non-AFA Trawl CP sector's third seasonal allotment (July), and it may be fished starting May 1<sup>st</sup> under the RDP.

Allowing the RDP to take precedence over Amendment 80, removes conflicts that could arise under the two programs. It also enables the Non-AFA Trawl CP sector to take full advantage of the benefits of the RDP. If the Non-AFA Trawl CP fleet was required to operate under the Amendment 80 sideboard limits, without a direct allocation from the RDP, the benefits from the RDP would be reduced and the program would not generate the economic and biological benefits that were anticipated.

**Table 3-89 Sideboard limits for the Central Gulf of Alaska Rockfish Demonstration Program**

July Sideboard Limit	CV Sector	C/P Cooperatives	C/P Limited Access	C/P "Opt-out"
<b>Catch limits:</b> Western GOA POP, Pelagic Shelf, and Northern Rockfish	CV Sector limit – a collective CV limit for each species in each region	Cooperative specific limit for each species in each region	C/P sector limit – a collective limit for all non-cooperative C/Ps for each species in each region.	
West Yakutat POP, Pelagic Shelf, and Northern Rockfish				
BSAI Pacific cod	CV Sector limit	N/A	N/A	N/A
<b>Halibut mortality limits:</b> Western GOA (1) Shallow-water limit, & (2) Deep-water limit	CV Sector limit.  (1) shallow-water flatfish closed in that region when limit reached; (2) deep-water flatfish closes in that region when limit reached.	C/P Cooperative specific limit.  (1) shallow-water flatfish closed in that region when limit reached; (2) deep-water flatfish closes in that region when limit	C/P Non-cooperative Sector limit  (1) shallow-water flatfish closed in that region when limit reached; (2) deep-water flatfish closes in that region when limit reached.	
Central GOA (1) Shallow-water limit, & (2) Deep-water limit				
West Yakutat District (1) Shallow-water limit, & (2) Deep-water limit				
<b>Prohibited fishing:</b> .BSAI groundfish (except pollock and IFQ sablefish)	July 1 - 31 prohibited fishing for most flatfish and rockfish	July 1- July 14	From July 1- until C/Ps harvest 90% of the CGOA POP.	N/A
GOA groundfish (except pollock and IFQ sablefish)	N/A	N/A ** (Assuming monitoring requirements met)	(Only for C/Ps with more than 5% of the total C/P POP history)	July 1 - July 14 – unless past activity

#### 3.2.10.4.6 Suboption 12.4.6

Defining whom sideboard limitations are applied to is outlined in this section. This alternative clearly states that any sideboard limitations developed under Component 12 for GOA would be applied to both the vessel and any LLPs that were used to generate sideboard harvest privileges. Limiting both the vessel and the LLPs to the sector sideboard amounts removes the possibility that one or both could be sold and fish outside the caps. Note, the language in this suboption is specific to the GOA. If the Council establishes sideboards in the BSAI, it is assumed that sideboards would be attached to the eligible vessels

and LLPs used to generate harvest shares that resulted in allocating a percentage of the Amendment 80 species.

Under the current structure of the program, the sector allocations are attached to the vessel, for active vessels, and the license for vessels that have sunk or are unable to participate. When the harvest privileges are assigned to the vessels, it could be possible to apply the license to another boat and then use the license to fish outside the sideboard limits. This option prevents that from happening. It also prevents the vessels and licenses of lost eligible vessels from fishing outside the sideboard caps.

The intent of this option is to provide additional protection for the sectors that benefit from sideboard limitations. It has been the intent of the Council to restrict persons that benefit from the Non-AFA Trawl CP sector allocation of the five BSAI groundfish species to their historic catch amounts. This option clearly states that intent, by limiting the amount of those other species that may be harvested using a Non-AFA Trawl CP vessel or LLPs that were used to generate Amendment 80 catch history. Persons in other sectors will benefit from this action because their historic percentage of the TAC will be protected. NOAA Fisheries will manage the groundfish sideboard caps using directed fishery closures to help ensure that caps are not exceeded. Halibut mortality caps will be managed as hard caps under this program.

#### **3.2.10.4.7 Suboption 12.4.7**

The intent of this suboption is that upon completion of a comprehensive rationalization program for the GOA, any GOA sideboards will be superseded by the allocations in the rationalization program. The purpose of this option is to clarify that the sideboard allocations in this program are considered binding only until direct allocations of these species are implemented or a sufficiently constraining LLP is developed. If rationalization, in part or all of the GOA, is implemented under a license-based system, then the industry and Council will need to determine whether that program is sufficiently constraining to the Non-AFA Trawl CP sector. If the program is sufficiently constraining, then sideboard limits could be lifted; if they are not, then the Council would retain the rights to keep the sideboard limits in place. Because it is not possible to project the type of rationalization program that will ultimately be implemented in the GOA, it is too early to judge whether that program would supersede the Amendment 80 sideboards.

#### **3.2.10.4.8 Suboption 12.4.8**

Selecting this option would direct NOAA Fisheries to divide the GOA PSC and groundfish sideboards between Non-AFA Trawl CP vessels in cooperatives and those that do not join a cooperative. The allocation to cooperative members would not be further subdivided among cooperatives. Dividing the sideboard caps between these two groups would provide cooperative members a better opportunity to manage their caps. Sector participants electing not to join a cooperative would have less opportunity to harvest the cooperative member's portion of the cap, because NOAA Fisheries would prohibit those vessels from directed fishing for those species. Vessels outside of the Non-AFA Trawl CP sector would still have the opportunity to harvest amounts of sideboard species that would reduce the amount cooperative members could harvest below the cap levels. This is always possible, because sideboard caps are not allocations they are limits on the amount of a species that a class of vessels may harvest.

The current language states that the division of Non-AFA Trawl CP sideboard caps apply to LLP holders. The analyst believes that this is a result of language being developed when the Amendment 80 program was contemplated as being license based. Since the program is currently envisioned as a vessel based program it may be appropriate to change the language to reflect that the allocation will be to vessel/license that is initially assigned harvest privileges for the five BSAI species allocated under Amendment 80.

### 3.2.10.4.9 Suboption 12.4.9

The final option in this section addresses the issue of Non-AFA Trawl CP cooperatives staying within their sideboard caps. The option states that each cooperative must include a provision in their cooperative contract stating that they will not exceed their sideboard cap. They will also include in their contract “third party enforceability provisions”.

Based on preliminary discussions with NOAA Fisheries staff, they intend to set sideboard limits for two groups, Non-AFA Trawl CP vessels that join cooperatives and those that do not. NOAA Fisheries will then monitor the caps at that level. If more than one cooperative is created within the sector, NOAA Fisheries does not anticipate monitoring caps at the cooperative level.

The division of sideboards between the vessels that are members of cooperatives and those that are not will be based on the catch history of vessels in each group. Allocating the sideboards between cooperative and non-cooperative vessels will be based on the same formula developed in Components 9 and 10. Therefore, if cooperatives wish to divide the caps among cooperative members internally they could. Enforcing that division would fall to the cooperative members using a binding inter-cooperative agreement. NOAA Fisheries would not enforce that division of sideboards. Such a contract would need to include clauses that define the sideboard amount each cooperative is entitled to catch and how the contract would be enforced.

Inter-cooperative agreements were developed under the AFA. Those contracts included sections on allocation enforcement. Basically their contract defines the amount of each species a person/cooperative may harvest. If a person (cooperative) exceeds their catch limit the Board of Directors or cooperative members may take legal action against the offending party to recover compensation based on a formula that is set annually. The compensation is then distributed proportionally among members that were harmed.

The Council will need to determine if they wish to impose a division of sideboard caps on cooperative members by requiring any cooperative that forms to include language in an inter-cooperative agreement that outlines penalties and sanctions. Part of that contract would also define the neutral party that would enforce the contract. The cooperatives, cooperative members, or another body appointed by them would enforce penalties for non-compliance with the contract. NOAA Fisheries would not be expected to take action against a single cooperative for exceeding their cap, defined by the inter-cooperative agreement, if multiple cooperatives are established.

If the Council requires cooperative members to stay within their cooperative’s sideboard limits by requiring the development of contracts to enforce those limits, they will also need to define the penalties for non-compliance. For example, if cooperatives cannot implement a NMFS approved, binding inter-cooperative agreement for harvesting their sideboard limits, they will not be allowed to form cooperatives. The prohibition on cooperative formation would force the members of cooperatives that cannot agree to the contract to participate in the open access fishery or join another cooperative<sup>42</sup>. Determining which entities should be forced into Non-AFA Trawl CP sector general access fishery and those that would be allowed to form cooperatives could be problematic. If two cooperatives are trying to negotiate the inter-cooperative agreement and fail, neither would be allowed to form a cooperative. If three cooperatives attempt to form and two reach an inter-cooperative agreement, the members of the third would either need to join one of the other cooperatives or fish outside of the cooperative structure.

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<sup>42</sup> Persons could only join another cooperative if they joined prior to the cooperative submitting their annual application packet to NMFS. If a person did not join a cooperative by the NMFS deadline, they (and their catch history) would be assigned to the pool of vessels that elected not to join a cooperative. Those vessels would then race to harvest the allotment available to them.

### 3.2.11 Component 13 – Harvest Threshold Development for the Yellowfin Sole Fishery

Component 13 allows for a different allocation of yellowfin sole to the Non-AFA Trawl CP sector and general limited access fishery<sup>43</sup> when the ITAC for yellowfin sole exceeds a specific threshold. Specifically, when the allocation for yellowfin sole exceeds the Council selected threshold, the portion of yellowfin sole above the threshold would be allocated using different percentages for the Non-AFA Trawl CP sector and the general limited access fishery than those determined in Components 3 and 4. The portion of yellowfin below the threshold would continue to be allocated to the Non-AFA Trawl CP sector and the general limited access fishery based on the formula determined in Components 3 and 4. Thresholds under consideration by the Council to trigger the alternative allocation percentages are 80,000 mt, 100,000 mt, 125,000 mt, 150,000 mt, and 175,000 mt. The component also includes suboptions for rolling over any yellowfin sole that is projected to go unharvested from the general limited access fishery to the Non-AFA Trawl CP sector or from the Non-AFA Trawl CP sector to the general limited access fishery. The purpose of the rollover suboption is to help ensure that the yellowfin sole allocations are more fully utilized.

The allocation options under consideration for the portion of yellowfin sole above the threshold are 30/70, 50/50, and 70/30 splits between the Non-AFA Trawl CP sector and the general limited access fishery. Any portion of the yellowfin sole ITAC above the threshold would be distributed between the Non-AFA Trawl CP sector and the general limited access fishery using one of those ratios. For example, with a threshold of 125,000 mt and an ITAC of 135,000 mt, the Non-AFA Trawl CP sector would be allocated between 52 and 93 percent of the yellowfin sole ITAC below the threshold (125,000 mt), and depending on the distribution selected by the Council the Non-AFA Trawl CP would be allocated either 30, 50, or 70 percent of the remaining 10,000 mt of yellowfin sole above the threshold. The general limited access fishery would be allocated the remaining yellowfin sole.

The intent of threshold action is to better accommodate major shifts in the yellowfin sole trawl fisheries during a period of high TAC as well as providing harvesting opportunities for some trawl sectors, while also maintaining some consistency in the historical catch in other trawl sectors. For example, if future pollock TACs were to decline dramatically and the yellowfin sole TAC was increased above the predetermined threshold level, the distribution of yellowfin sole above that threshold level could be modified from the percentages calculated using Components 3 and 4. The change is proposed to better accommodate the general limited access fishery participants.

The remaining portion of this section provides a discussion of the impacts of the different threshold amounts and the different allocation percentages for the Non-AFA Trawl CP sector and the general limited access fishery participants. The options considered by the Council are shown in the text below.

During scoping of this option, various criteria were suggested for developing the allocation options when the yellowfin sole ITAC is above the threshold. Some of the suggestions included selecting allocation amounts that best develop the yellowfin sole fishery, while continuing to reduce PSC and discards of other species. In addition, the allocation percentages selected should allow traditional participants to maintain their historic catch, while at the same time recognize the potential efficiency improvements of the sector from cooperatives, which may allow for expanded harvesting and processing capacity. Other factors that were noted when selecting the allocation percentages are the ability of the sectors to harvest the threshold allocation. Combined, all of these criteria were suggested by the Council as means to help guide the body during final action when determining the appropriate allocation percentage of yellowfin sole above the threshold.

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<sup>43</sup> The general limited access fishery is defined as all trawl vessels that operate in the BSAI that are not included in the Non-AFA Trawl CP sector. AFA vessels are also included in this group even though their harvest is limited by sideboard limits imposed on their non-pollock harvests.

**Component 13** The Council will allocate yellowfin sole above the threshold to participating sectors when the ITAC is anticipated to reach the threshold level. ITAC below the threshold level would be allocated to the Non-AFA Trawl Catch Processor sector based on the formula determined in Components 3 and 4. Threshold levels for other species may be developed at a later date. AFA sideboards do not apply to the YFS threshold fishery. The Council will allocate yellowfin sole above the threshold to participating sectors when the ITAC is anticipated to reach the threshold level.

Option 13.1 Threshold Rollover options:

Suboption 13.1.1 No rollover provision

Suboption 13.1.2 Any unharvested portion of the threshold reserve allocated to the limited access fishery that is projected to remain unused by a specific date (August 1 or Sept 1) shall be reallocated to the Non-AFA Trawl CP sector. Any unharvested portion of the threshold reserve allocated to the Non-AFA Trawl CP sector that is projected to remain unused by a specific date (August 1 or September 1) shall be reallocated to the limited access fishery.

**\*Suboption 13.1.3 Allow rollovers of any portion of the yellowfin sole TAC that is projected by the NOAA Regional Administrator to go unused. The NOAA Regional Administrator would be responsible for determining both the amount and the timing of the rollover.**

Option 13.2 Yellowfin sole threshold options:

Suboption 13.2.1 80,000 mt

Suboption 13.2.2 100,000 mt

**\*Suboption 13.2.3 125,000 mt**

**\*Suboption 60% Non-AFA Trawl CP sector and 40% limited access fishery**

Suboption 13.2.4 150,000 mt

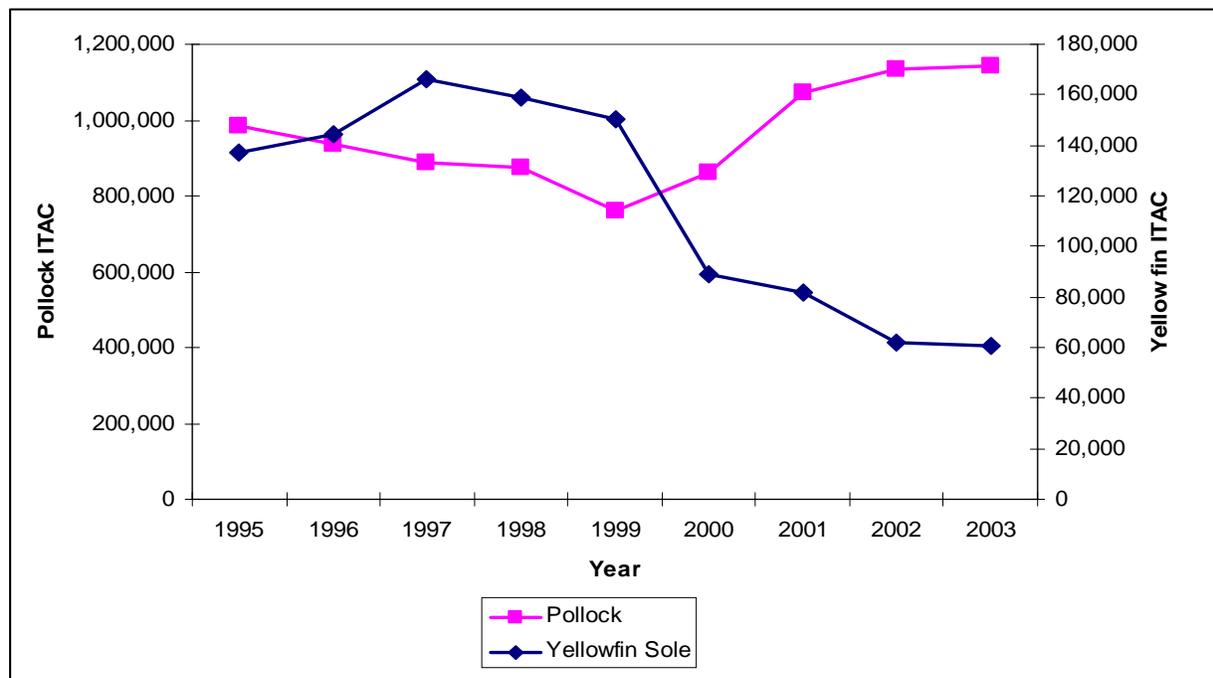
Suboption 13.2.5 175,000 mt

Option 13.3 Allocate the threshold reserve to the Non-AFA Trawl CP sector and the BSAI limited access fishery using one of following suboptions:

Suboption 13.3.1 30% Non-AFA Trawl CP sector and 70% limited access fishery

Although these suggested criteria are useful when trying to balance the needs of the traditional participants with those of future participants, it is difficult to determine the baseline needs of the traditional participants and future participants, that may want to enter the fishery of expand their effort, with any certainty. One of the primary reasons for this difficulty is the interrelationship of the pollock fishery and the 2 million mt cap and its influence on the yellowfin sole fishery. As seen in

Figure 3-7, between 1995 and 1999, when the pollock ITAC declined, the ITAC for yellowfin sole increased every year except 1999. When the pollock ITAC increased between 1999 and 2003, the yellowfin sole ITAC declined. Although there could be a number of other reasons for the potential inverse relationship between pollock ITAC and yellowfin ITAC including biomass and market conditions, the interrelationship between the 2 million mt cap and the pollock fisheries is likely the primary influence on the yellowfin sole fishery. Since the increases in pollock ITAC leave less room under the 2 million mt cap, other BSAI ITACs must decrease to ensure that the total BSAI removals remains under the 2 million mt limit. This results in species like yellowfin sole having their ITAC set at levels below those that could be supported by biomass levels that year.

**Figure 3-7 Annual pollock and yellow fin sole ITAC from 1995 to 2003**

Source: Amendment 80 database

Given the difficulty in determining the baseline information, each allocation group could make an argument that the threshold program is not providing for their needs. Their argument would depend on the allocation calculation method selected from Components 3 and 4, combined with a specific threshold and a distribution of yellowfin sole ITAC above the threshold.

As noted in the analysis for Components 3 and 4, currently, NOAA Fisheries annually places 15 percent of the BSAI TAC for each target species (except pollock and the hook-and-line and pot gear allocations for sablefish) in a reserve, releasing the remaining 85 percent of the TAC, often called ITAC, for directed fishing. The reserve is not designated by species or species group and any amount of the reserve may be apportioned to a target species (except the hook-and-line gear and pot gear allocation for sablefish or the “other species” category) as long it does not result in overfishing. One half of the unspecified reserve is apportioned to the CDQ groups, which for the allocated species is 7.5 percent. In recent years, NOAA Fisheries has released some of the unspecified reserve at the beginning of the year to supplement specific fisheries in the BSAI because U.S. fishing vessels have demonstrated the capacity to catch the full TAC allocations. Some of these fisheries include Atka mackerel, Pacific Ocean perch, and Pacific cod. The remaining unspecified reserve is released for flatfish species later in the fishing year.

Given that the proposed action will allocate a percentage of yellowfin sole to the Non-AFA Trawl CP sector, NOAA Fisheries may choose to eliminate the portion of reserve not allocated to the CDQ program. The primary advantage of the non-CDQ portion of the unspecified reserve is that it provides NOAA Fisheries the flexibility to apportioned reserve where it’s most needed. However, with the Non-AFA Trawl CP sector receiving a specific percentage of the five allocated species and the potential for multiple cooperative, any flexibility enjoyed by NOAA Fisheries will diminish because of the potential complexities created when apportioning the non-CDQ reserve between the cooperatives, sector limited access fishery, and the trawl limited access fishery. In addition, cooperatives are likely better suited to decide how to harvest their portion of the reserve that would be apportioned to them in the proposed action compared to the decisions of NOAA Fisheries.

The final potential deduction from TAC under this proposed action would be an ICA. NOAA Fisheries would deduct an amount necessary to accommodate an ICA for the fixed-gear sectors and the trawl limited access fishery if their allocations cannot account for projected incidental catch of these species from TAC.

Table 3-90 and Table 3-91 provide and estimated allocation of yellowfin sole to the Non-AFA Trawl CP sector and the general limited access fishery at each of the threshold amounts. For the following discussion, any CDQ and ICA deductions are assumed removed prior to apportioning the ITAC between the Non-AFA Trawl CP sector and the trawl limited access sectors. The allocations to these groups at or below the threshold are determined by applying the allocation calculation from Component 3 with the set of catch history years from Component 4 multiplied by the yellowfin sole ITAC. The ITAC level determines if there is a threshold fishery. Any amount of ITAC over the threshold would be distributed to the Non-AFA Trawl CP sector and the trawl limited access sectors using the allocation percentages from Suboption 1, 2, 3, or 4 of this component.

Using data from these tables, some general observations concerning the overall allocations to each group given a specific threshold and distribution of the portion of yellowfin sole above the threshold can be provided. The average annual retained catch of the Non-AFA Trawl CP sector from 1995 to 2003 was 67,536 mt or 81 percent of the total retained harvest (Table 3-32), while the average annual retained catch of all eligible participants in the general limited access fishery was 16,038 mt. The average annual retained catch for both groups is within the range of allocation options under consideration for thresholds of 80,000 mt, 100,000 mt, and 125,000 mt. However, at a threshold of 80,000 mt, allocation percentages using Option 3.3 would result in allocations to the Non-AFA Trawl CP sector less than their annual average total catch from 1995-2003. Similarly, if the Council selected retained catch of the sector/retained catch of all sectors and any catch history years after 1997, the remaining portion of yellowfin sole available for the general limited access fishery would be less than their annual total catch of yellowfin sole from 1995-2003. At thresholds 150,000 or 175,000, the allocation of yellowfin sole to the Non-AFA Trawl CP sector would be greater than the annual average total catch. Using retain catch as a measure for the threshold allocation does not take into account the necessary incidental catch associated with the multi-species groundfish.

**Table 3-90 Allocation percentages and amounts of yellowfin sole to the Non-AFA Trawl Catch Process sector at each threshold option (assumes CDQ and ICA has already been removed)**

Years	(Total/Total)		(Retain/Retain)		(Retain/Total)	
	Allocation Percent	Allocation at threshold (mt)	Allocation Percent	Allocation at threshold (mt)	Allocation Percent	Allocation at threshold (mt)
<b>80,000 mt threshold</b>						
<b>1995-2003</b>	76.2%	60,960	78.1%	62,480	58.6%	46,880
<b>1997-2002</b>	80.8%	64,640	82.6%	66,080	63.1%	50,480
<b>1998-2002</b>	85.9%	68,720	88.5%	70,785	66.2%	52,960
<b>1998-2004</b>	88.1%	70,480	90.4%	72,320	69.6%	55,680
<b>1999-2003</b>	89.7%	71,760	91.3%	73,003	71.2%	56,960
<b>2000-2004</b>	91.7%	73,360	93.2%	74,560	74.2%	59,360

	<b>(Total/Total)</b>		<b>(Retain/Retain)</b>		<b>(Retain/Total)</b>	
<b>Years</b>	<b>Allocation Percent</b>	<b>Allocation at threshold (mt)</b>	<b>Allocation Percent</b>	<b>Allocation at threshold (mt)</b>	<b>Allocation Percent</b>	<b>Allocation at threshold (mt)</b>
	<b>100,000 mt threshold</b>					
<b>1995-2003</b>	76.2%	76,200	78.1%	78,100	58.6%	58,600
<b>1997-2002</b>	80.8%	80,800	82.6%	82,600	63.1%	63,100
<b>1998-2002</b>	85.9%	85,900	88.5%	88,481	66.2%	66,200
<b>1998-2004</b>	88.1%	88,100	90.4%	90,400	69.6%	69,600
<b>1999-2003</b>	89.7%	89,700	91.3%	91,253	71.2%	71,200
<b>2000-2004</b>	91.7%	91,700	93.2%	93,200	74.2%	74,200
	<b>125,000 mt threshold</b>					
<b>1995-2003</b>	76.2%	95,250	78.1%	97,625	58.6%	73,250
<b>1997-2002</b>	80.8%	101,000	82.6%	103,250	63.1%	78,875
<b>1998-2002</b>	85.9%	107,375	88.5%	110,602	66.2%	82,750
<b>1998-2004</b>	88.1%	110,125	90.4%	113,000	69.6%	87,000
<b>1999-2003</b>	89.7%	112,125	91.3%	114,066	71.2%	89,000
<b>2000-2004</b>	91.7%	114,625	93.2%	116,500	74.2%	92,750
	<b>150,000 mt threshold</b>					
<b>1995-2003</b>	76.2%	114,300	78.1%	117,150	58.6%	87,900
<b>1997-2002</b>	80.8%	121,200	82.6%	123,900	63.1%	94,650
<b>1998-2002</b>	85.9%	128,850	88.5%	132,722	66.2%	99,300
<b>1998-2004</b>	88.1%	132,150	90.4%	135,600	69.6%	104,400
<b>1999-2003</b>	89.7%	134,550	91.3%	136,880	71.2%	106,800
<b>2000-2004</b>	91.7%	137,550	93.2%	139,800	74.2%	111,300
	<b>175,000 mt threshold</b>					
<b>1995-2003</b>	76.2%	133,350	78.1%	136,675	58.6%	102,550
<b>1997-2002</b>	80.8%	141,400	82.6%	144,550	63.1%	110,425
<b>1998-2002</b>	85.9%	150,325	88.5%	154,843	66.2%	115,850
<b>1998-2004</b>	88.1%	154,175	90.4%	158,200	69.6%	121,800
<b>1999-2003</b>	89.7%	156,975	91.3%	159,693	71.2%	124,600
<b>2000-2004</b>	91.7%	160,475	93.2%	163,100	74.2%	129,850

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports

**Table 3-91 Allocation percentages and amounts of yellowfin sole to the general limited access fishery at the each threshold option (assumes CDQ and ICA has already been removed)**

Years	Option 3.1 (Total/Total)		Option 3.2 (Retain/Retain)		Option 3.3 (Retain/Total)	
	Allocation Percent	Allocation (mt)	Allocation Percent	Allocation (mt)	Allocation Percent	Allocation (mt)
<b>80,000 mt threshold</b>						
1995-2003	25.4%	20,320	23.7%	18,960	43.4%	34,720
1997-2002	23.8%	19,040	21.9%	17,520	41.4%	33,120
1998-2002	19.2%	15,360	17.4%	13,920	36.9%	29,520
1998-2004	14.1%	11,280	11.5%	9,200	33.8%	27,040
1999-2003	11.9%	9,520	9.6%	7,680	30.4%	24,320
2000-2004	10.3%	8,240	8.8%	7,040	28.8%	23,040
<b>100,000 mt threshold</b>						
1995-2003	25.4%	25,400	23.7%	23,700	43.4%	43,400
1997-2002	23.8%	23,800	21.9%	21,900	41.4%	41,400
1998-2002	19.2%	19,200	17.4%	17,400	36.9%	36,900
1998-2004	14.1%	14,100	11.5%	11,500	33.8%	33,800
1999-2003	11.9%	11,900	9.6%	9,600	30.4%	30,400
2000-2004	10.3%	10,300	8.8%	8,800	28.8%	28,800
<b>125,000 mt threshold</b>						
1995-2003	25.4%	31,750	23.7%	29,625	43.4%	54,250
1997-2002	23.8%	29,750	21.9%	27,375	41.4%	51,750
1998-2002	19.2%	24,000	17.4%	21,750	36.9%	46,125
1998-2004	14.1%	17,625	11.5%	14,375	33.8%	42,250
1999-2003	11.9%	14,875	9.6%	12,000	30.4%	38,000
2000-2004	10.3%	12,875	8.8%	11,000	28.8%	36,000
<b>150,000 mt threshold</b>						
1995-2003	25.4%	38,100	23.7%	35,550	43.4%	65,100
1997-2002	23.8%	35,700	21.9%	32,850	41.4%	62,100
1998-2002	19.2%	28,800	17.4%	26,100	36.9%	55,350
1998-2004	14.1%	21,150	11.5%	17,250	33.8%	50,700
1999-2003	11.9%	17,850	9.6%	14,400	30.4%	45,600
2000-2004	10.3%	15,450	8.8%	13,200	28.8%	43,200
<b>175,000 mt threshold</b>						
1995-2003	25.4%	44,450	23.7%	41,475	43.4%	75,950
1997-2002	23.8%	41,650	21.9%	38,325	41.4%	72,450
1998-2002	19.2%	33,600	17.4%	30,450	36.9%	64,575
1998-2004	14.1%	24,675	11.5%	20,125	33.8%	59,150
1999-2003	11.9%	20,825	9.6%	16,800	30.4%	53,200
2000-2004	10.3%	18,025	8.8%	15,400	28.8%	50,400

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports

The primary variables in developing a threshold program are the threshold level and the percent of distribution between the two groups. However, affecting the threshold program is the allocation of the yellowfin sole to the Non-AFA Trawl CP sector and the general limited access fishery determined in Component 3. If for example the Council selects Option 3.1, selecting a distribution of 70 percent

(Suboption 3) for amounts over the threshold to the Non-AFA Trawl CP sector will result in little change in the distribution between the two groups. Under this scenario, the importance of threshold level is diminished since the allocation below and above the threshold is similar. Selecting 30 or 50 percent distribution of yellowfin sole to the Non-AFA Trawl CP sector above the threshold increases the level of importance the threshold program. The lower the threshold, the greater chance the ITAC will exceed the threshold resulting in the overall redistribution of yellowfin sole for the two groups that is different what was allocated under Component 3.

Allocation of yellowfin sole ITAC above the threshold could adjust some of the disparity between historical fishing patterns and allocations that could be created under Component 3 for traditional participants. The allocation of yellowfin sole ITAC above the threshold could also be used to provide some opportunity for future participants in periods of high TAC. For example, at a ITAC of 110,000 mt and a distribution of 50 percent of the yellowfin sole ITAC above a threshold of 80,000 under Option 3.1 would result in a total allocation of yellowfin sole between 75,960 mt and 88,360 mt to the Non-AFA Trawl CP sector and 24,640 mt and 34,040 mt to the general limited access fishery. At a 70 percent distribution for the Non-AFA Trawl CP sector, the allocation to the Non-AFA Trawl CP sector would be between 83,460 mt and 95,860 mt, while the allocation to the general limited access fishery would be between 14,140 mt and 26,540 mt.

If the Non-AFA Trawl CP sector's allocation is limited to their historic average and additional yellowfin sole is on the market, prices of yellowfin could drop sharply, resulting in the sector generating less revenue. It has been argued in the past the market for yellowfin sole is limited, and if the available supply of product reaches a given level, the price drops to a level that does not support harvesting more yellowfin sole. If this is true and more vessels enter the fishery, the members of the Non-AFA Trawl CP sector could actually be worse off even though they have their historic allocation. It could also negate some of the benefits of the cooperative as companies race to get their product to market first.

Many of the same issues in this component are similar to those raised in the analysis of the allocation calculations options in Components 3 and 4. Specifically, depending on the threshold selected and the distribution of yellowfin sole over the threshold, there is potential for some portion of the yellowfin sole allocation to go unharvested due to bycatch constraints. Bycatch of halibut by the Non-AFA Trawl CP sector is routinely cited as the primary reason for closure of the yellowfin sole fishery prior to harvesting the entire ITAC. Although development of a cooperative structure for the sector may slow the fishery enough to allow cooperative members to avoid high bycatch areas thus extend the fishery, the sector will likely continued to be challenged to avoid high halibut bycatch. Over the past several years, participants in the general limited access fishery have focused mostly on pollock (for those vessels that are AFA qualified) and Pacific cod. If their focus were to shift to yellowfin sole in the future, these participants would likely also face the same issue as the Non-AFA Trawl CP sector, to limit their bycatch of halibut.

The Council in June 2005 removed the AFA sideboard restrictions for threshold distributions. The intent of removing sideboard restrictions for threshold distribution is to allow AFA sectors the potential to expand their harvest of yellowfin sole in periods of diminished availability of pollock. Currently, the AFA Trawl CP sector has a yellowfin sole sideboard limit of 23 percent, while the AFA Trawl CV sector has a limit of 6.47 percent. Combined these two sector have a sideboard limit of 29.47 percent of the yellowfin sole TAC. Depending on the Council's selection of the different options in this component as well as the options selected in Components 3 and 4, there is the potential for the general limited access fishery to get an allocation of yellowfin sole over the 29.47 percent of TAC. Although the AFA sideboards would apply for allocations of yellowfin sole below the thresholds, the portion from the threshold program would not be restricted by AFA sideboards regulations, thus allowing the sectors in the general limited access to harvest their entire allocation.

To limit unutilized yellowfin sole the threshold component includes two rollover options. The purpose of the rollover options is to ensure the ITAC of yellowfin sole is fully utilized to the extent possible. In

addition, as noted above, because the allocation of yellowfin sole above the threshold will not necessarily be based on historical fishing patterns, the rollover option would allow some adjustment to the allocations to reflect historical fishing patterns.

Similar to the discussion on rollovers in Components 3 and 4, it is assumed that the Regional Administrator would be authorized to reallocate any projected unharvested allocation of yellowfin sole in the general limited access fishery to the Non-AFA Trawl CP sector. This option also would allow the Regional Administrator to rollover unharvested yellowfin sole by the Non-AFA Trawl CP sector to the general limited access fishery. The suboption does not include language on how to distribute the reallocated yellowfin sole between the different groups in Non-AFA Trawl CP. It is assumed that any reallocation of quota to the Non-AFA Trawl CP would be apportioned based on the division in Component 10.

Suboption 2 present's two suggestions for a specific time for determining the unharvested amount of yellowfin sole that would be reallocated, August 1 or September 1. The August 1 date would accommodate the Non-AFA Trawl CP sector and general limited access fishery as opposed to the later September 1 date because participants would have more time to harvest the reallocated amount. NOAA Fisheries has suggested September 1. NOAA Fisheries felt the August 1 date was too early in the fall fishery to give a correct indication of unused target species or PSC that could be rollover.

Suboption 3 would allow the NOAA Regional Administrator to determine the rollover amounts and dates. Like the Pacific cod fishery, Inseason Management Section of NOAA Fisheries Alaska Region would determine the appropriate rollover amounts and the appropriate date for reallocation of yellowfin sole based on industry input and the rate of the fishery.

Finally, as noted in the discussion on rollbacks in Component 3 and 4, rollbacks from cooperatives to the trawl limited access fishery presents numerous complications. Since a portion of the Amendment 80 species TAC will be secured via a permit authorizing cooperatives in the Non-AFA Trawl CP sector harvesting privileges, a NMFS administrative process with administrative protections must be invoked to reallocate that portion of TAC to another person or group. The administrative process NMFS would use is a "quota transfer" similar to those used in the BSAI crab fisheries. These in-season quota transfers from up to three potential cooperatives of five allocated species and five PSC species would be required to allow for administrative appeals by cooperative participants. These could potentially block any effort to complete a transfer thereby limiting the success of the rollback program. In addition, any rollback would require adequate time for closing a fishery through proposed and final rulemaking. NMFS must provide adequate notice for any closure, and given the date specified requirement necessary for this rollback program, the time available for rulemaking appears to be inadequate. Based on these complications, the rollback of yellowfin sole from the cooperatives to the trawl limited access fishery should not be included in the preferred alternative.

### **3.2.12 Other Elements of Amendment 80**

Amendment 80 was proposed to develop the allocation and framework for a cooperative system for members of the Non-AFA Trawl CP sector. Developing the cooperative program's structure requires the Council to define several components that together comprise the management system. To aid the Council in developing appropriate components for the cooperative program's structure, a committee was formed. Members of that committee included individuals from various sectors of the North Pacific fishing industry that could provide a broad viewpoint of the impacts of the various components. NOAA Fisheries, ADF&G, and the Council provided staff support for the committee. The committee met several times to develop a list of elements and options that were used by the Council as a starting point to develop the cooperative structure. Some components of the program contained several options. In other cases, the committee was able to agree on a preferred alternative, after determining that other options being considered were inferior. The components that have only one option are called the "single-option

components” in this document and are described in this section. A discussion of the Amendment 80 components with multiple options is provided in the previous sections of this document.

The single-option components are a critical part of the overall cooperative program. Those components describe how the cooperative will function with other sectors of the North Pacific fishing fleet, set parameters regarding how members of the cooperative interact with each other, and lay out some parameters for interaction with NOAA Fisheries and the Council. Each single-option component will be discussed in this section to provide an understanding of how the component would function and the impacts selecting that component will have on public and private sectors. Many of the single-option components were selected because other options would be contrary to other objective of the Council. For example, they would overturn the IR/IU program or would circumvent the LLP program. When possible, the committee’s rationale for selecting the option will be provided.

### 3.2.12.1 Pollock and Pacific Cod IR/IU Programs

**\*Amendment 80 will not replace the pollock and Pacific cod IR/IU programs.**

The pollock and Pacific cod IR/IU program was initially implemented on January 3, 1998 under Amendment 49 to the BSAI Groundfish FMP. Regulations defining the pollock and Pacific cod IR/IU program are contained in §679.27. Those regulations indicate that “the owner or operator of a vessel that is required to obtain a Federal fisheries or processor permit under § 679.4 must comply with the IR/IU program set out in this section while fishing for groundfish in the GOA or BSAI, fishing for groundfish in waters of the State of Alaska that are shoreward of the GOA or BSAI, or when processing groundfish harvested in the GOA or BSAI.”

As referenced earlier, for a complete description of the IR/IU requirements refer to §679.27 of the Alaska Federal fishery regulations. The general requirements of the pollock and Pacific cod IR/IU program are that a vessel must retain:

- (1) An amount equal to or exceeding 15 percent of the round-weight catch or round-weight delivery of that species during the fishing trip, when directed fishing for an IR/IU species is open.
- (2) An amount equal to or exceeding 15 percent of the round-weight catch or round-weight delivery of that species during the fishing trip or 15 percent of the maximum retainable amount for that species, whichever is lower, when directed fishing for an IR/IU species is prohibited.
- (3) Retention of an IR/IU species is prohibited that species may not be retained.

These requirements will not be altered as a result of implementing Amendment 80, and members of the Non-AFA Trawl CP sector will be required to abide by those regulations. The Council may recommend changes to IR/IU regulations in the future, if they determine such an action is appropriate. However, at the time Amendment 80 was being developed the Council determined that those regulations were functioning properly.

The impacts of the pollock and Pacific cod IR/IU program are discussed in Amendment 49 and are included here by reference. However, since this amendment does not alter the regulations that are currently in place, including this alternative will continue the status quo impacts of the regulations.

Selecting an alternative, other than the Council’s preferred alternative, would change the IR/IU program for pollock and Pacific cod. The intent of Amendment 80 is to allow members of the Non-AFA Trawl CP sector to operate in an environment that helps them meet IR/IU standards. It would be contrary to the spirit of this amendment to allow Non-AFA Trawl CPs to operate under a different IR/IU standard than the rest of the fleet. They will still be required to retain the amounts of pollock and Pacific cod defined above.

### 3.2.12.2 Groundfish Retention Standards

**\*The Groundfish Retention Standards (GRS) (Amendment 79) will be applied to the cooperative as an aggregate on an annual basis and on those vessels who do not join a cooperative as individuals.**

In June 2003, the Council took final action on Amendment 79, approving a GRS program for the non-AFA trawl catcher/processors greater than 125 ft LOA operating in the BSAI. The final rule for this action was published on April 6, 2006. The program was scheduled to phase in required retention rates, starting at 65 percent in 2005. The Secretary of Commerce revised the program to start in 2008 with a required retention rate of 65 percent. Required retention rates would then increase annually until it reaches 85 percent in 2011. After 2011, the retention rate would continue to be set at 85 percent, unless it was altered through the normal amendment process. Retention rates are calculated based on the round-weight catch or round-weight delivery of that species during the fishing trip.

This component changes the current Amendment 79 requirements by allowing vessels in the cooperative to pool their catch rates in order to meet the proposed GRS. Within the Non-AFA Trawl CP sector, all members of a cooperative may pool their retention rates to meet the standard. Vessels with higher retention rates could help vessels with lower retention rates meet the average retention rates required for the group as a whole. As long as the average of all vessels in the pool is higher than the minimum retention rates required, the vessels in their group will have met the GRS. Allowing vessels to average their retention rates should reduce the risks associated with individual vessels exceeding the required retention rate. Vessel owners who did not meet the minimum rate may be required to compensate other members of the cooperative that had higher retention rates. However, the cost of compensating other members of the cooperative may be less than the fines/penalties that would be assessed for exceeding the GRS. In years when some cooperative members exceed the minimum retention standard, they would be in a position to increase revenues by allowing other cooperative members to avoid fines/penalties by accessing their “excess” retention. Having fewer sanctions imposed on the Non-AFA Trawl CP sector may improve the public perception of that fleet by the public.

Averaging retention rates would help vessels participating in fisheries with historically low retention rates. Participants in the rock sole fishery have traditionally not retained undersized or male fish, due to market conditions. Table 11 from the September 12, 2003 Economic Safe Report indicates that, in 2002, 36.9 percent of the groundfish harvested in the rock sole target fishery was not retained. Meeting the increased GRS will likely be more costly in that fishery than in fisheries that have higher historic retention rates. The same Economic Safe reports that in 2002 the amount of groundfish retained in the BSAI rockfish fisheries was 90.8 percent. Recall that rockfish are not being allocated to the cooperative, so the cooperative is less likely to improve retention rates in the rockfish fishery. Flatfish species were discarded at the highest rate in the rockfish fisheries. In the Atka mackerel fishery the amount of groundfish retained was 75.5 percent. These retention rates indicate that it would likely be easier for participants in the rockfish or Atka mackerel fishery to meet the GRS than rock sole fishery participants. It also indicates that those fisheries may aid participants in the rock sole fishery in meeting the GRS. While the participants in the rockfish fishery could help vessels in the rock sole fishery meet the retention standard, the relative TACs in those fisheries make it unlikely that the rockfish fisheries could, by themselves, support members of the rock sole fishery in meeting the retention standard.

Vessels that do not join a cooperative will be required to meet the GRS on their own. They will not be allowed to pool their catch with other members of the sector. Vessels that are traditionally used in fisheries that have historically had lower retention rates will be placed at a disadvantage. The owners of these vessels are assumed to have thrown the fish overboard because it was more profitable than keeping the fish, processing the fish, and selling the fish. Vessels outside of cooperatives may also be limited in their fisheries. Markets play an important role in determining the fisheries a vessel operates. A vessel cannot simply elect to harvest species with high historic retention rates, if they cannot sell the products produced from those fish at a reasonable price. Market information by vessel is not available to the

public. Therefore it is not possible to predict exactly how the owners of each vessel will respond to the GRS requirements.

### 3.2.12.3 LLP and GRS Requirements for Non-AFA Trawl CP Vessels Electing Not to Join a Cooperative

**\*Non-AFA Trawl CP sector participants that elect not to join a cooperative will be subject to all current regulations including all restrictions of the LLP and the GRS if approved.**

This component defines the management structure for vessels in the Non-AFA Trawl CP sector that elect not to join a cooperative. Vessels participating outside of cooperatives will continue to be bound by the current management structure and any additional amendments that are implemented for those vessels.

Sections 3.2.8 and 0 of this document discuss the division of catch between members of the Non-AFA Trawl CP sector that join a cooperative and those that do not. Management of the fisheries that are not harvested under the cooperative(s) will be the same as under the status quo, with the potential addition of the new sideboard requirements discussed in this document. Management of the current fishery is described in Section 3.1.1 of this document. Those management provisions are included here by reference. In summary, NOAA Fisheries will require every harvesting vessel to be assigned a valid groundfish license for the BSAI that would allow them to meet all length and endorsement (gear and area) requirements of the LLP. Fisheries will be opened and closed based on the amount of the TAC that remains to be harvested in excess of the projected bycatch needs in other fisheries. When a species is closed to directed fishing, vessel operators may only retain that species up to the MRA. If harvests of that species exceed the TAC, the species could be placed on PSC status. A species on PSC status may not be retained. If the catch of a species approaches the overfishing level, all fisheries taking that species as bycatch could be closed.

The LLP defines the Federal fishing areas, gear types, and in some cases species that a vessel associated with a license may fish. Licenses also define the maximum length of vessels that can be fished using the license. Licenses grant their holders the privilege of participating in fisheries that occur in Federal waters of the GOA and BSAI. License holders must abide by all other regulations that are in place to manage the fisheries or risk losing their harvest privilege.

GRS standards for participants in the Non-AFA Trawl CP sector (Amendment 79) are applied to vessels greater than 125'. The retention standards apply to all vessels greater than 125 ft LOA regardless of whether they join a cooperative. It is expected that those standards will be easier to meet if the vessel is operating within a cooperative, because vessels can operate in a more rational manner and pool their retention rates with other members of the cooperative. However, if an owner wishes not to join a cooperative they must meet the GRS with each vessel individually. Vessels less than 125 ft LOA are exempt from the GRS requirements. Being exempt from the GRS does not exempt them from any additional costs associated with the monitoring requirements of this program. This may provide some vessel owners sufficient incentive to join a cooperative, since it would allow the owner to sell or lease their allocation if they cannot generate more profits outside the cooperative.

### 3.2.12.4 License Limitation Program Requirement

**\*All qualified license holders participating in the fisheries of the Non-AFA Trawl CP sector for Amendment 80 species would need to have trawl and catcher processor endorsements with general licenses for BSAI and the additional sector eligibility endorsement. Length limits within the license will also be enforced such that any replacement vessel entering the fishery may not exceed the Maximum Length Overall (MLOA) specified on the license.**

This component requires all vessels in the Non-AFA Trawl CP sector to be assigned a valid BSAI groundfish license, that permits the vessel to fish as a catcher processor using trawl gear in the BSAI, to participate in harvesting Amendment 80 species. The license must also be endorsed for a vessel length

that is longer than the vessel it is applied to by the owner. Replacement vessels must also abide by the vessel length requirements on the groundfish license.

Requiring vessel owners to retain their license - limits the number of licenses that are available for vessel owners to use in other fisheries. If vessels were not required to have a valid license to fish in the Non-AFA Trawl CP sector, the owner of the license would be able to sell it to another vessel owner. The purchaser of the license could bring a new vessel into the BSAI fisheries and harvest fish from the portion of the TACs available to them. The vessel owners most likely to be impacted by moving licenses would be those owners whose vessels harvest species with trawl gear in the BSAI or the Western or Central GOA.

Even though Amendment 80 is specific to the BSAI, members of the Non-AFA Trawl CP sector would need to retain their LLP license package if they wanted to participate in GOA fisheries. Current regulations for the GOA require vessels, of the size that would qualify for the Non-AFA Trawl CP sector, to have a GOA groundfish license before they may harvest groundfish species from Federal waters. Because GOA and BSAI licenses that were initially based on the catch history of a vessel cannot be separated, the owner could not sell only the BSAI license and retain the GOA license. Keeping the LLP requirements in place will help protect members of the GOA fisheries from potential increases in fishing effort, that could result if the licenses were sold to individuals that planed to use them above historic levels in the GOA.

It is anticipated that the Non-AFA Trawl CP endorsement will be attached to the general groundfish license (currently an option also exist that would attach the permit to the vessel). If the permit is attached to the license, only the owner of those licenses would be allowed to participate in the Non-AFA Trawl CP sector. Any sideboards caps implemented under this amendment would be attached to the license and the vessel to ensure that additional effort did not move into other fisheries.

Requiring members of the Non-AFA Trawl CP sector to have a valid BSAI license also will limit the areas a vessel can fish to those endorsed on the license. If a vessel is assigned to a license that only has a Bering Sea endorsement they will not be allowed to fish in the Aleutian Islands. Alternatively, if a vessel holds just an Aleutian Islands endorsement they would not be allowed to expand into the Bering Sea.

Based on the current licenses held by the potential members of the Non-AFA Trawl CP sector, it appears that a minimum of 3 vessels are fishing under licenses that do not have an Aleutian Islands endorsement and at least one vessel does not have a Bering Sea endorsement. If the LLP requirements were removed from the Non-AFA Trawl CP sector, those vessels would be allowed to fish in areas they were excluded from under the LLP. The benefits they would derive from fishing new areas would depend on the relative costs associated with harvesting fish from the two areas, the relative size of the TACs in the two areas when they are managed separately, and the fisheries that are open at given times of the year. Estimates of these factors cannot be made into the future. However, if a vessel owner has more options available to them they will likely select the option that generates the most profit. Fishing in areas previously closed to them could benefit vessel owners economically, though the magnitude of the benefit cannot be estimated. The increased effort in those areas could result in negative economic impacts on the historic participants.

### 3.2.12.5 Transfer of Vessel, Permit, and Catch History

**\*Permanent transfers of an eligible vessel, its associated catch history, and its permit would be allowed. Eligible vessels, their associated catch history, and sector eligibility endorsement would not be separable or divisible. In the case of a sunk, lost, inoperable or otherwise ineligible vessel, catch history would be attached to the license that arose from the vessel and could not be separable or divisible. All transfers must be reported to NOAA Fisheries in order to track who owns the sector eligibility permit and harvest privileges of a vessel. The purchaser must be eligible to own a fishing vessel under MarAd regulations or any person who is currently eligible to own a vessel.**

This component defines the system that allows a Non-AFA Trawl CP sector member to sell their permits to participate in the sector. It also defines the persons who are allowed to purchase those permits. Eligibility to participate in the Non-AFA Trawl CP sector would be granted based on the vessel's catch history and having a BSAI Groundfish license. The vessel's catch history identifies the amount of allocated species, sideboard species, and PSC species members bring into the Non-AFA Trawl CP sector. The catch history is permanently affixed to the vessel. If a person sells the eligible vessel, they also must sell the catch history associated with that vessel. If the vessel sinks, is lost or becomes inoperable, or otherwise ineligible, the catch history will be attached to the license that arose from that vessel.

Vessel and catch history sales would follow the same rules currently in place for selling a BSAI Groundfish license. The parties buying and selling the vessel, its catch history, and the endorsement would need approval from NOAA Fisheries. In the case of an endorsement and catch history attached to the license, the parties buying and selling the license would also need approval from NOAA Fisheries. The transaction is official only after NOAA Fisheries receives the application and approves the transfer.

Persons purchasing the vessel and the catch history must either meet the AFA qualifications for vessel ownership or be currently eligible to own U.S. fishing vessels. The provision would allow persons currently eligible to own a U.S. fishing vessel to purchase an additional license with the associated catch history. This provision was included to enable persons that were exempted from the AFA's 75 percent U.S. ownership standard to buy licenses/endorsements. Without that provision, vessel owners currently fishing, but not meeting the AFA eligibility requirements, would be excluded from purchasing additional licenses and the allocations, sideboard amounts, and PSC amounts associated with the endorsement.

### 3.2.12.6 Transfer of Cooperative Allocations within the Cooperative

**\*Annual allocations to the cooperative will be transferable among Non-AFA Trawl CP cooperative members. Such transfers would not need to be approved by NOAA Fisheries.**

This component addresses how NOAA Fisheries will account for the harvest of fish made by cooperative members. In general, it indicates that NOAA Fisheries will monitor catch at the cooperative level. NOAA Fisheries will only be concerned with whether the cooperative exceeds its allocation. If the cooperative exceeds its harvest limit NOAA Fisheries will impose penalties on the cooperative.

Vessels within the cooperative, through contractual agreements, will determine who is allowed to harvest the allocation NOAA Fisheries makes to the cooperatives. The contracts signed by individual cooperative members specify the penalties individuals are subject to if they exceed their harvest limit. Cooperative members that have their allocation reduced, as a result of other cooperative members over-harvesting their allocation, would be entitled to compensation from the individuals harvesting excessive amounts.

Because NOAA Fisheries is not tasked with monitoring whether a vessel catches more of a species than they were assigned, members of the cooperative are free to trade or lease the rights to fish within the cooperative without notifying NOAA Fisheries. Members of the cooperative will determine the amount of each species individuals are allocated. Trades or leases of fishing rights within the cooperative will be enforced through contractual agreements entered into by the various parties. If the terms of the contracts were not adhered to, the parties in conflict would take their dispute to the appropriate civil court. NOAA Fisheries would not be responsible for hearing the dispute nor would they penalize the individual that exceeded any harvest limits imposed by the cooperative.

Allowing members of the sector to trade harvest rights among themselves, without the need for NOAA Fisheries approval, will allow them to quickly react to conditions in the fishery. The process for transferring catch rights could take several days or weeks if NOAA Fisheries was required to approve each transfer. Contracts between individuals can be drafted and executed quickly. Decreasing the time it takes to complete a transfer should allow individuals to increase their efficiency and quickly react to conditions on the fishing grounds.

Allowing NOAA Fisheries to monitor catch at the cooperative level will also reduce the Federal enforcement burden. Requiring NOAA Fisheries to monitor the catch of individual vessels would impose the same monitoring requirements as an IFQ program. While the monitoring of the fleet is expected to be a high priority and require extensive observer coverage, ensuring that individual members do not exceed their allocation would likely be more burdensome for NOAA Fisheries and industry. Monitoring each allocation could require NOAA Fisheries to determine whether vessels operating in the sector have exceeded their allocation. Given that consolidation is expected to occur, we cannot determine the actual number of vessels that would need to be monitored. Each vessel's allocation would be comprised of the five primary species plus any sideboard and PSC species assigned to the sector.

Under the cooperative level monitoring system, NOAA Fisheries would need to determine if the cooperative as a whole exceeded their catch allowance. They would also need to close directed fishing for species in the non-cooperative fisheries that may occur in the Non-AFA Trawl CP sector, prior to those allocations being exceeded. Monitoring two sets of allocations<sup>44</sup> is expected to be less of a burden in terms of both labor costs and time.

The excessive share analysis in this amendment applies to the total amount each primary species a person brings into a cooperative. Those caps simply require NOAA Fisheries to monitor the total amount of each allocated species a person brings into a cooperative. That does not necessarily mean that they would need to monitor transfers within the cooperative, only transfers between cooperatives.

Overall, this provision is expected to reduce NOAA Fisheries management costs, while allowing the Non-AFA Trawl CP sector to efficiently transfer harvest rights within a cooperative. This should help cooperative members maximize the benefits they receive from their allocation. Additional tracking of harvest rights does not appear to be necessary given the objectives of this program.

### 3.2.12.7 Transfer of Cooperative Allocations Between Cooperatives

**\*Annual allocations to the cooperative will be transferable among Non-AFA Trawl CP cooperatives. Inter-cooperative transfers must be approved by NOAA Fisheries.**

Persons may transfer their annual allocation, or a portion of it, to a member of another cooperative. The transfer would require NOAA Fisheries approval, before the transaction could be completed. Transfers between cooperatives will take longer to complete than transfers within cooperatives. The NOAA Fisheries transfer approval will require the parties to the transfer to notify the agency of the transfer. NOAA Fisheries will then need to review their records to ensure that the buyer will not exceed the cap. They will also likely need to get approval from the selling cooperative. NOAA Fisheries will need their approval because they do not track allocation within a cooperative. If they did not require the cooperative approval, a person may sell/lease an allocation that they had no rights to under the cooperative agreement. The time required to complete the transfer will depend on a variety of factors. Those factors include issues like RAM's workload at the time the transfer is being requested, the number of transfers being requested, and the system developed to oversee the transfer process (i.e., electronic vs. paper). Details on the exact transfer process will be worked out prior to implementation of the program, but will probably be similar to the transfer requirements under the IFQ and Crab Rationalization programs.

The economic impacts of this option are similar to those associated with intra-cooperative transfers. Allowing transfers between cooperatives will provide the opportunity for harvest privileges to flow where they have the most value. If a vessel is more efficient they can pay more for the privilege to harvest fish. Improving the efficiency of the sector will increase the overall producer surplus generated by the fleet. It may also allow persons that do not have sufficient PSC to access the amounts necessary to harvest their

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<sup>44</sup> The total number of allocations would increase if multiple cooperatives were allowed to form. Additional cooperatives would increase the monitoring burden for NOAA Fisheries.

groundfish allotment. Allowing PSC transfers could create incentives for people to fish carefully. Some of the options considered in this program would reduce the overall amount of PSC that is available to the Non-AFA Trawl CP sector. If PSC is a scarce, persons will be willing to pay an amount up to the net revenue generated from harvesting the groundfish. PSC transfers would also increase the overall benefits that are expected to be generated from the program by allowing more of the groundfish allocations to be harvested, if PSC constrains the harvest of at least one cooperative.

### 3.2.12.8 GOA and Non-Trawl Catches Made by Non-AFA Trawl CP Vessels

**\*Any non-trawl, or non-BSAI catches by qualified license holders that are considered part of the Non-AFA Trawl CP sector will not be included in the defined cooperative program. In addition, these non-trawl or non-BSAI catches allocated to the Non-AFA Trawl CP sector would not necessarily be excluded from other rationalization programs.**

This component may no longer be necessary. It was developed when allocations were being considered for several BSAI harvesting sectors. Sectors were based on the mode a vessel was operating in when the catch was made. If a vessel was harvesting and processing groundfish using trawl gear, and they were not an AFA vessel, the catch would have been included in the Non-AFA Trawl CP sector's harvest when determining their allocation. That same vessel could have later in the year harvested fish with trawl gear, but not processed the fish. That catch would have been assigned to the Non-AFA Trawl CV sector. Because only the Non-AFA Trawl CP sector is receiving a direct allocation, all of their catch is assigned to that sector.

Including this provision would also reduce the protections provided under the sideboard alternative. If only BSAI harvests were counted, it would negate all sideboard protections for the GOA. It would also allow Non-AFA Trawl CPs to use fixed gear to fish in the BSAI, without having that catch count against sideboard limits. These activities would conflict with the overall goals of the sideboard caps that are proposed under this amendment.

### 3.2.12.9 Qualifying Catch History

**\*All catch history used for allocation and eligibility purposes will be legal and documented catch.**

This component ensures that any data used to calculate the allocation to the Non-AFA Trawl CP sector or eligibility to qualify for the sector must be legal and documented catch. Catch history data for catcher processor vessels is collected and maintained by NOAA Fisheries. That data will be used to determine the amount of catch each catcher processor is credited with harvesting. Catch that was made illegally or was not reported to NOAA Fisheries, based on their record keeping and reporting requirements, would not be counted in this calculation. It has been requested that this interpretation be made to exclude catch that was legally reported, but may have been made in violation of some regulation. NOAA Fisheries has informed staff that it would be difficult to enforce that requirement. They would need to define what violations would constitute removal of catch history. Given the degrees of possible violations that have occurred in the past and the gray areas that would be clarification the process was thought to be too cumbersome to enforce.

Catcher processor vessels that have "checked-in" to operate in the BSAI and GOA groundfish fisheries during a week must file a Weekly Production Report with NOAA Fisheries. Weekly Production Reports were submitted as paper copies starting in the 1980s, but in recent years they can be submitted electronically. Examples of the required reports and their instructions may be found at <http://www.fakr.noaa.gov/rr/report.htm>. The record keeping and reporting instructions indicate that the Weekly Production Report is a summary of the Daily Cumulative Production Logbook. The Weekly Production Report must be submitted to the Regional Administrator by 1200 hours A.L.T on the Tuesday following the applicable reporting period. The report contains data on the amount of product produced during the week, the discarded catches, and general information on the vessel and crew. Corrections and

revisions may be made to the Weekly Production Report by submitting a revision to an original report. Only fish that were harvested and processed legally and reported to the Regional Administrator following these guidelines will be included in the allocation and eligibility database.

A reason the Council is applying this requirement is to minimize challenges to the data used to determine a permit holder's fishing history. If this requirement were not included, a person would be able to challenge their catch history based on personal records. While personal records could be useful if data submitted to the Regional Administrator were lost or incorrectly entered into the database, it is not acceptable as a replacement for data that was never reported to the Regional Administrator.

Using only legal and documented catch to determine the distribution of TAC will streamline the implementation process. It will reduce the time NOAA Fisheries needs to determine a permit holder's catch history, and it should reduce the number of appeals to the Regional Administrator. It also ensures that only data used to help manage the historic fisheries will be counted when determining future allocations.

### **3.2.12.10 Groundfish Species Not Allocated to Non-AFA Trawl CP Sector**

**\*Disposition of groundfish species not allocated to the Non-AFA Trawl CP sector will not change as a result of the cooperative program developed in Amendment 80.**

Several groundfish species are not allocated to the Non-AFA Trawl CP sector under Component 1. This component reaffirms that those groundfish species not allocated will be managed as they are currently. A discussion of the current management program was provided under Component 1. Continuing the current management programs for those species are not expected to impose any negative economic impacts on persons participating in those fisheries.

One change may occur to traditional management measures for non-allocated species. That change is imposing harvest limits for these species on the Non-AFA Trawl CP sector. Component 12, Section 3.2.10 in this document discusses the issue of limiting the Non-AFA Trawl CP sector's harvest in fisheries that are not directly allocated to them. That section also provides information on the potential impacts. Imposing harvests limits in GOA fisheries, for example, would result in both sideboard limits and the total TAC being monitored. This change will most directly impact vessels in the Non-AFA Trawl sector. All other vessels will continue to be constrained by the overall ITAC, while members of the Non-AFA Trawl CP sector will be limited by the sideboard cap. This component is not intended to supersede other current regulations for vessels outside the Non-AFA Trawl CP sector. It simply is intended to state that harvests by vessels outside the Non-AFA Trawl CP sector will continue to be managed as open access, cooperatives, or IFQ fisheries based on the regulations currently in place for those fisheries.

### **3.2.12.11 Management of non-specified species and marine resources**

**\*Bycatch limits for non-specified species or marine resources would not be established. However, should unreasonable bycatch or other interactions occur, specific regulations to minimize impacts will be considered.**

Implementing this component would ensure non-specified species continue to be managed as they are currently. The catch of these species would be monitored, and to the extent possible, the biomass of the stocks would be tracked. Targeting of these species would be discouraged (NPFMC 2003). To help attain these goals, at a minimum, a maximum retainable amount would be set to discourage targeting of non-specified species.

The need to monitor the harvests of non-specified species has already been highlighted as a concern. Formation of the Non-Target Species Ad-Hoc Working Group is one example of a Council action that has already been taken to address those concerns. Those species will continue to be monitored to ensure they

remain viable. The Council is expected to take additional actions in the future to protect these stocks if they are needed.

Discouraging targeting of these species may become more important under a rationalized fishery. If some of the non-specified species are marketable commodities, fishermen with the available resources to target them may elect to do so. Species that have, or will develop, markets are the most likely to require additional protections in the future. Since the markets for many of these species are limited, or do not exist, there is no incentive for fishermen to increase their catches at this time.

Current information does not allow a list of the non-specified species that may be marketable in the future to be developed. The ability of producers to provide a constant supply of the product at a competitive price, relative to substitutes in the market, will play a role in determining whether a species will be marketed. Consumer tastes and preferences also play an important role. If consumers have little or no demand for a specific species, there is no incentive for producers to harvest that species.

### 3.2.12.12 Internal Cooperative Rules

**\*The cooperative(s) would need to show evidence of binding private contracts and remedies for violations of contractual agreements would need to be provided to NOAA Fisheries. The cooperative would need to demonstrate adequate mechanism for monitoring and reporting prohibited species to demonstrate adequate mechanism for monitoring and reporting prohibited species and groundfish catch. Participants in the cooperative would need to agree to abide by all cooperative rules and requirements.**

The focus of this option is ensuring that the cooperative implements formal rules that create individual responsibility for actions within the cooperative, and that the bylaws of the cooperative should be drafted in such a way that those requirements are clear to individuals outside of the cooperative. One issue that is specifically requested by the Council is that all cooperative members must agree to abide by the cooperative bylaws. This ensures that if problems occur within the cooperative, the offending party will be subject to penalties by NMFS through the cooperative. Mechanisms for reporting catch and cooperative assigned penalties for breaking cooperative rules must also be defined.

A benefit of cooperative(s) formation is that NOAA fisheries can monitor the activity of the cooperative as a whole instead of individual vessels, while allowing individual members of the cooperative to rationalize their fishing operation. The reason this is possible is that the cooperative is accountable to NOAA Fisheries for its activity, and individual members of the cooperative are accountable to the cooperative. If violations of fishing regulations occur NOAA Fisheries will take action against the cooperative instead of individuals. Monitoring the activity of the cooperative reduces NOAA Fisheries' monitoring burden, because harvests of individual allocations do not need to be tracked. However, if the cooperative does not develop adequate internal rules, NOAA Fisheries may not be able to take appropriate action against the cooperative if violations do occur. To ensure that adequate internal cooperative rules do exist, a representative of the cooperative must provide NOAA Fisheries with the contractual agreement signed by all the cooperative members.

The contractual agreement must contain sufficient remedies if violations of the contract occur. Those remedies will allow the cooperative to take action against individual members if they do not perform to contract requirements. Members of the cooperative must police their activities through terms of the contract, without such a requirement NOAA Fisheries would need to increase monitoring of the cooperatives. The increased monitoring would result in higher enforcement costs.

AFA pollock cooperatives are required to provide similar information. The requirements of the AFA cooperative contracts can be found at §679.61(e) of the Alaska Federal fishery regulations. In general, they are required provide on an annual basis the name of the designated cooperative representative that is responsible for filing all reports on their behalf, an agent that is the primary NOAA Fisheries contact person for the cooperative, the list of parties to the contract, the list of vessels that harvest the cooperative's allocation, and the promise to provide specific pieces of data on an annual basis. These

types of information will also be required from the Non-AFA Trawl CP cooperatives. NOAA Fisheries will provide the cooperatives a list of the information they need to manage the cooperatives, and the Council will require specific information they feel is required to monitor important activities of the cooperative. These requirements will impose a cost to the industry. However, the cost should be relatively small compared to the benefits derived from cooperative formation.

### 3.2.12.13 Reporting, Monitoring, and Enforcement, and Observer Protocols

**\*Specific requirements for reporting, monitoring and enforcement, and observer protocols will be developed in regulations for participants in the cooperative program. These monitoring and enforcement provisions are described in Section 3.3.7 of the April 2006 EA/RIR/IRFA. Revisions to Section 3.3.7 have been described in a March 27, 2006 letter from NMFS to the Council.**

This component states that specific requirements related to reporting, monitoring, and enforcement, and observer protocols are to be defined by NOAA Fisheries. They ultimately need to determine the parameters of the catch monitoring system that will be used to enforce Amendment 80. A discussion of their requirements is provided in Section 3.3.7 of this document. That section focuses on increased observer coverage levels and the necessary catch monitoring equipment/protocols that are needed to enforce this program. Those requirements are included here by reference. A general summary of the requirements proposed by NMFS Enforcement are:

1. All vessels would be required to weigh all catch on NOAA Fisheries-approved scales and provide an observer work station.
2. All hauls would be observed by NOAA Fisheries-certified observers.
3. An observer must be able to monitor the flow of fish between the point of exit from the codend to the point where the observer collects unsorted catch.
4. Each vessel would be required to submit a Vessel-specific Monitoring Plan to NOAA Fisheries for approval. Annual Cooperative Reports

### 3.2.12.14 Cooperative Annual Reports

**\*A detailed annual report will be required from cooperative(s) formed. Fishery managers will review the annual report and determine if the program is functioning as desired. An in-depth assessment of the program will be undertaken under the auspices of the Council/NOAA Fisheries every five years. The in-depth studies will report the accomplishments of the program and indicate whether any changes are necessary. This assessment shall determine whether the program is successful in reducing bycatch, minimizing waste, and improving utilization to the extent practicable to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, including the CDQ sector, communities and the nation as a whole. The Council shall consider significant changes or events (regulatory, economic, or biological) which negatively impact the Amendment 80 participants.**

Detailed annual reports will be required from all cooperatives that form in the Non-AFA Trawl CP sector. Those reports are anticipated to allow fishery managers, government agencies, and the general public to review the program and determine if the program is functioning as it was envisioned. The timing of the annual reports will likely correspond to the end of the fishing season. Draft reports will likely be due at the December Council meeting and the final reports due around the first of the year.

Regulations implementing the BSAI pollock cooperatives required cooperative members to provide annual reports on the 1) allowed catch and bycatch of pollock and all sideboard species by whatever method is used to determine those allocations; 2) actual catch and bycatch in the directed pollock fishery by vessel, and in sideboard fisheries by whatever method is used to determine those sideboards; 3) methods used to monitor fisheries in which cooperative vessels participated; and 4) actions taken by cooperatives to enforce vessel or aggregate catches that exceeded allowed catch and bycatch in pollock and all sideboard fisheries. This information is provided annually by the cooperatives to inform government agencies and the public of the cooperative's activities. Similar reports are envisioned regarding the harvest of species allocated to the Non-AFA Trawl CP sector and the other activities of the

cooperative. If the Council and NOAA Fisheries determine that additional information than that collected from pollock cooperatives is needed, it would be mandated in the regulations implementing the program. The provisions in this option would ensure that such information is collected and made available.

This component also would require that in-depth studies be conducted every five years to examine the impacts of the program. The in-depth study will examine the program to determine if it is successful in reducing bycatch, minimizing waste, and improving utilization. The in-depth study will examine any negative impact to Amendment 80 participants due to regulatory, economic, or biological conditions.

It is not possible to estimate the costs of these reports. The costs will depend on the amount of information that is requested and how frequently the reports are required. The costs will likely fall primarily on NOAA Fisheries and the Council in developing the reports. In addition to the report's labor and production costs, frequent reports will further reduce the time NOAA Fisheries and Council staff have to devote to other high priority projects.

### 3.2.12.15 Economic and Socioeconomic Data Collection

**\*A socioeconomic data collection program will be implemented under the non-AFA Trawl CP Cooperative Program. The program will collect cost, revenue, ownership, and employment data on a periodic basis. The purpose of the data collection is to fully understand the socio-economic impacts of the action, to inform future management actions, and to assure that this action serves its intended purpose and meets the goals set forth in the problem statement. Data will be used by Council and agency staff, recognizing that confidentiality is of extreme importance.**

**The ownership data will be collected by vessel for enforcement of the ownership cap regulations; ownership data collection is essential to ensure that ownership caps are not exceeded. Employment data will be collected for monitoring of the community impacts of this program. Revenue and cost data by vessel and sector are essential to identify/estimate the costs associated with bycatch reduction and estimate the revenues generated to the sector, as an objective of this program is to offer sector participants the opportunity to mitigate, to some degree, the costs associated with bycatch reduction. Revenue, cost and employment data will be used to monitor the program benefits to present generations of fishermen, associated fishing sectors, including the CDQ sector, communities, and the nation as a whole.**

**The Council will implement the following process for developing appropriate elements of the data collection program.**

- 1. Convene a staff workgroup to develop information necessary to answer questions posed by NOAA Fisheries by letter of March 28, 2006 to ensure an adequate basis for the data collection program.**
- 2. Host an industry workshop during the June 2006 Council meeting week to review and solicit comments in the socio economic data collection program.**
- 3. Council review and approval of the socio-economic data collection program and considerations of SSC comments.**

This section provides an overview of the data collection system proposed, including the rationale for data collection, a description of the data to be collected, and the process for collection and verification. Much of the information regarding the data collection system is derived from the data collection program used in the rationalization program for the BSAI crab fisheries. The data collection program is modified to reflect the purpose of this program and the nature of the fleet and fishery governed by this program. The data collection system is structured to meet the objectives of the Council in a manner consistent with the legal authority under which the data are collected.

Generally, the data collection program is intended to provide managers with the data necessary to 1) monitor and enforce certain aspects of the program, 2) determine whether the program is meeting its purpose, and 3) assess potential amendments to the program. The types of data that are under consideration can be characterized using four broad categories: ownership, employment, revenue, and

costs. Ownership data will be used for all three purposes. Revenue, cost, and employment data will be used primarily to assess the performance of the program and possible amendments.

This section first describes the process that has been used to develop the data collection program. This is followed by a brief overview of the different data types. The discussion of ownership data includes a discussion of the use of those data for monitoring purposes. The discussions of employment, revenue, and cost data briefly describe the types of data that would be collected. The section goes on to describe the use of the data for assessing the program's effects. The discussion relates the specific data to measures and models that would be used to make those assessments. This section then addresses several issues that arise in considering data collection, including the need for disaggregated data to assess program impacts and frequency of data collection. The section concludes with a discussion of the process that will be used to verify the data.

### **Overview of Process used to Develop the Data Collection System**

The standard process for development of amendments has been followed in the development of the data collection system. Yet, because of the importance of data collection to ensuring that the program meets Council objectives, and the need to closely assess the benefits of data collection to managers and costs of data collection to industry, the development of the data collection system has involved greater internal scrutiny than more routine Council actions.

The development of the data collection program was initiated by the Council's inclusion of a general provision for the collection of economic data in its design of this amendment. The original provision included little structure for the program, but expressed the Council's intent to collect economic data to monitor the success of the program. In February 2006, the Council requested staff to work with NOAA Fisheries staff to develop the specific elements for the collection of economic and socioeconomic data. Staff, working with NOAA Fisheries, has prepared a draft survey that could be used to collect of economic and socioeconomic data on the Non-AFA Trawl CP sector. The draft survey is located in Appendix 3. In addition, to ensure adequate Council consideration of data collection issues, NMFS Alaska Region sent the Council a letter identifying questions that should be addressed in the development of the data collection program. A copy of that letter is attached as Appendix 5. In response to these questions, and to ensure adequate review of the data collection system, the following additional steps will be taken at the June 2006 Council meeting:

1. After the Council's April 2006 meeting, a staff workgroup (including staff of the Council, NMFS Alaska Region, NMFS Alaska Science Center, and NOAA General Council) convened, which has addressed questions posed in the NOAA letter of March 28, 2006.
2. An industry workshop will occur in the evening of June 5, 2006, (the first Monday of the June Council meeting) to inform and receive comment from the affected sector and others regarding this collection.
3. The SSC will review the staff analysis of the data collection system, the survey, and the staff workgroup's report (responding to the NOAA letter of March 28, 2006) at the June 2006 Council meeting.
4. Council will review this analysis, the staff data workgroup report, a brief report from the industry workshop, the SSC recommendations at the June 2006 meeting prior to final approval of the data collection system.
5. Council staff will incorporate any modifications to the program made by the Council in the analysis to be provided to NMFS for rulemaking.
6. If the Council recommends that a data collection program be approved, NMFS will incorporate the Council's purpose and need recommendations, public comment from the industry workshop, and prepare Part I and 2 of the Paper Work Reduction Act guidance for survey or statistical analysis, along with a proposed rule to be submitted for Secretarial review

## **Brief Description of the Data to be Collected**

Following is a brief description of the types of data to be collected. Appendix 3 includes a draft of the survey that will be used to collect the data, showing the specific data intended to be collected under the program.

Ownership Data: Ownership data could include either vessel ownership or permit ownership. Some information is collected for both these categories; however, the information that is being collected may not be sufficient to answer all the questions that may be associated with ownership.

Detailed information on vessel ownership, within the Non-AFA Trawl CP sector, is currently not available to fishery managers or analysts. Some ownership information is collected by NMFS on Federal Fisheries Permits. Federal Fisheries Permit application forms require that vessel owners supply the name of the primary owners and a copy of the U.S. Coast Guard Abstract of Title or Certificate of Documentation if ownership changes. The level of detail collected in the Federal Fisheries Permit data provides insufficient information to determine the actual people that own the vessels.

Vessels projected to qualify for the Non-AFA Trawl CP sector are reported in Federal Fisheries Permit data as being owned by corporations, partnerships, and other business entities. Those ownership structures make it impossible to determine the actual individuals that own the entities identified without collecting additional information.

The U.S. Maritime Administration (MARAD) also collects vessel ownership data. MARAD collects these data to determine whether vessel owners are in compliance with the 75 percent U.S. ownership requirement implemented under the American Fisheries Act. Information collected by MARAD is considered confidential and may be restricted from release to other Federal agencies except under specific circumstances.

MARAD requires entities to provide proof of ownership using the “direct proof” or the “fair inference” methods. The “direct proof” method is used for companies that have 30 or fewer stockholders. That method requires the submission of the identity of stockholders, amount of stock the person owns, citizenship of the stockholder. If the stockholder is also a corporation or other similar entity the names of its officers, directors, and owners must be provided. The “fair reference” method is applied for publicly traded stocks and it requires that 95 percent (65 percent) of the stock is owned by persons with U.S. addresses to infer 75 percent (51 percent) U.S. ownership. When determining if 51 percent is of the stock is U.S. owned, 65 percent of the must be owned by a person with an U.S. address. These data may be sufficient to track ownership changes. However, a primary use of these data will be to ensure individuals are complying with the proposed ownership caps. It may be more appropriate for NMFS to collect the data in a format they need to enforce the caps instead of potentially relying on information collected under the fair inference method.

Collecting information on the owners of vessels is being considered because it would allow analysts to track consolidation and transfers that occur in the Non-AFA Trawl CP sector after cooperatives are implemented. Consolidation allows the fleet to operate more efficiently, but excessive consolidation could occur if an owner acquires a larger percentage of a fishery than is allowed under the program.

Permit ownership data will be collected by NMFS RAM division when they issue Amendment 80 permits. That information should provide adequate information on permit ownership.

Collecting detailed ownership data is the only way for NMFS to ensure that the ownership caps are not being exceeded. It is unlikely that NMFS or the SOC will approve any ownership caps recommended by the Council, unless they can be monitored and enforced. To ensure sufficient ownership data is available the Council and NMFS will need to develop a collection program, much like they did for the Halibut/sablefish IFQ program and the Crab Rationalization program.

The actual information needed to determine if a person is within the ownership caps depends on what the harvest privileges are attached to under this program. If the quota is attached to the vessel then vessel ownership will determine the amount of quota owned. Another option being considered would attach quota to the fishing permit. Since the owner of the permit and the owner of the vessel may not be the same, it is possible that only ownership information for the permit holder would be needed to monitor the ownership caps. If the permits are linked to the quota then NMFS could collect the ownership information at the time persons apply for the quota or transfer the permit from one person to another.

Employment Data: Employment impacts are an important consideration in most rationalization programs in the North Pacific. Efficiency improvements that are expected under a cooperative program are a result of consolidation that reduces the number of jobs that are available in the fleet. Persons that live in communities that have relatively few employment opportunities can be negatively impacted if they are unable to find comparable employment elsewhere. This issue may be less of a concern than it has been for other rationalization programs (e.g., crab) developed by the Council; vessels in this fleet are typically operated from locations with more employment opportunities than exist for residents of rural Alaskan Communities. If crew members are hired from the local area where the vessel owner is located, then the economic impacts that result from the loss of jobs will likely have a smaller impact on the local economies than if the jobs were lost in an area with more economic dependence on this fleet. However, the impacts on specific individuals could be considered severe by those impacted.

Limited employment data are available from catcher processor vessels operating in the BSAI. NMFS collects information on their weekly electronic reports that indicate the number of crew members on each vessel. The electronic reports do not provide information on crew residence, compensation, or employment stability. Information on crew residence and compensation are necessary if community impact analyses are conducted.

Revenue Data: Revenue data are being collected from the Non-AFA Trawl CP fleet through COAR and NMFS electronic reports. It is assumed that those types of data may be collected given our current reporting requirements.

Cost Data: Cost data are not currently being collected from the Non-AFA Trawl CP sector, although these types of data are being collected from fleets in other U.S. fisheries without an exemption to the MSA language. These data include costs that vary by trip and costs that do not vary by trip (i.e., fuel, lubrication and hydraulic fluids, food, taxes (resource landings taxes, fisheries business taxes, SMA taxes, and other borough and city tax, where applicable), observer coverage, packing materials and supplies, wages, repair and maintenance, gear, insurance (hull, P&I, and pollution), broker fees and promotions for sales, freight and storage, product storage and handling, waste and disposal, etc.)

### **Measures and Models, and the Use of Data to Assess Program Effects and Amendments**

The following discussion identifies data, measures, and models that may be used to monitor the success of the BSAI non-pollock groundfish cooperative program for the non-AFA catcher processor sector (the program) established under Amendment 80. Specifically, it identifies the method or models typically used to construct performance measures and the data required to adequately construct them.

The measures are intended to allow the Council to monitor the success of the non-AFA CP cooperative program in terms of addressing the some of the problems identified in the Council's problem statement for Amendment 80, which follows:

*The Council's primary concern is to maintain a healthy marine ecosystem to ensure the long-term conservation and abundance of the groundfish and crab resources. To this end, the Council is committed to reducing bycatch, minimizing waste, and improving utilization of fish resources to the extent practicable in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, communities, and the nation as a whole, while at the same time continuing to look for ways to further rationalize the fisheries. Focusing on*

*reduction of bycatch and the attendant benefits of cooperatives in meeting bycatch reduction objectives is an initial step towards rationalization of the BSAI groundfish fisheries. Bycatch reduction measures for the Non-AFA Trawl Catcher Processor sector is a priority focus in this step toward rationalization given this sector's historical difficulty in achieving acceptable bycatch levels. Allocations to this sector associated with cooperative management of catch and bycatch provide the opportunity for participants in this sector to mitigate the cost, to some degree, associated with bycatch reduction. In addition to reducing bycatch in one sector, assurance should be provided to minimize negative impacts on others.*

In addition, the Council has stated the following purpose of and use for the data being collected under this initiative:

*A socioeconomic data collection program will be implemented under the Non-AFA Trawl CP Cooperative Program. The program will collect cost, revenue, ownership, and employment data on a periodic basis. The purpose of the data collection is to fully understand the socio-economic impacts of the action, to inform future management actions, and to assure that this action serves its intended purpose and meets the goals set forth in the problem statement. Data will be used by Council and agency staff, recognizing that confidentiality is of extreme importance.*

*The ownership data will be collected by vessel for enforcement of the ownership cap regulations; ownership data collection is essential to ensure that ownership caps are not exceeded. Employment data will be collected for monitoring of the community impacts of this program. Revenue and cost data by vessel and sector are essential to identify/estimate the costs associated with bycatch reduction and estimate the revenues generated to the sector, as an objective of this program is to offer sector participants the opportunity to mitigate, to some degree, the costs associated with bycatch reduction. Revenue, cost and employment data will be used to monitor the program benefits to present generations of fishermen, associated fishing sectors, including the CDQ sector, communities, and the nation as a whole.*

These statements identify two primary uses for data being collected<sup>45</sup>:

- 1) Improved utilization. Improved utilization may be achieved through increases in production from the resource. At the most basic level, these production improvements could be realized through increased output from each unit of harvested resource. Similarly, improved utilization can be achieved by more fully utilizing the vessels that participate in this fishery; this is likely to come about as harvests consolidate to a smaller number of (more highly utilized) vessels. A deeper analysis, however, is required to examine the variety of targeting and production choices. Since participants can choose to serve different markets with different species and products, or to idle various vessels, an examination of utilization must include an assessment of product prices and quantities by species to determine whether utilization levels (and targeting and production choices) are responses to market forces, and the extent to which increased vessel utilization has reduced total average costs.
- 2) Cost of bycatch reduction. Determining whether costs of achieving bycatch reductions are excessive requires an examination of the extent to which targeting and production choices affect profitability and economic performance of participants. Reasonable assessments of costs of bycatch reductions must examine the extent to which participants are able to cost effectively

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<sup>45</sup> The rationale for including impacts to CDQ groups and communities is not clear given the scope of this action, specifically the data collection component. The Council should clarify its intent to collect data for monitoring CDQ group and community effects. Currently, the data collection program collects only CDQ royalty payments by Non-AFA Trawl CPs, which by itself provides little information concerning CDQ impacts. Once the Council intent has been clarified, the survey and data collection program could be adapted to address the stated Council interests.

avoid discards, through improvements in targeting and improvements in retention of catch. In both cases, the ability of participants to operate efficiently and profitably must be assessed.

### **Measures for Assessing Effects of the Program**

The two problems identified in the Council purpose and need statements that require economic analysis of the fleet involve complex operational and market decisions. As such, a variety of measures can be used to assess various aspects of those choices. The use of multiple measures serves two purposes. First, since the economic decisions are complex by their nature, use of several measures with consistent results should reinforce conclusions and contribute to accuracy in assessments. Second, use of multiple measures should provide a more complete understanding of these complex decisions.

This paper discusses some economic measures and the corresponding economic data (some of which must be elicited through the surveys) that are integral to assessing the success of the program in achieving the Council's goals. For a majority of the measures elaborated on below, the required data is discussed in the context of the vessel (and at times, the firm), depending on the measure. Measures that are primarily production based (capacity utilization, productivity, and efficiency) are best constructed with data from the vessel level. Such a focus allows the analyst to more directly identify the link between inputs used to catch and process fish and the quantity of product forms obtained. Characterizing this link, and how it changes, is a key part in assessing the changes in economic performance that arise under rationalization. However, because the production process of one vessel is at times only one component of the overall business structure, instances arise in which the firm (which may own one or more vessels/plants) is the natural unit of observation.

Therefore, in addition to the individual measures discussed below, ownership data are required to link pieces of operational data. These data allow one to assimilate the individual effects into the likely "overall" effect of this action on the residual claimants of the operations we observe on a piece-by-piece basis. It also allows analysts to monitor structural changes not reflected directly in performance-based or profit-based measures, such as changes in the concentration of ownership, the structure of ownership (including proprietorships, publicly traded corporations and privately held corporations), and the relationships within firms, (i.e., the amount and nature of vertical and horizontal integration) and among firms.

Although vessel and firm level detail are needed to adequately construct many of the measures discussed below, there are measures for which aggregate (e.g., sector level) data can likely provide an adequate representation. One underlying problem with using aggregated data for all purposes, however, is that the conditions under which the aggregate data accurately represent the individual firms' production technologies and decisions are quite restrictive. Many aggregate level models require unrealistic assumptions that may seriously bias the resulting measures (aggregation issues constitute a large branch of economic theory). Furthermore, if the aggregation is too extreme, the information that can be obtained from a model will not allow the analyst to adequately explain the source or cause of any changes. In other cases, the lack of sufficient number of observations (i.e., data on each vessel/plant or firm operating in a given time period) may preclude estimation of the model typically used to construct a particular measure. Finally, aggregate data cannot be used to determine the distribution of benefits among fishermen from the management change. For example, aggregate profits across all participants could increase even though the profits for the majority of participants decreased. Additional discussion of data aggregation is contained in the section on issues concerning data collection.

Note that this discussion is limited to the specific data needed to address economic goals identified in the problem statement (to increase utilization and to reduce costs for achieving bycatch goals). It is anticipated that these data will be combined with other data collected for catch monitoring and management purposes to determine the extent to which the action achieves its economic objectives. These additional data, which are currently collected, include catch data (including discards) and production output information (including product form, quantity, and price information).

## **Specific Measures and Necessary Data:**

### **1) Sector capacity and capacity utilization**

Data Required: Typically, the analysis of capacity and capacity utilization is based upon the cost structure of the vessel/plant, and examines whether the observed level of production coincides with the least-cost level, given the capital stock. This process requires one to compile information on all significant variable costs (labor, fuel, gear, etc.), including the price of all variable inputs and the quantities used. A measure of the capital stock is also required, and is often expressed as the dollar value of the vessel and processing equipment onboard, or with proxies such as vessel characteristics [length, tonnage, horsepower, etc.]. One can then estimate the relationship between output (total production by species) and cost. If production is currently less than the level at which total average costs are minimized, given the existing capital stock, capacity is under-utilized (the opposite is true if current output exceeds such a level). Further extensions of this approach allow one to directly compute the contribution of the capital stock in production and thus, provide an alternative measure of the extent to which capital is being utilized.

Summary: Variable input prices and quantities purchased, capital quantities, and product quantities (by species) are required.

### **2) Sector profit (total revenue minus total cost)**

Data Required: This measure is comprised of total revenues less total cost. If one wants to understand the source of any change in profit at the most basic level, one needs separate measures of total revenues and total costs. However, without details on total production (by species and product form), prices and quantities of variable inputs, and fixed costs, one cannot tell if costs changed due to changes in catch levels, production patterns, effort (variable input) levels, input prices, or fixed costs. Furthermore, without detail on the quantities sold and prices received, for each product by species, one cannot tell if changes in revenue are attributable to changes in price or product outputs. Thus, without the above information, changes in profit cannot be explained and increased production or cost efficiency cannot be discerned from exogenous market impacts. The data components described above can also be used to construct predictive models that assess the likely change in production patterns, revenues, and costs in response to market shocks and/or regulations.

Summary: Variable input prices and quantities purchased, fixed costs, production quantities, by product form and species, and prices received are required.

### **3) Sector quasi rent (total revenue minus total variable cost)**

Data Required: The comments expressed in 2) with respect to sector profits apply to quasi-rents as well, except that fixed costs are not required for the analysis. Such a focus eliminates accounting for fixed costs that cannot be easily allocated to a specific vessel, and must be prorated across several vessels. However, in many cases changes in variable costs can be driven by fixed costs (such as new investment in capital equipment), so it may be prudent to include fixed costs in the analysis, when possible.

Summary: Variable input prices and quantities purchased, production quantities, by species and product form, and prices received for each product are required.

### **4) Productivity**

Data Required: Productivity measures reflect changes in the quantity of inputs required to produce a unit of output. For example, a simple, single-input productivity measure such as labor productivity is computed as the ratio of output to labor hours. These measures are quite limited, however, in that they fail to account for the use of other inputs in production. That is, the ratio of total output to labor hours may have increased over time for a particular vessel, but this may be due to increased use of automation (so the decreased labor use has been offset by increased capital expenditures). Therefore, the input data required to estimate productivity should consist of those inputs that directly contribute to the quantity of

output one can produce. For this reason, total factor productivity (“TFP”) measures are preferred, which account for the use of, and substitution among, all inputs in production.

Summary: Quantities of all direct inputs in production and total quantities of all products, by species are required.

#### 5) Efficiency

##### Technical Efficiency

Data Required: The measurement of “efficiency” can be undertaken in several ways to identify different contributions to overall efficiency. Technical efficiency is similar to productivity in that it relates the quantity of inputs used to the produced bundle of output(s). Essentially, productivity measurement involves computing how the skill with which inputs are converted to outputs progresses (or regresses) over several periods of time, and technical efficiency measurement involves analyzing each firm’s relative proficiency in production relative to one another within each period.

Summary: Direct inputs in production and total product quantities by species are required.

##### Allocative Efficiency:

Data Required: The measurement of input-allocative efficiency estimates the degree to which one minimizes costs of producing a given level of output by choosing an optimal proportion of inputs, given their relative costs and contributions to production. In more familiar terms, cost savings afforded by eliminating the race for fish under the current limited access management are likely to increase input-allocative efficiency. Output-allocative efficiency reflects the degree to which one chooses the optimal mix of outputs, given the respective market prices and opportunity costs of producing one product instead of another. Loosely speaking, measures of input (output) allocative efficiency can be thought of as the extent to which one minimizes (maximizes) the cost of (revenue from) a given level of outputs (inputs). Note that one can be input-allocatively efficient and output-allocatively inefficient, or vice-versa. Similarly, one can be technically efficient and allocatively inefficient. The point here is that each measure captures a different aspect of production, and each can be affected in different ways from changing institutional or regulatory environments.

Summary: The quantities of direct inputs in production and their costs, total product quantities and prices, by species, are required.

##### Concentration of ownership

Data Required: Ownership concentration can be important to the development of efficiencies in a fishery, but excessive concentration may result in ownership caps being exceeded. Harvest privilege distribution and vessel and license ownership data are required to assess concentration of ownership.

##### Level and distribution of harvesting and processing employment and payments to labor (number of individuals, hours/days worked, and income)

Data Required: Changes in fishery management can alter the methods and patterns of employment and payments to labor, in turn affecting the cost of harvesting and processing operations. Determining the extent to which changes in costs reflect changes in employment and compensation could be important in gauging the success of the program in achieving its goals. Harvesting and processing sector employment and payments to labor data are required.

##### Degree of involvement of participants in other Alaska fisheries

Data Required: Vessel ownership, catch, production, and revenue information are required.

##### Value of harvest privileges

Data Required: Information on the prices of sales of vessels and licenses and leasing of interests within and between cooperatives is required.

### Issues

#### Disaggregation

Economic theory is concerned with explaining the relationships among economic variables (e.g., input quantities and prices and output quantities and prices) and using that information to explain, evaluate, and/or predict production, allocation, and distribution decisions. This process typically involves specifying a ‘model’ that characterizes the salient aspects of a particular process or decision. The chosen model defines the general relationships to be examined, and within the model, observed choices, outcomes and factors (i.e., data) are used to provide information regarding the relationships of interest.

For example, one may specify a model of producer behavior that examines the effect of input and output prices on input and output decisions. Within this model, one can establish both the direction of certain relationships (i.e., does an increase in the cost of fuel decrease the quantity of fuel demanded?) and the magnitude or sensitivity of these relationships (i.e., what is the percent change in fuel consumption when fuel prices increase by one percent?). These relationships are established by examining the observed reactions of producers in the sample to changes in the price of fuel.

One must observe the choices of several actors at various prices to accurately and completely characterize firms’ reactions to price changes. These observations increase the amount of ‘evidence’ substantiating the hypothesized relationship, and show the relationship over a wider range of conditions (e.g., is the magnitude of the response to an increase in fuel prices greater when prices are relatively low?). Furthermore, the quality and reliability of the model increases when one observes the same firm or decision making unit in several periods. Such observations help to establish whether observed choices and relationships are stable, and the extent to which they may change in conjunction with other potential shocks. Therefore, it is widely accepted that ‘more is better’ when incorporating data into models -- as long as the quality of the data is not compromised by extracting more detail.

Fortunately (for both those supplying the data and the analyst tasked with compiling it), statistical tests can be used to evaluate the strength or significance of the estimated relationships. Assuming that all relevant variables are included in the model, there comes a point at which one can reject the conclusion that the estimated relationships are spurious. Just as with the relationships one attempts to characterize in the model, the tests of significance typically become increasingly conclusive as the number of observations increase. Going in the opposite direction, by say, aggregating data, results in a loss of unique observations from which to characterize and test relationships, and generates a ‘representative’ data set that does not coincide with (and may mischaracterize) actual choices.

To elaborate this point a bit, let us return to the fuel example. Micro-level data (the vessel/plant in our current context) may indicate that ‘firm one’ decreased fuel consumption by 1,000 gallons when fuel costs rose, while ‘firm two’ decreased consumption by 500 gallons. The obvious information here is that the two firms may react differently to input price changes. This would be masked by instead only seeing that total fuel consumption dropped by 1,500 gallons B when in fact no actual decision maker cut fuel consumption by 1,500 gallons in response to the price change. Furthermore, we would not know if one firm is more price-sensitive than the other is, or if the entire change should be attributed to only one of the firms. At the micro-level, we could examine the scale of the two operations and see if ‘firm one’s’ production was twice ‘firm two’s’ (and thus, they reacted the same, but total quantity consumed was different due to their differently sized operations), or if product mixes at the two firms varied allowing ‘firm two’ to switch to a less fuel-intensive production plan.

It should be fairly clear by this point that the aggregate response postulates a relationship that does not reflect the observed choices, and often limits one’s ability to understand changes. In addition to this anecdotal example, there is a vast literature on the effects of aggregation across firms and the conditions

under which it is valid. Unfortunately, many of the assumptions required do not coincide with reality. For example, to model the cost structure of multiple fishing vessels using data on total catch and the total quantity (and cost) of the inputs used, all vessels in the sample must have identical marginal costs of production. If this is not the case, the model results will be inaccurate and biased by the aggregation. There are several other aggregation-related issues that not only restrict the types of production that can be analyzed in aggregate, but compromise the interpretability of the results from the models that can be constructed.

It is worth emphasizing at this point that the benefits of using firm-level data in models (increased precision, robustness, and validity of estimated relationships) need not be tainted by concerns regarding elicitation of the detail used to construct them. The results of the models can be presented at an aggregate level, as though the micro-level detail was never there. The essential difference, however, is that much more information went into establishing the relationships described by the model, even though the level of sensitive detail shown in the model results is identical. If there is a large enough sample that subgroups (with similar operating characteristics) can be broken out without threatening confidentiality, the increased precision of the micro-level data allows for much more accurate description, evaluation, or prediction of the subgroups' choices and/or reactions.

#### Scope of the Data Collection Programs

The following topics are addressed in this section: (1) the need to collect economic data for all of the economic activities of the firms participating in the Non-AFA Catcher Processor sector; and (2) the required level of detail of the economic data.

#### Economic Data for All Fisheries

The effects of the program will depend not only on how it affects economic activity in the Amendment 80 fisheries, but also on how it affects the economic activity of Non-AFA Catcher Processors in other fisheries. Therefore, the success of the program cannot be fully assessed without data for the full range of fishery activities of those vessels. The choices of data to collect for Amendment 80 fisheries and for other fisheries is intended to allow some analytical distinction of activities in the different fisheries and assessment of the overall operations of Non-AFA Catcher Processors participating in the program.

#### Required Level of Detail

The level of detail that is required naturally depends on intended uses of the data. At the very minimum, analysts will require the data necessary to construct the measures discussed in this paper. Such a level of detail will allow analysts to show how those measures may be affected by the program. In some cases analysts may be able to (1) determine which changes were principally the result of the program, as opposed to other external factors or (2) predict the changes that would occur over time with the program as initially implemented or with proposed changes to the program after it is implemented. The benefits of collecting detailed data must be balanced against the costs to industry of compiling data that separates activities in the different fisheries and the administrative burden to the agency of processing the data. The detail of the data collection defined in the surveys is intended to balance these interests.

#### Frequency of Data Collection

The frequency at which data are collected often varies by type of data. For example, catch data are collected at the time of landing on fish tickets, while more general production data are collected annually in Commercial Operators Annual Reports. The cost to the industry and the usefulness of the data are two key criteria for determining how frequently each type of data should be collected. To balance the benefit of data to managers against both the burden to industry of providing data and the cost of administration of the program, all data under this program will be collected annually. Annual submission of data should minimize the burden to industry and costs of administration, while still providing analysts with adequate data for analyzing effects of the program.

### Confidentiality

Protecting the confidentiality of the economic data collected is a very high priority for the management agencies and the industry. Since the data will be collected under the authority of the MSA the substantial protections provided by the Act will be maintained for all data.

To protect the industry, before data are collected regulations must be established that protect the data from being released for reasons other than the purposes for which it was collected. Some members of the fishing industry have stated that in the past data have been provided to agencies on a voluntary basis. Those data were then forced to be released, through court proceedings, and used in lawsuits against the companies that provided the data. Because of such incidents, it is imperative that regulations preclude the data from being used by individuals that are not intended to have access to the data. Authorized agency staff from NMFS, ADF&G, and NPFMC are currently defined as the primary users of these data. Other users would include individuals that are contractors of the above agencies that are conducting research associated with the program and its fisheries. Examples include agencies like AKFIN or PSMFC that are involved in maintaining and supplying data to other agencies. University faculty conducting research for one of the above agencies would also be envisioned as users that would be given access to these data. The release of these data outside of the primary users or for other purposes would be strictly regulated. NMFS has stated that protecting the confidentiality of the data will be one of its highest priorities.

**Data Verification:** Any analysis is only as reliable as its underlying data. Analysis of data collected as a part of this program will be useful for assessing the management changes of the program only if the data are accurate. Regulations will be developed to ensure the accuracy of data being provided. Verification of the data will ensure that manager can be provided with reliable analyses to assess both the impacts of the program and any changes to the program under consideration. Reliable analyses are critical to the adoption of management programs that bring about health and stable fisheries.

Two different processes could be used to verify the data: an audit process or a process that requires the submission of audited financial statements or tax returns. An audit process is favored, because it is likely to be less burdensome and intrusive, and more focused on the data that will be collected. Annual submissions of audited financial statements or tax returns, on the other hand, could involve aspects of a companies operations unrelated to the program and vessels that fish under the program, making them too disconnected from this particular fishery to be useful for data verification. In addition, these data could be revealing about aspects of a company that are beyond the purpose of the data collection. An audit process would be more informative since it would be focused on the data submitted and could be accomplished in a manner that is less obtrusive and burdensome. The audits system would involve a combination of random and non-random audits. Non-random audits would be undertaken after examining data for unexplainable outliers. Prior to an audit, a submitter would be asked to internally verify the submission and correct any inaccuracies. Submitters of these data, however, could be audited to verify data accuracy. Random audits would be undertaken periodically for some portion of the data submitters. Industry members would be provided an opportunity to correct data submissions at this stage, if errors were deemed to be unintentional. Such a process would provide industry with an incentive to supply accurate data and tend to increase the confidence that industry, management agencies, and other stakeholders would have in assessments based on that data. Goals of this process are to develop a data collection program that collects the best information possible to conduct analyses of the Amendment 80 program, minimizes the burden on industry, and minimizes the need for enforcement actions. Giving the person submitting data a chance to correct problems is considered important because of the complexities associated with generating these data. The intent of this program is to ensure that accurate data are collected without being overly burdensome on industry for unintended errors.

The following describes the data verification process that would be used for non-AFA trawl CPs under Amendment 80. The data verification process for Amendment 80 is similar, but not identical to that developed for Crab Rationalization.

Submission and review of economic data: As described earlier, non-AFA trawl CPs would be required to submit economic data to NMFS through an economic data survey. Participants would be required to complete and submit the survey to NMFS by a date certain each year. NMFS initially would review the submitted economic data survey to determine whether all required information has been provided, i.e. NMFS would determine whether the economic data survey is complete.

As in the BSAI crab fisheries, issuance of an annual Amendment 80 permit/endorsement<sup>46</sup> would be contingent upon the applicant's submission of a complete economic data survey. If an applicant has failed to submit an economic data survey to NMFS, or has submitted a survey that did not provide all of the required information, the application for an annual Amendment 80 permit/endorsement would be considered incomplete by NMFS and the applicant would not receive an annual Amendment 80 permit/endorsement. Until all requirements of the annual Amendment 80 permit/endorsement application are satisfied, including the submission of a complete economic data survey, the person would not receive their annual Amendment 80 permit/endorsement. Given the need for such an endorsement in order to participate in Amendment 80 fisheries, it is anticipated that economic data surveys will be completed and submitted by the regulatory deadline. If a person was required to submit an economic data survey and does not apply or re-apply for an annual Amendment 80 permit/endorsement, then NMFS Enforcement will be contacted. Enforcement would then use their discretion regarding the best method to achieve compliance. Those methods could include fines, permit sanctions, or criminal prosecution.

It is important to distinguish between an economic data survey that is "complete" versus one that is "accurate." A complete economic data survey is one that has information in all required information fields. It is not necessary to determine whether the submitted information is accurate in order to determine whether the survey is complete. As long as the survey is complete, NMFS would issue an annual Amendment 80 permit/endorsement because the submitter would have complied with the regulatory requirement to submit a complete economic data survey. Once NMFS has determined that the economic data survey is complete, NMFS would then determine whether the submitted information appears to be accurate.

Audit process for completed economic data surveys: Completed surveys could be subject to verification through either a non-random audit process or a random audit process.

Non-random audit process: A non-random audit may be initiated by NMFS when NMFS detects potential errors in the data submitted and the submitter asserts the data's accuracy or submits additional data that does not adequately respond to NMFS' identified concerns. A non-random audit would be initiated when attempts by NMFS to verify the submitted data do not resolve NMFS' data questions to NMFS' satisfaction.

The process for non-random audits begins when a complete economic data survey is submitted to NMFS. That survey will be forwarded to NMFS to check for potential errors. Potential errors may be detected by NMFS when information provided by one company is much different than that provided by similar companies. It is anticipated that data would only be called into question when obvious differences are encountered. If errors are detected by NMFS, NMFS will contact the submitter, describe the potential errors, and request that the person providing the data double-check the information. Any reporting errors could be corrected at that time or NMFS would provide the submitter with an opportunity to submit data that would replace or supplement the data in question or explain the apparent discrepancy. Submitters would have a specified timeframe in which to respond to NMFS' questions. Failure to respond to NMFS' questions may result in an enforcement action.

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<sup>46</sup> Persons eligible for the Non-AFA Trawl CP sector are anticipated to receive an annual permit authorizing their participation in either a cooperative or the sector's limited access fishery.

If the person submitting the data indicates that the data are accurate and fails to explain the discrepancy to the satisfaction of the agency, NMFS would “audit” the company’s data as described below. It is anticipated that NMFS Enforcement would not be contacted during the non-random audit process unless the submitter refuses to allow NMFS to conduct the audit or the audit reveals willful misreporting.

Random audit process: A random audit would be initiated by NMFS to spot check the accuracy of information provided by the economic data surveys. A sampling methodology would be developed by NMFS to select those economic data surveys to be audited in a random audit process. NMFS would not have to detect potential errors in the submitted data in order to initiate the random audit process. The submitters of those economic data surveys identified by the sampling methodology would be contacted by NMFS and requested to participate in the random audit. It is anticipated that NMFS Enforcement would not be involved with the non-random audit process unless the submitter refuses to allow NMFS to conduct the audit or the audit reveals willful misreporting.

Selection and qualification of auditors: Auditors will be selected by NMFS based on criteria reflecting objectivity, availability to perform services in a timely fashion and within professional standards. Auditors may include but would not be limited to licensed certified public accountants. An auditor would be required to have experience in forensic accounting and investigative practices. However, the auditors would not conduct enforcement investigations.

Audit requirements: Under either the random or the non-random audit, NMFS would contact the submitter to be audited and obtain the information required to conduct the audit. Examples of the types of information NMFS would need to review in an audit include: audited or reviewed financial statements, tax returns, invoices, receipts and other original documents, worksheets, or other business records or original documents verifying the accuracy of the data submitted. During an audit, the submitter would be required to demonstrate how the information in the economic data survey conforms to the company’s appropriate financial information for the item being audited. Since some of the information requested in the surveys may not be maintained by companies and must be calculated, it is possible that differences between the “audited” data from financial statements and survey data may arise. In that case, the person filling out the survey would be asked to show how their numbers were derived.<sup>47</sup> If the explanation resolves the problem, no further action would be needed. If questions remain, the agency would continue to work with the providers of the data unless an impasse is reached. This system is intended to prevent abuse of the verification authority.

The submitter of an economic data survey would be required by regulation to participate in a random or non-random audit and to provide the information necessary to conduct the audit. A submitter’s failure to comply with the audit or to provide information necessary to conduct the audit would be a violation of regulations. A copy of all records from the verification process would be maintained by NMFS for a minimum of 5 years.

Data for GOA Portion of Operation: It is assumed that, unless directed otherwise, data associated with all groundfish harvests would be collected as part of this program. Under the Crab Rationalization program only data associated with BSAI crab were collected. This program would again focus on the species that the Council oversees. For groundfish that includes both the GOA and BSAI, therefore groundfish activity from both areas would be included.

**Costs of the Data Collection Program.** Costs of the data collection program can be separated into three different categories 1) costs of data submission that will be borne by industry 2) implementation costs, including the ongoing costs of collecting and processing data submissions, and 3) costs of data

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<sup>47</sup> Any time a number must be derived, the survey will provide direction on how to calculate the information requested. This direction should help minimize differences. However, when discrepancies do arise, the firm will be given an opportunity to show how they derived their figures, and correct the information if necessary.

verification. While the first of these costs will clearly be borne by industry, the second and third will be initially incurred by NMFS, but might be recovered under a cost recovery program, if these costs are found to be integral to the share-based cooperative program.

Costs of Annual Data Submissions Members of the Non-AFA Trawl CP sector must incur the costs of complying with the reporting requirements. The cost of fulfilling the data collection requirement for Office of Management and Budget (OMB) purposes was estimated to be 20 hours per vessel (the same amount as estimated for the crab rationalization data collection program). Since the proposed structure of the program is similar it is assumed that the time costs would be similar. No information is available on the actual time individuals spent complying with the crab program's requirements.

#### Implementation and Annual Costs of economic data collection (excluding verification)

Experience with the economic data collection report for the crab rationalization program provides some reference for projecting accounting costs for the proposed economic collection program under Amendment 80. It is not possible to determine with the current guidance, whether all Amendment 80 data collection tasks will be funded through NMFS staffing or a combination of NMFS staffing and private contracts (or cooperative agreements). While the potential number of entities and sectors impacted by the Amendment 80 data collection are small compared with the crab rationalization program (approximately 12 companies, and 26 vessels), the Amendment 80 collection will still require the following:

1. The data collection instrument will have similar blocks of data as those in the crab economic data reporting (and thus be several pages long). *Initial design of the instrument will take 3 person months of economist time, and 2.5 person months of regulation writing and PRA package preparation time.*
2. A data collection instrument must be tested. *We project this will take 1.5 person months by one economist.*
3. A protocol for contacting potential vessel owners and leaseholders, informing them of due dates and answering questions on the data forms and keeping a formal record of the comments and return dates for forms, revisions to questioned fields, and a record of those contacts will need to be formalized. *The creation of the protocol will take 0.5 person month. In addition, the ongoing review of responses to data report submission, and initial review would be approximately 2 person months per year, assuming a trained economist level of skill.*
4. An initial data processing application (a database), will be developed to track who owes the agency a data form, receipt of data forms, response to questions, and data entry of responses. *The creation of the database is anticipated to take 1 person month of programming time and 0.5 months of an economist's time. Long term maintenance of the database for each year surveyed, is likely to take 1 month of data entry time by a data entry clerk (each year).*

NMFS has developed a rough estimate of the initial cost and reoccurring costs of the program. Recordkeeping costs are likely to be subsumed by existing tasks. Removing the recurring costs associated with annual data submissions, the total costs of the initial implementation would be \$77,000. The recurring annual costs would be approximately \$23,000.

#### ***Summary of labor and cost estimates for set up and initial implementation of data collection***

<b>Task</b>	<b>Staff Time</b>	<b>Cost</b>	
<i>Initial design of the instrument</i>	<i>3.0 months</i>	<i>Economist</i>	<i>\$18,000</i>
<i>Initial PRA package &amp; Regulations</i>	<i>2.5 months</i>	<i>Regulation staff</i>	<i>\$15,000</i>
<i>Test and revise collection instrument</i>	<i>1.5 months</i>	<i>Economist</i>	<i>\$9,000</i>
<i>Determine protocol for contact and recordkeeping of contacts</i>	<i>0.5 months</i>	<i>Economist</i>	<i>\$3,000</i>
<i>Answer questions by submitters</i>	<i>2.0 months</i>	<i>Economist</i>	<i>\$24,000</i>

<i>and conduct initial review</i>			
<i>Creation of database for data</i>	<i>1.0 month</i>	<i>Programming</i>	<i>\$5,000</i>
	<i>0.5 months</i>	<i>Economist</i>	<i><u>\$3,000</u></i>
<i>Total Staff Cost/or Consulting - one time at initial implementation</i>			<i>\$77,000</i>

***Summary of labor and cost for annual data maintenance:***

<b>Task</b>	<b>Staff Time</b>	<b>Cost</b>	
<i>Annual revision to instrument</i>	<i>0.5 months</i>	<i>Economist</i>	<i>\$3,000</i>
<i>Revisions to PRA package or Regs.</i>	<i>1.0 months</i>	<i>Regulation staff</i>	<i>\$6,000</i>
<i>Revisions to PRA package or Regs.</i>	<i>1.0 months</i>	<i>Economist</i>	<i>\$6,000</i>
<i>Ongoing notice/contact/questions and recordkeeping of contacts</i>	<i>1.0 months</i>	<i>Economist</i>	<i>\$6,000</i>
<i>Entry of data into database</i>	<i>1.0 months</i>	<i>Data entry</i>	<i><u>\$2,000</u></i>
<i>Total Staff Cost/or Consulting, annual</i>			<i>\$23,000</i>

Costs of Data Verification The system of data verification will involve both a preliminary review of data submissions (which will be used to assess potential inaccuracies), non-random audits (of submissions believed to be inaccurate), and random audits. The first year of the program is likely to be more costly than later years, as protocols are developed for identifying potentially inaccurate submissions and to select firms to audit (both randomly and non-randomly). The verification system under this program is adapted from the verification system developed for the crab rationalization data collection program. That verification of 4 years of data under that program is expected to cost approximately \$150,000 (plus travel costs for the auditors). The costs under that program can be expected to greatly exceed the costs under this program for two reasons. First, that program is the first of its kind. This program should be able to draw on the experiences from the crab rationalization data verification to reduce costs. A second reason that costs should be substantially less is the relatively small number of participants in the Non-AFA Trawl CP sector. With so few participants, it is possible that non-random audits would be unnecessary after the first few years of the program (as data irregularities are rectified). In addition, it is possible that the random audits process could be streamlined, with audits performed once every few years. These audits could cover multiple years of data, but could be done less frequently, to realize efficiencies in the process. At this stage, it is not possible to forecast costs of verification precisely, but a reasonable WAG estimate of the annual costs for the first few years of the program is approximately \$35,000. This cost could decline substantially after the first few years of the program.

### **3.3 Expected Effects of the Alternatives**

This section provides the analysis of the three structural alternatives: 1) Status Quo/No Action, 2) multiple cooperative program, and 3) single cooperative program. Assessing the effects of the alternatives involves some degree of speculation. In general, the effects arise from the actions of individual participants in the fisheries under the incentives created by the different alternatives. Predictability of these individual actions and their effects is constrained by the novelty of the program under consideration and incompleteness of information concerning the fisheries, including the absence of complete economic information and well-tested models that predict behavior under different institutional structures. In addition, unpredictable factors, such as conditions in different fisheries and of the different stocks and condition of the overall economy, could influence the responses of the participants under the alternatives.

To examine the impacts of the alternatives, the analysis begins by considering practices and participation in harvesting and processing that are likely to arise under the various management systems proposed by the alternatives. These differences in fishing and processing practices, together with the management changes, drive environmental, economic, and socioeconomic impacts. Through this methodology, all of

the different impacts are brought to light allowing the reader to determine the significant of impacts of the different alternatives.

### **3.3.1 Effects on Harvest Participation and Fishing Practices**

This section provides the analysis of status quo and two strawman alternatives. Although the strawman alternatives differ in several respects, the primary difference is in the cooperative structures. The first alternative is status quo (no action). The second alternative is a cooperative alternative that would allow multiple cooperatives to be formed within the sector. The third alternative is a cooperative alternative that would authorize the formation of a single cooperative in the sector. The fourth alternative is intended to be the preliminary preferred alternative. The specific differences of these alternatives are described in below.

**Table 3-92 Comparison of the Alternatives**

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Primary Target Species to be Allocated</b>	None	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch
<b>Allocation to Sector</b>	None	<p><u>Allocation:</u> Sector's retained catch over all retained catch, 1998-2002</p> <p><u>Management:</u> Hard cap</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 30% to sector and 70% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Sector's retained catch over all total catch, 1995-2003</p> <p><u>Management:</u> Soft cap; rollover to sector</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 100,000 mt threshold to be divided 70% to sector and 30% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sideboards for yellowfin sole threshold fishery</p>	<p><u>Allocation:</u> Yellowfin sole 82.5%, rock sole 97%, flathead sole 98%, EAI/BS and CAI Atka mackerel 98% reduced to 90% over a 4-year period at 5% per year starting in second year. WAI Atka mackerel 100%. EAI and CAI AI POP 95% reduced to 90% the second year. WAI POP 98%.</p> <p><u>Management:</u> Hard cap for sector and an ICA for fixed gear sectors and trawl limited access fishery; rollover of allocated species and PSC to H&amp;G sector, halibut PSC rollover discounted 5%</p> <p><u>Yellowfin sole:</u> all yellowfin sole in excess of 125,000 mt threshold to be divided 60% to H&amp;G sector and 40% to the general limited access fishery; allow rollovers to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards in the threshold fishery</p>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Allocation of Prohibited Species</b>	PSC allocated by target fishery and shared among all trawl vessels	Sector allowance based on average historic PSC usage in directed fishery for allocated primary species plus Pacific cod, 1998-2002	Sector allowance based on: a) average PSC usage, by fishery, of all trawl in each PSC fishery group for allocated primary species plus Pacific cod, 1995-2003 b) apply sector proportion as determined above c) reduce by 5%	Two halibut PSC options 1) H&G sector allowance based on average historic usage of PSC from 2000-2004. Reduce calculated halibut PSC allowance to 80% of apportionment amount phased in at 5% per year starting in the second year. 2) Allocate PSC based on sector's percentage allocations of Amendment 80 species multiplied by trawl PSC amounts apportioned to target species staying within 2,200 mt minimum and 2,450 mt maximum.  Crab PSC apportionment amounts are 37.52% red king crab, 61.44% <i>C. opilio</i> , 52.64% for Zone 1 <i>C. bairdi</i> , and 29.59% for Zone 2 <i>C. bairdi</i> . Reduce crab PSC allocations to 80% of apportionment amount phased in at 5% per year starting in second year.
<b>Sector Eligibility</b>	determined by Congress	Determined by Congress	determined by Congress	determined by Congress
<b>Cooperative formation</b>	None	<u>Threshold:</u> 15% minimum of eligible participants and must be comprised of at least two separate entities	<u>Threshold:</u> 67% minimum of eligible vessels and must be comprised of at least three separate entities	<u>Threshold:</u> 30% minimum of eligible vessels and must be comprised of at least three separate entities
<b>Cooperative allocation</b>	None	<u>Allocation:</u> based on retain catch history, 1998-2002	<u>Allocation:</u> based on total catch history, 1995-2003 drop 3	<u>Allocation:</u> based on total catch history, 1998-2004 drop 2

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>Excessive share limits</b>	None	No limit on consolidation	No single person can hold no more than 50% of the catch history of an allocated species	No single person can hold no more than 30% of the catch history of an allocated either on an aggregate basis Initial allocation grandfathered  No vessel may harvest more than 10% of the entire sector allocation. Initial allocation grandfathered

	Alternative 1 (Status Quo)	Alternative 2	Alternative 3	Alternative 4
<b>Sideboards</b>	None	<p><u>For sector:</u> established based on participation in other fisheries, 1998-2002; for GOA halibut PSC based on usage by area, 1998-2002; only vessels that have GOA wide weekly participation in the flatfish fisheries over the threshold during the qualifying period would be eligible to participate in the GOA flatfish fisheries</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><u>For sector:</u> established based on participation in other fisheries, 1995-2003; for GOA halibut PSC based usage by area, 1995-2003</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><u>For sector:</u> <b>BSAI</b> None</p> <p><b>GOA</b></p> <ol style="list-style-type: none"> <li>1) Eligible to participate in the GOA flatfish fisheries based on 10 weeks of participation in flatfish fishery using either 1998-2004. May exempt sector vessel with significantly higher participation in GOA flatfish fisheries.</li> <li>2) Sector vessels that have fished 80% of their weeks in the GOA from 2000 to 2003 will be exempt from GOA halibut sideboards</li> <li>3) Gulf-wide halibut sideboards calculated based on actual usage for each target fisheries within each area for the Non-AFA Trawl CP sector using 1998-2004</li> <li>3) GOA pollock, Pacific cod, and directed rockfish sideboards for the Non-AFA Trawl CP sector based on retained catch of the sector as a percent of retain catch of all sectors from 1998-2004</li> </ol>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
<b>CDQ</b>	7.5% of groundfish and prohibited species (except herring) allocated to CDQ multispecies fishery	10% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	15% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	10% of allocated species and secondary species caught (except Pcod) taken incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation

Assessing the effects of the alternatives involves some degree of conjecture. In general, the effects arise from the actions of individual participants in the fisheries under the incentives created by the different alternatives. Predictability of these individual actions and their effects is constrained by the novelty of the program under consideration and incompleteness of information concerning the fisheries, including the absence of complete economic information and well-tested models that predict behavior under different institutional structures. In addition, unpredictable factors, such as conditions in different fisheries and of the different stocks and condition of the overall economy, could influence the responses of the participants under the alternatives.

To examine the impacts of the alternatives, the analysis begins by considering practices and participation in harvesting and processing that are likely to arise under the various management systems proposed by the alternatives. These differences in fishing and processing practices, together with the management changes, drive environmental, economic, and socioeconomic impacts. Through this methodology, all of the different impacts are brought to light allowing the reader to determine the impacts of the different alternatives.

### **3.3.2 Effects on the Non-AFA Trawl CP Sector**

Patterns and levels of harvester participation in the BSAI groundfish fisheries are likely to vary under the different alternatives.

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

Provided below is a brief description of the current management of the non-pollock groundfish fisheries. For more detail of the BSAI groundfish fisheries addressed under this action, please see the background section of the Regulatory Impact Review (Section 3.1). That section includes a description of the fisheries, description of the Non-AFA Trawl CP sector, the fishery value for the BSAI groundfish fisheries, community information, and background information on the Western Alaska Community Development Quota (CDQ) program. Overall, maintaining status quo is likely to result in the continuation of existing fishing practices and patterns.

#### Current Management of the Fisheries

The BSAI management area encompasses the U.S. Exclusive Economic Zone (EEZ) of the eastern Bering Sea and that portion of the North Pacific Ocean adjacent to the Aleutian Islands west of 170° W. longitude. The northern boundary of the Bering Sea is the Bering Strait, defined as a straight line from Cape Prince of Whales to Cape Dezhneva, Russia.

The A season for the trawl fisheries under consideration in this action is from January 20 through April 1; the B season is from April 1 through June 10; and finally, the C season is from June 10 to November 1.

Both the trawl and non-trawl fisheries are prosecuted from a single TAC. The TAC specifications for the primary allocated species and PSC specifications are recommended by the Council at its December meeting. The recommendations are based on Stock Assessment Fishery Evaluation reports prepared by Council BSAI Groundfish Plan Team. The Secretary, after receiving recommendations from the Council, determines up to 2 years of TACs and apportionments. The TAC for each of the allocated species is reduced by 15 percent to form the reserve and CDQ allocations. One-half of the reserve is used for CDQ allocations. The remaining portion of the reserve is used for: a) correction of operational problems in the fishing fleets, to promote full and efficient use of groundfish resources, b) adjustments of species TACs according to the condition of stocks during fishing year, and c) apportionments.

Since 1994, the Atka mackerel quota has been split during the annual specifications into three separate area allocations based on the most recent biomass estimates. The three areas are the Bering Sea/eastern Aleutian Islands (Bering Sea and Area 541), the central Aleutian Islands (area 542), and the western Aleutian Islands (Area 543). In 1999, Area 542 and Area 543 were further split into critical habitat and non-critical habitat area due to Steller sea lion concerns. In addition, up to 2 percent of the Atka mackerel

TAC in the eastern Aleutian Islands District/Bering Sea subarea can be allocated to vessels using jig gear in the areas noted above. In 2005, the Council recommended and NMFS approved allocating 1 percent to vessels using jig gear.

A federal groundfish license is required for vessels participating in any federal BSAI groundfish fishery, other than fixed gear sablefish. Those exempt from the license requirement are vessels fishing in State of Alaska waters, vessels less than 32' LOA, or jig gear vessels less than 60' LOA using a maximum of 5 jig machines, one line per machine, and a maximum of 15 hooks per line. The LLP limits the number, size, and specific operation of vessels that may be deployed in certain groundfish fisheries under the Council's jurisdiction. For a person to qualify for an LLP permit, the person must own a vessel that has documented harvests of groundfish during two periods, the general qualification period and the endorsement qualification period. In addition to the area/species endorsements, the LLP license is designated for use on either a catcher/processor or catcher vessels and the vessel's length category. LLP licenses may be transferred subject to the vessel designations and area/species endorsements.

Table 3-93 shows the number of LLP licenses issued for the BSAI by trawl sector. There are 64 trawl licenses designated as catcher processors that are endorsed for the BSAI area. Twenty of these licenses are currently registered to AFA trawl CP vessels operating in the BSAI. The remaining 44 trawl CP licenses are either currently registered to Non-AFA Trawl CP vessels that currently operate in the BSAI and/or GOA or they are registered to other vessels but are not being used in either area. Of the 44 Non-AFA trawl CP licenses, 22 also have Gulf of Alaska endorsements. There are 152 trawl licenses designated for catcher vessels that are endorsed for BSAI area. One hundred and two of these licenses are currently registered to AFA Trawl catcher vessels leaving 50 licenses that are registered to Non-AFA Trawl catcher vessels.

**Table 3-93 BSAI trawl LLP licenses by trawl sector**

Sector	BS only LLP	AI only LLP	BSAI LLP	Total License
AFA Trawl CP	1	0	19	20
Non-AFA Trawl CP	6	1	37	44
<b>Total Trawl CP Licenses</b>	<b>7</b>	<b>1</b>	<b>56</b>	<b>64</b>
AFA Trawl CV	59	0	43	102
Non-AFA Trawl CV	44	2	4	50
<b>Total Trawl CV Licenses</b>	<b>103</b>	<b>2</b>	<b>47</b>	<b>152</b>

Source: NMFS Groundfish LLP database. Current as of July 13, 2005.

Inseason management credits both directed harvest and incidental harvest against the TAC for groundfish species to ensure they are not over harvested. The directed fishery for any groundfish species is closed when the directed fishing amount is harvested, reserving the remainder of the TAC for incidental catch in other groundfish fisheries. NOAA Fisheries allows vessels to retain incidental catch of groundfish species (if the TAC has not been reached) taken in other directed fisheries that are open, up to the maximum retainable amount (MRA). If the fishery is closed to directed fishing and the TAC is reached, NOAA Fisheries issues a prohibition on retention for that species and all catch of that species must be discarded. If a fishery is closed to directed fishing for one of these species, the ABC has been taken, and the harvest is approaching the overfishing level, then NOAA Fisheries could close target fisheries that incidental harvest that species.

Pacific halibut, Pacific herring, Pacific salmon and steelhead, king crab, and Tanner crab are prohibited species and should be avoided while fishing for groundfish and must be returned to the sea with a minimum of injury except when their retention is authorized by other applicable law. PSC is apportioned between target fishery categories: trawl and non-trawl fisheries. The halibut PSC limit for trawl gear is

currently 3,675 mt. The PSC limits for *C. bairdi* and *C. opilio* crab are dependent upon the abundance of these species of crab, while the PSC limit for red king crab is dependent upon the number of mature female red king crabs.

All vessels participating in the groundfish fisheries are required to retain all catch of pollock and Pacific cod, when directed fishing for those species is open, regardless of gear type employed and target fishery. When directed fishing for an IR/IU species is prohibited, retention of that species is required only up to any maximum retainable amount in effect for that species. No discarding of whole fish of these species is allowed, either prior to or subsequent to that species being brought on board the vessel except as required in the regulations. At-sea discarding of any processed product from any IR/IU species is also prohibited, unless required by other regulations. The no action alternative also includes the revision of the pollock MRA in the BSAI, which was implemented on June 2004. Under this revision, the enforcement period for pollock harvest in the BSAI was modified from enforcement at anytime during a fishing trip to enforcement at the time of offload.

All IR/IU species caught in the BSAI must be either 1) processed at sea subject to minimum product recovery rates or 2) delivered in their entirety to onshore processing plants for which similar processing requirements are implemented by State regulations.

Analysis of the status quo assumes the groundfish retention standards (GRS) are implemented. In October 2002, the Council initiated Amendment 79 to meet the Council's stated goals of reducing bycatch, minimizing waste, and improving utilization of fish resources to the extent practicable. In June 2003, the Council adopted Amendment 79 to the FMP, which authorizes groundfish retention standards as a tool for further increasing the retention and utilization of groundfish and responding to bycatch reduction goals described in National Standard 9. Amendment 79 was approved by the Secretary of Commerce on August 31, 2005. Also in June 2003, the Council adopted a GRS program for all Non-AFA trawl C/Ps that are used to harvest BSAI groundfish. The GRS program was published in the Federal Register on April 6, 2006 (71 FR 17362). The GRS program establishes a minimum GRS. The program would phase in the GRS over a four-year period beginning in 2008, starting at 65 percent and increasing to 85 percent in 2011. Only Non-AFA Trawl CP vessels greater than or equal to 125 ft LOA to comply with the GRS. The standard would be applied (and subject to enforcement for violations) at the end of the year.

Including recent changes for determining the MRA for pollock, which now is determined at the end of each offload rather than at any point during the trip, coupled with the GRS, the discard rate for the Non-AFA Trawl CP sector is expected to be reduced. Information in Table 3-94 shows the expected increases in the additional retained catch and product weight, and the increase in retained product weight as a percentage of total sector production. Also shown are the number of boats affected by the GRS, the combined retention rate of the fleet as a whole, and the combined retention rate of vessels affected by the GRS. Overall, the table shows that due to increased retention resulting from the MRA change during the first two years of the program, the GRS is expected to have almost no effect on retention rates in the fleet. Only after 2007 do retention rates increase due to the GRS.

**Table 3-94 Expected affects to the Non-AFA Trawl CP sector from Amendment 79 and pollock MRA enforcement changes**

	2005	2006	2007	2008	2009	2010
GRS (Percentage)	-	-	65	75	80	85
Additional Retained Catch	0	0	1,799	17,722	33,539	52,913
Additional Retained Product	0	0	1,146	11,287	21,361	34,337
Number of GRS Affected Boats	0	0	0.7	6.5	12.3	19.8
Retention Rate of GRS Affected Boats	72.1	72.1	72.5	76.3	80.1	85.0
Retention Rate of HT-CP Fleet	69.9	69.9	70.2	73.4	76.6	80.6

Source: Analysis of BSAI Amendment 79, July 2005

Overall, the preferred alternative would lead to a projected retention rate of 80.6 percent across the entire Non-AFA Trawl CP sector and 85 percent across affected vessels. The gain in retention is the result of lower discards of non-pollock groundfish. Additional costs would be incurred by vessels required to comply with the GRS to allow for monitoring and enforcement of compliance. Seven of the qualified vessels would be required to invest in flow scales at an approximate cost of \$75,000 to \$300,000 per vessel, while all sixteen vessels would be required to carry an extra observer at a cost of roughly \$82,000 per year per vessel.

### **Alternatives 2, 3, and 4**

#### **Allocation of primary species**

Alternatives 2, 3, and 4 would allocate yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Island Pacific Ocean perch to the Non-AFA Trawl CP sector.

For Alternative 2, the allocation of the primary target species will be a percent of the annual TAC equal to retained catch of the Non-AFA Trawl CP sector divided by the retained catch by all sectors for the years 1998 to 2002. The remaining portion of the primary target species not allocated will be reserved for the general limited access fishery for all other trawl vessels with catch history during 1995-2004 and having the appropriate LLP endorsements. Under Alternative 3 the allocation will be based on retained catch of the sector divided by the total catch by all sectors for the years 1995 to 2003. The remaining portion of the primary target species not allocated will be reserved for the general limited access fishery.

Table 3-95 shows the allocation of the primary species to the Non-AFA Trawl CP sector and the general limited access fishery under Alternatives 2 and 3.

**Table 3-95 Allocations of Amendment 80 species under Alternative 2 and 3**

<b>Alternative 2</b>		
<b>Allocated Species</b>	<b>Non-AFA Trawl CP sector</b>	<b>General limited access fishery</b>
	Allocation percent	Allocation percent
<b>Atka mackerel</b>	99.7%	0.3%
<b>Flathead sole</b>	96.8%	3.2%
<b>AI POP</b>	100%	0.0%
<b>Rock sole</b>	95.4%	4.6%
<b>Yellowfin sole</b>	88.5%	11.5%
<b>Alternative 3</b>		
<b>Allocated Species</b>	<b>Non-AFA Trawl CP sector</b>	<b>General limited access fishery</b>
	Allocation percent	Allocation percent
<b>Atka mackerel</b>	84.3%	14.6%
<b>Flathead sole</b>	63.1%	37.4%
<b>AI POP</b>	85.4%	13.8%
<b>Rock sole</b>	37.0%	63.9%
<b>Yellowfin sole</b>	59.8%	42.1%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

Under Alternative 2, the allocation percentages to the Non-AFA Trawl CP sector are expected to be sufficient to keep the sector's groundfish catch levels about the same as their historic catch. However, the remaining portion of groundfish reserved for the general limited access fishery in many cases would be less than historic harvests and could disadvantage members of other sectors, particularly non-AFA catcher vessels. Under these alternatives, the allocation to the general limited access fishery would be less than the combined AFA Trawl CP and CV sideboards for each of the allocated species. Recall that the sideboards are not an allocation. Sideboards limit the total amount of a species a sector that has been "rationalized" may harvest. Persons operating in the general limited access fishery will need to compete against other participants in the AFA sectors to harvest these species. During the years 1995 to 1997, participants in the AFA Trawl CP and CV sectors participated in these fisheries in larger numbers.

However, in recent years, the number of vessels participating in these fisheries has declined. One of the primary reasons, potentially, for the decline in the number of AFA Trawl CP and CV participants is the increase in pollock TAC. As the pollock TAC increases, relative to the species allocated under this program, the participants in the AFA Trawl CP and CV sectors focused more on the pollock fishery. However, if pollock declines, AFA vessels could shift their effort to species allocated under this action, if it is profitable. A second reason is that vessels that historically participated in some of these fisheries were retired as part of the AFA. Given the small allocation to the general limited access fishery, participants will have little or no opportunity to expand their harvest in these fisheries, if the pollock and Pacific cod TAC were to decline.

For Alternative 3, the groundfish allocation percentages to the Non-AFA Trawl CP sector would result in allocation at current TAC that are below their current retained catch of these species. In contrast, the allocation amounts of some species (e.g., flathead sole, AI Pacific Ocean perch, rock sole, and yellowfin sole) to the general limited access fishery under Alternative 3 at current TACs would be far greater than the current catch by participants outside of the Non-AFA Trawl CP sector. In addition, the allocations for these species in some cases greatly exceed the combined AFA Trawl CP and CV sideboards. Without substantial increases in effort by Non-AFA Catcher Vessels, large portions of the allocation to the general limited access fishery would go unharvested. For example, if the Council selected this allocation option for rock sole, the allocation to the general limited access fishery would be 63.9 percent of the TAC. Assuming the AFA CP and CV sector harvested rock sole up to their sideboards (7.11 percent), the remaining allocation available for the Non-AFA Trawl CV sector would be 56.79 percent. However, the Non-AFA Trawl CV sector has traditionally harvested very little rock sole. Between 1995 and 2002, the number of Non-AFA Trawl catcher vessels that have retained rock sole has ranged between three and five. In 2003, the number increased to eight. In all of those years, the amount retained by the Non-AFA Trawl CV sector has been less than one percent of the total rock sole retained by all sectors.

In April 2006, the Council selected preliminary preferred allocation percentages for the Non-AFA Trawl CP sector (Alternative 4). Allocation percentages selected were 82.5 percent for yellowfin sole, 97 percent for rock sole, and 98 percent flathead sole. For Atka mackerel and AI POP, the Council selected an approach that would phase in the final allocation percentages over a period of years. For the Atka mackerel that period would be four years and for AI POP it would be two years. The allocation percentages for Atka mackerel would start at 98 percent for EAI/BS and CAI and then be reduced 2 percent every year for four years culminating at a 90 percent allocation. For WAI, the Non-AFA Trawl CP sector would be allocated 100 percent of the Atka mackerel. For EAI and CAI AI POP, the allocation would start at 95 percent the first and decrease to 90 percent the second year. For WAI, the allocation to the sector would be 98 percent.

Table 3-96 shows the 2005 allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery for each of the allocated species under Alternative 4. Under this alternative, the allocations of yellowfin sole, rock sole, and flathead sole are similar to the allocations under Alternative 2 in that the allocations are expected to be sufficient to keep the Non-AFA Trawl CP sector's groundfish catch levels about the same as their historic catch. Atka mackerel and AI POP would be slightly less than Alternative 2 at the end of the phase in reduction. The percentages used for the Atka mackerel and AI POP allocations in the table are the final allocation percents. In reviewing the allocation amounts to the trawl limited access fishery in this alternative, it is likely there would be insufficient amounts of Amendment 80 species for a directed fishery with the exception of yellowfin sole. In general, this is indicative of the historical catch history of the trawl limited access participants since before the implementation of the AFA in 2000.

**Table 3-96 Allocations of Amendment 80 species under Alternative 4**

	Yellowfin sole	Rock sole	Flathead sole	POP*			Atka Mackerel*		
				EAI	CAI	WAI	EAI/BS	CAI	WAI
<b>2005 TAC</b>	<b>90,686</b>	<b>41,500</b>	<b>19,500</b>	<b>3,080</b>	<b>3,035</b>	<b>5,085</b>	<b>7,500</b>	<b>35,500</b>	<b>20,000</b>
CDQ allocation (10%)	9,069	4,150	1,950	308	304	509	750	3,550	2,000
AFA CV Sideboard limit	5,281	1,274	886	21	7	0	22	3	0
AFA CP Sideboard limit	18,772	1,382	632	55	3	18	0	3,674	3,600
Jig allocation (1% of Atka mackerel for EAI/BS)	-	-	-	-	-	-	68	-	-
ICA (Assumed 5%)	4,081	1,868	878	139	137	229	334	1,598	900
<b>2005 ITAC</b>	<b>77,537</b>	<b>35,483</b>	<b>16,673</b>	<b>2,633</b>	<b>2,595</b>	<b>4,348</b>	<b>6,348</b>	<b>30,353</b>	<b>17,100</b>
Trawl limited access allocation	13,569	1,064	333	263	259	0	635	3,035	342
Non-AFA Trawl CP Sector allocation	63,968	34,418	16,339	2,370	2,335	4,348	5,714	27,317	16,758

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

\* The percentages used for the Atka mackerel and AI POP allocations are the final allocation percents

Table 3-96 also provides CDQ allocation amounts under the preliminary preferred alternative, AFA sideboard limits for the allocated species, and the ICA. The Council in April 2006, clarified that the ICA is intended for the both the fixed gear sectors and the trawl limited access fishery to account for incidental catch. The Council also clarified that the ICA will be determined prior to allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery. For this analysis, the ICA is set at 5 percent for each of the species for simplicity. Recognize that NOAA Fisheries will set the ICA for each of the species on an annual basis and the amount could be greater or less than the assumed 5 percent used in this analysis. See the ICA section below for more details on how NOAA Fisheries will manage the ICA. The Council also clarified in April 2006 that the sideboard limits for the AFA sectors would be determined after the CDQ allocations. Based on clarification, it would appear that the sideboards would be ineffectual since the sideboard is greater than the allocation to the trawl limited access fisheries for most of the species. The only exception would be the AI POP and EAI/BS Atka mackerel. In these cases, the sideboard is less than allocation to the trawl limited access fishery. The primary reason for the ineffectiveness of the sideboard limit under this action is due to the Non-AFA Trawl CP sector receiving allocations of these species. One of the primary purposes of the AFA sideboards was to prevent the AFA sectors from expanding beyond their historic catch history in these fisheries and potentially harming the Non-AFA Trawl CP sector.

### Rollovers

Alternatives 3 and 4 include a provision that would allow NOAA Fisheries to rollover any portion of the general limited access fishery allotment to the Non-AFA Trawl CP sector that is projected to go unused by a specific date. This component of the program may help to improve the Non-AFA Trawl CP sector's access to fish that would otherwise go unharvested. However, there are two aspects of the rollover provision that could decrease the sector's benefits relative to a direct allocation early in the year. The first issue is timing of the fisheries. If the 63.9 percent of the TAC is allocated to the general limited access fishery, as shown under this option, it is possible that much of that rock sole TAC will be available for rollover, given historic rock sole usage by vessels in the general limited access. The rock sole fishery historically has occurred in the late winter months of late January, February, and early March. These fishing times correspond to when the trawl fishery is opened in the BSAI, when rock sole roe is usually at its highest quality, and when halibut PSC is still available for the rock sole/other flatfish/flathead sole complex. Some members of the Non-AFA Trawl CP sector begin their fishing year in the Atka mackerel or Pacific cod fishery. Other members start in the rock sole fishery. When the roe is at its prime, vessels tend to shift from the other fisheries into the rock sole fishery. Vessels then exit the rock sole fishery when the roe value declines, the TAC is harvested, or the halibut is used. If the allocation under Amendment 80 results in small amounts of the TAC being available early in the year, it is like that the

Non-AFA Trawl CP sector's rock sole allocation will be quickly harvested and it will be forced to stop fishing earlier than if the allocation was larger. If the other sectors do not harvest their portion of the TAC and large amount of quota had to be rolled over late in the year, it may be of less value to the fleet than if it was available earlier.

Halibut PSC release times are also a good indicator of when the fleet places the most value on harvesting a species. Over 57 percent of the halibut PSC for the rock sole fishery is available for the January 20 through April 1 time period. Smaller releases of halibut PSC are made later in the year. Given that halibut is often a limiting factor in the rock sole fishery, the amount of halibut each sector is given is important. Alternative 3 would give the Non-AFA Trawl CP sector a smaller share (29 percent) of the TAC than Alternative 2 (96 percent). Since the halibut allocation under Alternative 3 is based on the percentage of groundfish they are allocated, their halibut PSC would tend to constrain their rock sole harvest more than under Alternative 2, where it is based on historic PSC usage. This constraint would be amplified by the fact that the roll-over only covers groundfish species, so no additional halibut PSC would be made available to the Non-AFA Trawl CP sector. Halibut assigned to the cooperative from other fisheries would have to be used to harvest the rock sole. However, the harvests of other species are likely to face similar problem.

Alternative 4 includes a provision that would discount any rollover of halibut PSC to the Non-AFA Trawl CP sector by 5 percent. The 5 percent would not be utilized for that year and would remain in the water.

### ***Species Allocation Management***

Under Alternative 2, the allocation of the primary species to the Non-AFA Trawl CP sector would be managed as a hard cap, whereas under Alternative 3 the allocated would be managed as a soft cap. Under Alternative 4, the allocation of the primary species to the Non-AFA Trawl CP sector would be managed as a hard cap and for the general limited access fishery the fisheries would be managed using an ICA.

Under a hard cap, when a cooperative allocation of a species is fully harvested, all directed fishing for that species closes for the cooperative, as well as any fisheries that catch the species incidental. Under a system of hard caps, cooperative members are responsible for staying within their allotments through internal controls. In general, individual cooperatives are thought to manage their allocations in a manner that will benefit its participants the most (whether in the directed fishery or as incidental catch in other fisheries). In comparison, soft caps would provide more flexibility, but soft caps are not meaningful when applied to cooperative management system. However a soft cap applied to the limited access fishery would allow participants in that fishery some flexibility. Under this type of management, when the general limited access fishery has fully harvested their directed fishing allowance of an allocated species, fisheries in which the limited species is caught incidentally could be left open with the limited species under PSC status (requiring its discard). This flexibility could be important under Alternative 3 where 67 percent of eligible participants would be needed to form a cooperative due to some sector members may elect not to join a cooperative. Allocation management of the general limited access fishery would stay as currently managed—soft cap system.

Alternative 4 also includes an ICA provision in the event that the allocation of an Amendment 80 species to the general limited access fishery is inadequate to support other directed fisheries and to ensure that directed fisheries in the fixed gear sectors for species not allocated in this proposed action are not affected by the allocations to the Non-AFA Trawl CP sector. The ICA would be set based on historic incidental harvest of species caught incidentally in other directed fisheries in recent years. NOAA Fisheries will likely set the ICA liberally (i.e., relatively high) to ensure that incidental catch of species allocated under this action do not result in closures of other directed groundfish fisheries. The specific amount of the ICA would vary year to year depending on directed fishery openings, TAC, and recently observed incidental catch rates. Using these ICAs, the agency would initially manage harvests of these species using the MRA. If catch rates indicate that an ICA was inadequate to support incidental catch through the year, NOAA Fisheries would employ its usual management measure of putting a species on prohibited species

status to deter incidental catch and prevent incidental catch from resulting in a premature closure of other directed fisheries.

### ***Yellowfin sole threshold***

Under Alternatives 2, 3, and 4 when ITAC exceeds a specific threshold, yellowfin sole will be distributed differently than under the primary allocation formula. The threshold for Alternatives 2 and 4 is 125,000 mt, whereas for Alternative 3 the threshold is 100,000 mt. Under Alternative 2, any portion of the ITAC exceeding the 125,000 mt threshold would be allocated in the following manner: 30 percent to the Non-AFA Trawl CP sector and 70 percent to the general limited access fishery. At or below the 125,000 mt threshold, the ITAC would be allocated as determined from the primary allocation formula, 88.5 percent to the Non-AFA Trawl CP sector and 11.5 percent to the general limited access fishery. Under Alternative 3, any portion of ITAC exceeding the 100,000 mt threshold would be allocated as the following: 70 percent to the Non-AFA Trawl CP sector and 30 percent to the general limited access fishery. The yellowfin sole ITAC up to the threshold would be allocated as 52 percent to the Non-AFA Trawl CP sector and 48 percent to the general limited access fishery. Finally, for Alternative 4, any portion of ITAC exceeding the 125,000 mt threshold would be allocated as 60 percent to the Non-AFA Trawl CP sector and 40 percent to the trawl limited access fishery.

Table 3-97 provides allocation amounts for both the Non-AFA Trawl CP sector and trawl limited access fishery for Alternative using different TAC amounts. For example, at a TAC of 125,000 mt, after the CDQ and ICA deductions, the ITAC would be 106,875 mt, assuming a 5 percent removal for an ICA. Since the ITAC is below 125,000 mt, the distribution of yellowfin sole would be based on 82.5 percent for the Non-AFA Trawl CP sector (88,172 mt) and the 18.5 percent for the trawl limited access fishery (18,703 mt). At a TAC of 150,000 and deducting CDQ allocations and an ICA, the ITAC would be 128,250 mt. The portion of ITAC below the 125,000 threshold would be distributed as 82.5 percent for Non-AFA Trawl CP sector and 18.5 percent to the trawl limited access fishery. The 3,250 mt above the 125,000 mt threshold would be distributed 60 percent to the Non-AFA Trawl CP sector (1,950 mt) and 40 percent to the trawl limited access fishery (1,300 mt).

**Table 3-97 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 4.**

<b>TAC</b>	<b>125,000</b>	<b>140,000</b>	<b>150,000</b>	<b>160,000</b>	<b>170,000</b>
CDQ allocation (10%)	12,500	14,000	15,000	16,000	17,000
ICA (Assumed 5%)	5,625	6,300	6,750	7,200	7,650
<b>ITAC</b>	<b>106,875</b>	<b>119,700</b>	<b>128,250</b>	<b>136,800</b>	<b>145,350</b>
Non-threshold Trawl limited access allocation	18,703	20,948	21,876	23,940	25,436
Non-threshold Non-AFA Trawl CP Sector allocation	88,172	98,753	103,124	112,860	119,914
Threshold allocation to trawl limited access			1,300	4,720	8,140
Threshold allocation to Non-AFA Trawl CP sector			1,950	7,080	12,210
<b>Total allocation for trawl limited access</b>	<b>18,703</b>	<b>20,948</b>	<b>23,176</b>	<b>28,660</b>	<b>33,576</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>88,172</b>	<b>98,753</b>	<b>105,074</b>	<b>119,940</b>	<b>132,124</b>

Under Alternative 2, the yellowfin sole threshold program could provide the opportunity for the AFA Trawl CP and CV sectors to expand their harvest of yellowfin sole in periods when pollock TAC declines relative to yellowfin sole, assuming markets conditions remain relatively stable for both fisheries. As noted in Section 3.2.10, there appears to be an inverse relationship between pollock and yellowfin sole TACs during the 1995 to 2003 period. This inverse relationship is in part due to the influence of the 2 million metric ton cap in the BSAI on these two fisheries. Since increases in pollock TAC leave less room under the 2 million metric cap, other BSAI TAC must decrease to ensure that the total BSAI removals remains under the 2 million mt limit. As a result, species like yellowfin sole have their ITAC set at levels below those that could be supported by their biomass levels. During periods where the pollock TAC has declined enough to allow yellowfin sole ITAC to increase above the threshold, 70 percent of the portion

of yellowfin sole ITAC above the threshold will be allocated to the general limited access fishery, providing an increasing opportunity for participants in the general limited access fishery to expand their harvest of yellowfin sole. For example, at a yellowfin sole ITAC of 150,000 mt, the total yellowfin sole allocated to the general limited access fishery is 31,898 mt or 21 percent of the ITAC, up from 11.5 percent (or 14,375 mt) at or below the threshold. At an ITAC of 175,000 mt, the total yellowfin sole allocated to the general limited access fishery is 49,398 mt or 28 percent of the ITAC, again up from 11.5 percent at or below the threshold.

The threshold program developed in Alternative 3 does not provide the same level of opportunity for the expansion of harvest by the AFA CV and CP sectors compared to Alternative 2. As noted above, only 30 percent of the yellowfin sole ITAC above the threshold is distributed to the AFA CV and CP sectors. Compared to the allocation of yellowfin sole below the threshold (48 percent), the distribution of yellowfin sole to the AFA CP and CV sectors above the threshold diminishes as yellowfin sole TAC increases.

Under Alternative 4, the threshold program provides less opportunity for expansion of harvest by the general limited access fishery participants than Alternative 2 but more opportunity than Alternative 3. The allocation of yellowfin sole below the 125,000 mt threshold to the general limited access fishery under Alternative 4 is 18.5 percent. During periods when yellowfin sole ITAC exceeds 125,000 mt, the distribution of yellowfin sole above the threshold will increase to 40 percent. At the same time, the redistribution of yellowfin sole above the threshold to the Non-AFA Trawl CP sector will decline from an 82.5 percent to 60 percent.

Under Alternatives 2, 3, and 4, there would be no yellowfin sole sideboards for the AFA CP and CV sectors for yellowfin sole distributions associated with the threshold program. This would allow more opportunity for the AFA CP and CV sectors to expand their harvest of yellowfin sole during periods of low pollock TAC.

Constraining the success of threshold program is the lack of halibut PSC allocations associated with the yellowfin sole threshold distribution. Both alternatives do not allow reallocating halibut PSC to accommodate threshold distributions, so both the Non-AFA Trawl CP sector and the AFA CP and CV sectors would have to rely on their initial allowance of halibut PSC. In general, there is a potential that both groups may not have enough halibut PSC to harvest the entire threshold distribution of yellowfin sole.

Alternatives 2, 3, and 4 include a rollover provision for unharvested threshold yellowfin sole from the trawl limited access fishery to the Non-AFA Trawl CP sector. The Regional Administrator would reallocate any projected unharvested allocation of yellowfin sole in the general limited access fishery to the Non-AFA Trawl CP sector. The reallocation of the quota to the Non-AFA Trawl CP sector would be apportioned based on the division of the sectors allocation of the primary species. Reducing the success of the rollover option is the absence of halibut PSC. Trawl sectors will have to rely on their initial allocation of halibut PSC to harvest any rollover portions.

### ***CDQ allocation***

Under Alternatives 2 and 4, the CDQ Program would be allocated 10 percent of the annual TAC for each primary target species. The program also would receive 10 percent of the TAC for the incidental catch species (with the exception of Pacific cod) taken in these target species. These allocations would be removed from TACs prior to any allocations that are made to other industry sectors. An increase to 10 percent would allocate an additional 2.5 percent of annual TACs to the CDQ Program. Increasing the percentage allocation of primary target species would provide the CDQ Program access to an additional portion of the BSAI flatfish fishery, which could increase program revenues to the benefit of CDQ communities. Increasing the percentage allocations of incidental catch species would help ensure that CDQ groups did not fully harvest available incidental catch species quotas before they had fully harvested

their primary target species. Neither pollock nor squid CDQ percentage allocations would be increased, for reasons explained under Component 2. The CDQ percentage allocations of prohibited species would be increased to 10 percent, which is proportional to the allocations for primary species. Chinook salmon and herring PSQ percentage allocations would not be increased, as described under Component 5.

Alternative 3 would allocate 15 percent of the annual TACs for each primary target species to the CDQ Program, along with 15 percent of the annual TACs for the incidental catch species (except for Pacific cod) caught with primary species. These allocations would be removed from TACs prior to any allocations that are made to other industry sectors. This increase is double the existing CDQ percentage allocations of 7.5 percent. Increasing the percentage allocation of primary target species would provide the CDQ Program access to an additional portion of the fisheries prosecuted by non-AFA trawl catcher/processors. This, in turn, could increase program revenues to the benefit of CDQ communities. Increasing the percentage allocations of incidental catch species would help ensure that CDQ groups did not fully harvest available incidental catch species quotas before they had fully harvested their primary target species. Neither pollock nor squid CDQ percentage allocations would be increased, for reasons explained under Component 2. The CDQ Program percentage allocations of prohibited species would be increased to 15 percent, which is proportional to the percentage chosen for primary species. Chinook salmon and herring PSQ percentage allocations would not be increased, as described under Component 5.

### ***PSC allocation***

Under Alternative 2, the PSC allowance to the Non-AFA Trawl CP sector would be based on the historical usage of PSC in all fisheries by the Non-AFA Trawl CP sector from 1998 to 2002 while operating in BSAI. The PSC allowance to the Non-AFA Trawl CP sector under Alternative 3 would be based on the proportion of the Amendment 80 species allocated to the Non-AFA Trawl CP sector plus Pacific cod. These allocation percentages would be adjusted based on the historical PSC usage in the fisheries of the allocated species plus Pacific cod for all trawl participants in those fisheries. The effects of halibut PSC allowance under Alternative 4 is a little more difficult to determine with any certainty given the Council has two options for consideration: 1) allocate halibut PSC based on historical usage of PSC in all fisheries by the Non-AFA Trawl CP sector for year combinations 2002-2004 (Suboption 6.1.1) with a reduction of the initial limit to 80 percent, which would be phased at 5 percent per year for four years starting in the second year of the program; 2) allocate halibut PSC based on the sector's percentage allocations of the Amendment 80 species multiplied by the trawl PSC amounts apportioned to the Amendment 80 species annually (Suboption 6.1.4). To prevent dramatic shifts in PSC apportionment and to limit the potential of one group being allocated a disproportionate amount of halibut PSC, the second method includes minimum and maximum PSC limits for the Non-AFA Trawl CP sector and the trawl limited access fishery. For the Non-AFA Trawl CP sector, the minimum halibut PSC limit would be 2,200 mt and the maximum limit would be 2,450 mt. For the trawl general limited access fishery, the minimum halibut PSC limit would be 950 mt and the maximum limit would be 1,200 mt. However, these amounts are based on 3,400 mt trawl halibut PSC limit which when adjusted for the increase in PSC reserved for the CDQ program will actually be lower. Under the preliminary preferred alternative, the portion of PSC reserved for CDQ program will increase from 7.5 percent to 10 percent. Given the allocation of halibut PSC before the portion reserved for the CDQ program is deducted is 3,675 mt, the amount remaining after the 10 percent deduction of the CDQ reserve would be 3,307 mt. For purposes of the analysis, the minimum and maximum amounts for each group were adjusted to equal 3,307 mt. To do this adjustment, the 93 mt reduction in trawl PSC apportionment was divided evenly between the two groups resulting in a new minimum allocation of 2,153.5 mt and a new maximum allocation of 2,403.5 mt for the Non-AFA Trawl CP sector and for the trawl limited access fishery the amounts would be 903.5 mt and 1,153.5 mt.

Under Suboption 6.1.1 the halibut PSC apportioned to the Non-AFA Trawl CP sector would be 80 percent with the remaining 20 percent apportioned to the trawl limited access fishery. Applying these

percentages to the 3,307 mt trawl halibut apportionment would result in 2,646 mt for the Non-AFA Trawl CP sector and 661 mt of halibut to the trawl limited access fishery. Reducing the 2,646 mt by 20 percent would result in the Non-AFA Trawl CP sector receiving a 2,117 mt halibut limit for use in directed fishing, while the remaining 529 mt of halibut PSC would stay in the water. The disadvantage of this approach is that the PSC amounts are fixed in perpetuity. This reduces the flexibility that may be necessary for both groups to harvest their allocations in the future if TACs change significantly.

Under Suboption 6.1.4 using Council selected percentages, Pacific cod allocation to the Non-AFA Trawl CP sector, and 2005 TAC, the allocation to the Non-AFA Trawl CP sector would be 2,158 mt since the calculated PSC apportionment is slightly above the 2,153.5 mt minimum allocation. This assumes a 90 percent allocation for both AI POP and Atka mackerel across all subareas combined to the Non-AFA Trawl CP sector<sup>48</sup>. The remaining 1,149 mt would be apportioned to the trawl limited access fishery. One of the potential advantages of Suboption 6.1.4 compared to Suboption 6.1.1 is that PSC apportionment will be adjusted annually as the TAC for each of the Amendment 80 species changes relative to one another. To some degree this approach better reflects the dynamic nature of the North Pacific fishery. However, one of the disadvantages of Suboption 6.1.4 compared to Suboption 6.1.1 is there is little room for the Council to take advantage of any potential PSC savings resulting from cooperatives while at the same time staying above the minimum apportionment for the Non-AFA Trawl CP sector (2,153.5 mt). Since the maximum allocation to the Non-AFA Trawl CP sector under this option is 2,403.5 mt, most of the potential PSC saving is shifted to the trawl limited access fishery. For example, the final halibut apportionment limit under Suboption 6.1.1 would be 2,117 mt for a savings of 529 mt of halibut. Under suboption 6.1.4 the apportioned limited would be 2,158 mt and if that amount was reduced to 2,153.5 mt (the minimum apportionment level under this suboption), the halibut PSC savings would be 5 mt.

There are a couple of potential options the Council to choose from to increase PSC savings. One option would be to reduce the minimum allocation to the Non-AFA Trawl CP sector below the 2,153.5 mt. However, lowering the halibut PSC allocation to the Non-AFA Trawl CP sector below the current minimum amount could result in the sector not having enough halibut PSC to harvest all of their allocated Amendment 80 species. Another option would be to have a higher tax on any halibut PSC rollover from the trawl limited access fishery to the Non-AFA Trawl CP sector. The benefit of this option is that it allows the flexibility of having enough PSC for both groups given changes in groundfish TAC in the future but also have the ability to halibut PSC savings when there is excess PSC available to be rolled over. However, the disadvantage of this option is that any halibut PSC savings would be dependent upon the trawl limited access fishery not fully utilizing the halibut PSC allocation.

For crab PSC under Alternative 4, the Council selected percentages based on results from the analysis (see far right column in Table 3-43). The following are the crab PSC limits selected by the Council under this alternative for the Non-AFA Trawl CP sector:

Red king crab	37.52%
<i>C. opilio</i>	61.44%
Zone 1 <i>C. bairdi</i>	52.64%
Zone 2 <i>C. bairdi</i>	29.59%

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<sup>48</sup> Both AI POP and Atka mackerel allocations between sectors will be phased in over time. For EAI and CAI POP, the allocation would be 95 percent the first year and 90 percent the second year. For WAI, the allocation would be 98 percent. For EAI/BS and CAI Atka mackerel, the allocation would be 98 percent the first year, decreasing in 2 percent increments over a four year period to 90 percent. For WAI, 100 percent of the Atka mackerel would be allocated to the Non-AFA Trawl CP sector.

In addition, the crab PSC limit to the Non-AFA Trawl CP sector would be reduced to 80 percent of the initial allocation. This reduction would be phased in gradually at 5 percent per year starting in the second year of the program for a total of four years to phase in the PSC limit reduction.

Under each of the alternatives, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

Table 3-98 provides the percent of the PSC allocation under Alternative 2 by individual PSC species. The PSC allocation to the Non-AFA Trawl CP sector would likely be sufficient to harvest its entire allocation of the groundfish. Although it cannot be determined with any certainty, the remaining halibut PSC for all other trawlers could be insufficient to harvest the allocation of groundfish to the general limited access fishery, if, for example, pollock effort were to decline and Pacific cod effort were to increase.

Table 3-99 provides the PSC allocation under Alternative 3 by the individual PSC species. Although it cannot be determined with any certainty, the PSC allocation percentages under this alternative could result in an allocation to the Non-AFA Trawl CP sector that may be insufficient for harvesting their entire allocation of the target species, if the sector cannot reduce its PSC catch rates substantially from current levels. In contrast, the remaining portion of halibut PSC reserved for all other trawlers should be sufficient to harvest the remaining portion of unallocated groundfish. Alternative 3 also includes a reduction in the calculated PSC apportionments to the Non-AFA Trawl CP sector by an additional 5 percent.

**Table 3-98 PSC allocations based on PSC usage by the Non-AFA Trawl CP sector from 1998 to 2002**

PSC Species	Percent of PSC usage using average of annual percents
Halibut	77.43%
Red king crab	90.37%
C. opilio	94.37%
Zone 1 C. bairdi	90.41%
Zone 2 C. bairdi	94.56%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

**Table 3-99 PSC allocations based on percentages from allocated Amendment 80 species multiplied by the total trawl PSC usage from 1995 to 2002**

PSC Species	Percent of PSC usage using average of annual percents
Halibut	35.59%
Red king crab	34.98%
C. opilio	44.51%
Zone 1 C. bairdi	31.94%
Zone 2 C. bairdi	47.22%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

### ***Sector eligibility***

In November 2004, Congress passed the FY 2005 Appropriations Act, which contained a BSAI Catcher Processor Capacity Reduction Program. The program limits access to the non-pollock groundfish fisheries defined by the Act as the Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock

sole, turbot, or yellowfin sole fisheries in the BSAI. Program language defines the Non-AFA Trawl CP subsector as the owner of each trawl catcher processors—

- (A) that is not an AFA trawl catcher processor;
- (B) to whom a valid LLP license that is endorsed for Bering Sea or Aleutian Islands trawl catcher processor fishing activity has been issued; and
- (C) that the Secretary determines has harvested with trawl gear and processed not less than a total of 150 metric tons of non-pollock groundfish during the period January 1, 1997 through December 31, 2002.

Based on the above language, an estimated 26 vessels appear to qualify for the Non-AFA Trawl CP sector for Alternatives 2, 3 and 4. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

Under each of the alternatives, the vessel's qualifying catch history would be credited to the vessel. This provision would credit the eligible vessel with its own history for the first license assigned to the vessel. In addition, an individual that stacked additional licenses from qualified vessels on the vessel would also receive that history for purposes of determining catch history in apportionment within the Non-AFA Trawl CP sector. In the case when a qualified vessel has sunk, has been lost, becomes inoperable, or becomes ineligible the catch history that was credited to vessel would be transferred to the license that arose from the vessel. Since the BSAI non-pollock groundfish catcher processor buyback legislation is steel based, allowing the catch history of sunk or lost vessel to be transferred to the license that arose from that vessel would allow the catch history to stay in the fishery and be used on another eligible vessel rather than be extinguish.

### ***Cooperative formation***

Under Alternative 2, 15 percent of the eligible vessels would be needed to form a cooperative. In addition, at least three unique entities are required for cooperative formation. Determination of an entity would be based on the 10 percent AFA rule, which states that a 10 percent ownership in a vessel constitutes an entity for purpose of cooperative formation. Since under Alternative 2 there are likely to be 26 eligible vessels, at least four vessels would be needed to form a cooperative. If each of the cooperatives had the minimum required four endorsed LLP licenses, six cooperatives would be formed in the Non-AFA Trawl CP sector. Under Alternative 4, 30 percent of eligible vessels would be needed to form a cooperative, which equates to seven vessels. These two alternatives do not preclude a cooperative from having more than four endorsed LLP licenses. This provision should help to ensure that each vessel is given the opportunity to join a cooperative. Alternatively, the "odd-person-out" may have less of a voice in deciding the terms of the cooperative agreement. It seems less likely that the "odd-person-out" would be worse off under this alternative than Alternative 3 cooperative structure, which allows only a single cooperative to form. Participants who elect not to join a cooperative would participate outside a cooperative but within the sector's limited access fishery.

As the number of cooperatives increase, the complexity of monitoring requirements by NOAA Fisheries also increases. Unlike AFA cooperatives, where only pollock is allocated, Amendment 80 will allocate several species, which must be monitored. Sideboards will also add to management and monitoring burdens. If multiple cooperatives form, multiple accounts will exist for each allocated species and a system of monitoring transfers must be developed. The system of transfers must ensure liability for harvests in excess of allocations. If NOAA Fisheries bears full responsibility for monitoring catch on a vessel basis within each cooperative, performing transfers of quota between cooperatives, and notifying enforcement if quotas have been exceeded, it is likely there would be a need for increased agency staffing. Alternatively, Bering Sea pollock cooperatives developed under the AFA have developed an intercooperative agreement under which a large portion of the administrative and monitoring obligations are taken on by the industry with agency oversight. A similar system could be developed for the Non-

AFA Trawl CP sector to ameliorate the agency management and monitoring burden, but the multispecies allocations would be more complicated for sector management than Bering Sea pollock allocations. Regardless of whether a portion of the management and monitoring burden may be transferred to participants in the sector, multiple cooperatives would compound agency oversight burdens and costs.

Under Alternative 2, allocation of the primary species and PSC allowances between cooperatives and the sector's limited access fishery is based on the retained catch of the allocated species of the eligible license holders included in each cooperative and in the non-cooperative pool for the years 1998-2002, with no years of catch history excluded. Since it is not possible to determine which vessels will join a cooperative(s) very little can be said about the distribution of the sector's TAC between cooperatives and the sector's limited access fishery.

Using retained catch during the years 1998-2002 with no drop years, the number of vessels that would be below with minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Due to confidentiality requirements, a more detailed description of the minimum allocation is not possible.

Unlike the other four allocated species, the allocation of Atka mackerel under Alternative 2 would be based on total catch for the years 1998-2002. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history will receive 1.937 percent of the BSAI Atka mackerel of which 1.505 percent would come from EAI/BS and .432 percent would come from the CAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 12.6 percent of the EAI/BS TAC and 0.8 percent of the CAI. After deducting the allocation to the non-mackerel vessels, the remaining 98 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's Atka mackerel allocation.

In contrast, to form a cooperative under Alternative 3 requires 67 percent of the eligible vessels are needed to form a cooperative. Given there are an estimated 26 eligible vessels, 17 qualified vessels are required to form the cooperative. The break-point where power changes from being in the hands of those that have agreed to the terms of the cooperative and those that have not is set at 17 vessels. That point is critical because before that point is reached the persons that have not agreed to the terms of the cooperative wield a considerable amount of power in the cooperative negotiations. However, after the owner of the seventh vessel joins, those that have not joined suddenly have very little leverage in cooperative negotiations.

Under Alternative 3, the allocation of the primary target species and PSC allowance between the cooperative and the sector limited access fishery would be based on the total catch of the allocated species to the eligible license holders include in each pool for the years 1995 to 2003. Each license holder must drop its three lowest years of total catch for each of the allocated species. Given that is not possible to determine with certainty which vessels will join the cooperative very little can be said about the impacts of this alternative will have on the distribution of catch, other than it will vary somewhat compared to Alternative 2.

Using total catch during the years 1995-2003 drop 3 years, the number of vessels that would be below the minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be zero.

The allocation of Atka mackerel under Alternative 3 would be based on total catch for the years 1995-2003, drop 3 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history (non-mackerel vessels) will receive 3.48 percent of the BSAI Atka mackerel of which 1.87 percent would be from the EAI/BS, 1.38 percent would be from the CAI, and .23 percent from the WAI. Applying to the 2005 TAC, the non-mackerel vessels would receive 15.7 percent of the EAI/BS TAC and 2.5 percent of the CAI TAC. After deducting the allocations to the non-mackerel

vessels, the remaining 97 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's Atka mackerel allocation.

For Alternative 4, the allocation of the Amendment 80 species and PSC allowance between the cooperatives and the sector limited access fishery would be based on total catch of the allocated species of cooperatives and the pool of sector limit access fishery participants using years 1998-2004 dropping the two lowest annual catches. Given that is not possible to determine with certainty which vessels will join the cooperative very little can be said about the impacts of this alternative will have on the distribution of catch, other than it will vary somewhat compared to Alternatives 3 and 4.

Using total catch during the years 1998-2004 drop 2 years, the number of vessels that would be below with minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Similar to Alternative 2, confidentiality requirements limit the amount information that can be released.

Atka mackerel allocation under Alternative 4 would be based on total catch for the years 1998-2004 drop 2 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history will receive 6 percent of the BSAI Atka mackerel of which 4.6 percent would come from EAI/BS, 1.2 percent would come from the CAI, and the remaining .2 percent would come from the WAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 38.6 percent of the EAI/BS TAC, 2.1 percent of the CAI TAC, and 0.6 percent of the WAI. After deducting the allocation to the non-mackerel vessels, the remaining 94 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's BSAI Atka mackerel allocation.

### ***Excessive shares***

Under Alternative 2, consolidation in the Non-AFA Trawl CP sector would not be constrained. There would be no limit on the percentage of the Non-AFA Trawl CP sector allocation that a person (individual or entities) can own or use. With no excessive share caps, the sector's allocation could be concentrated within entities to achieve maximum efficiency. This could substantially reduce the number of vessels and the number of jobs in the sector.

Twenty-six vessels are expected to receive an initial allocation under Amendment 80. Some members of the sector provided testimony at various Council meetings indicating that the fleet may consolidate to about 15 or 16 vessels, if excessive share caps are not implemented. It is not possible to project the number of vessels that would remain in the fishery with existing data, so the industry opinions are the best information available on the amount of consolidation that is expected to occur.

Some of the vessels retired from active harvesting in the fishery would likely be kept ready to participate in case they were needed in the future. Linking catch history to qualified vessels means that the vessel must hold a federal fisheries permit to receive their allocation. Keeping vessels eligible to be issued a Federal Fisheries Permit will increase costs<sup>49</sup> above those that would be needed if the vessels could completely be retired or sold for another use.

In contrast to Alternative 2, consolidation would be limited under Alternatives 3 and 4. Consolidation in the Non-AFA Trawl CP sector is limited such that no single company or person can hold<sup>50</sup> more than a fixed percentage of the overall sector apportionment history. The cap would apply across the total

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<sup>49</sup> The difference in cost cannot be estimated with existing information. Costs will depend on the maintenance, insurance, and storage expenses. Data on these costs are currently not available, but could be in the future if the economic data collection program is implemented.

<sup>50</sup> The term hold is assumed to mean own, control, or use. An entity would, using the individual and collective rule would not be allowed to own or control more than the excessive share cap, unless they were grandfathered in above the cap. They would also not be allowed to lease shares from other cooperatives if those leases would cause them to exceed the cap.

allocation to the sector for the five species that are directly allocated using the individual and collective rule (and Pacific cod once Amendment 85 is implemented). Persons (individuals and entities) that exceed the cap based on their initial allocation would be grandfathered. A vessel's allotment under Alternative 3 is based on total catch during the years 1995 through 2003, and allowing each vessel to drop their three worst years of catch during the qualifying period. Since the cap is set at 50 percent of the fishery it can logically only apply to one company. If two companies own exactly 50 percent of the sector allocation there is no more quota to buy<sup>51</sup>. Based on a 50 percent cap, no company is over the cap for yellowfin sole, rock sole, and flathead sole. Any company that wanted to purchase shares of these fisheries, after the initial allocation, would be allowed to do so. The changes in the economic impacts of a 50 percent cap versus no cap are expected to be small, since only one company would be prevented from purchasing another company's allotment. Under Alternative 4, the excessive share limit would be set at 30 percent of the 5 Amendment 80 species (and Pacific cod after Amendment 85 is implemented), in aggregate, using total catch and years 1998 to 2004 and dropping each vessel's worst two years of catch history. According to the Amendment 80 database, least one company was over the 30 percent cap. Since many of the entities in the sector are well below the 30 percent cap, the sector can undergo considerable consolidation under this alternative. Allowing the fleet to consolidate should enable the companies that remain in the sector to operate more efficiently. The improvements in efficiency would be due to the cost savings that result from retiring vessels that are less efficient. Further details on the impacts of excessive shares can be found in Section 3.2.9 beginning on page 149.

Alternative 4 would also include a vessel use cap set at 10 percent of the entire Non-AFA Trawl CP sector allocation. The vessel use cap also includes a grandfather provision that would allow vessels allocated more than 10 percent of the sector's allocation to harvest their allotment. Implementing a 10 percent vessel use cap will limit the number of vessels that will be allowed to exit the fishery. A vessel cap of 10 percent would require approximately 10 vessels to remain active in harvesting the Non-AFA Trawl CP sector allocation, which would allow 16 vessels to exit. Given historic harvest levels by vessel, it is unlikely that 10 vessels would harvest the entire allocation at current TACs. If TACs decline substantially in the future, it may be possible for the entire allocation to be harvested by 10 vessels. Given current ABCs for these species and projected pollock biomass trends, declines of this level are not expected to occur in the near future.

Historic catch data indicates that from 1 to 4 vessels harvested more than 10 percent of the 5 Amendment 80 species during the 1995 to 2004 time period. Those vessels would be allowed to harvest their initial allocation, but would be unable to harvest another cooperative member's allocation in addition to their own. Ultimately, the harvests of some vessels are expected to be limited by implementing 10 percent vessel use cap. It is also anticipated that some vessels will continue to remain under the 10 percent use cap after consolidation (at current TAC levels), so the total number of active fishing vessels in the fleet should be greater than 10. The Alternative 4 use cap is not expected to result in substantially fewer vessels operating in the fishery than implementing no use cap. The use cap will tend to redistribute catch among the remaining vessels, since some vessels will be required to stop fishing when they would not have ceased operations without the cap. Given that the cap is not expected to constrain the number of vessels in the fishery, it is unlikely to have a substantial impact on the number of harvesting and processing jobs that are available in the Non-AFA Trawl CP sector.

### ***Sideboards***

Sideboard limits for the Non-AFA Trawl CP sector would be established by regulation based on the years 1998 through 2002 for Alternative 2, 1995 through 2003 for Alternative 3, and 1998 through 2004 (where applicable) for Alternative 4. Alternative 3 would implement sideboard caps for GOA groundfish, GOA

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<sup>51</sup> It would also require everyone in the sector to join a cooperative or part of the sector's allocation would not be available to purchase.

PSC species, and BSAI groundfish based catch of those species during the qualifying period. Alternatives 2 and 4 do not implement BSAI sideboard limits. Under Alternative 2 and 4, GOA sideboard restrictions are implemented for halibut PSC, pollock, Pacific cod, and directed rockfish fisheries based on historic usage during the 1998-2002 or 1998-2004 qualifying periods, respectively. GOA flatfish fishery participation is limited to vessels that had more than 10 weeks of participation in the GOA flatfish fisheries. Vessels with more than 10 weeks of participation may target GOA flatfish within current TAC and PSC regulations.

Under Alternative 2, GOA groundfish sideboards would be established for pollock and Pacific cod in all GOA areas. Sideboard limits would be established for Pacific Ocean perch, Northern rockfish, and pelagic shelf rockfish in the Western Gulf and West Yakutat. GOA flatfish sideboards would limit the number of vessels that may participate in the GOA flatfish fisheries to those that had more than 10 weeks of participation in those fisheries during the 1998-2002 qualifying period. The 12 vessels that fished more than 10 weeks in the GOA flatfish fisheries during the qualifying period would be allowed to fish GOA flatfish without additional restrictions, beyond the current management measures. The other nine vessels that have historically fished flatfish in the GOA, but had limited participation in those fisheries, would be prohibited from directed fishing for GOA flatfish in the future. Sideboard caps under Alternative 3 would be established for GOA halibut PSC and all other groundfish species based on relative usage of those species from 1995 through 2003. BSAI sideboards would not be established under Alternative 4. GOA halibut sideboard caps would be established based on actual halibut usage from 1998 through 2004. Participation in the GOA flatfish fisheries would be allowed

Sideboards are proposed to remain in place until such time as other BSAI and GOA fisheries are rationalized (including Pacific cod sector allocations). Within the Non-AFA Trawl CP sector, sideboards will be allocated between cooperative and non-cooperative LLP holders based on the same years used to allocate the primary species between the cooperative participants and non-cooperative participants.

The general impacts of BSAI sideboards under Alternative 3 are expected to be slightly more restrictive than implementing no sideboard caps under Alternative's 2 and 4. The primary difference is the magnitude of the impacts based on the relative size of the sideboards. Sideboards are included under Alternative 3 to prevent members of the Non-AFA Trawl CP sector from increasing their harvest of species outside their direct allocation. Sideboard caps are generally thought to prevent vessels from increasing their harvests of other species because of the harvesting flexibility they would have under the cooperative structure. Harvesting flexibility is increased because harvesters can fish at different times of the year or they can stack their cooperative harvest privileges on the most efficient vessels and use the other vessels to fish other species. However, in the BSAI the primary directed trawl fisheries are already rationalized or are in the process of being rationalized. Because of the limited opportunities for expansion into other BSAI participants fisheries, the sideboard caps under Alternative 3 are expected to have limited impacts relative to not implementing sideboard caps.

Sideboards are not needed for the BSAI crab fisheries, because that fishery has been rationalized. Crab PSC allotments are not considered under the sideboard section in the BSAI, but are assigned to the sector as PSC allotments.

Table 3-100 provides estimates of the BSAI sideboards for the alternatives under consideration. When the Non-AFA Trawl CP sector's BSAI average annual catch from 1998-2003 is compared with the estimated sideboards, it indicates that Alternative 3 would result in sideboards that are much lower than historic catch for many flatfish species. The sideboard limits for other rockfish and sablefish show the greatest increase above historic annual catches. These low sideboard caps could limit the amount of the allocated species the sector can harvest. No provisions are included in this amendment to roll-over sideboard species to the Non-AFA Trawl CP sector. It is not possible, given annual TAC fluctuations, changes in incidental catch rates, and PSC constraints to estimate the economic impact selecting Alternative 3 would have on the Non-AFA Trawl CP sector. However, it is apparent that the sideboards could limit directed fisheries much earlier in the year under Alternative 3 than they would under Alternative 2 or Alternative 4.

**Table 3-100 BSAI Sideboard estimates and average historic catch**

Species	2005 ITAC (mt)	Alt. 2	Alt. 3		Alt. 4	Average Catch of Non-AFA Trawl CPs (95-03)		
		Sideboard %	Sideboard %	Estimated Sideboard (mt)	Estimated Sideboard (mt)			
<b>Bering Sea</b>								
Other Rockfish	391	<b>No BSAI Sideboards are implemented under Alternative 4</b>	51.37%	201	<b>No BSAI Sideboards are implemented under Alternative 4</b>	138		
Pacific Ocean Perch	1,190		11.46%	136		231		
Sablefish (Trawl)	1,037		73.83%	766		221		
Greenland Turbot	2,295		16.99%	390		1,077		
<b>Aleutian Islands</b>								
Other Rockfish	502		35.73%	179		315		
Sablefish (Trawl)	557		62.61%	349		22		
Greenland Turbot	680		19.38%	132		165		
<b>Bering Sea &amp; Aleutians</b>								
Arrowtooth Flounder	10,200		20.13%	2,053		9,351		
Northern Rockfish	4,625	4.25%	197	4,026				
Other Flatfish	2,975	11.90%	354	2,138				
Alaska Plaice	6,800	11.90%	809	8,892				
Other Species	24,650	2.25%	554	25,257				
Pacific Cod - Trawl CP	44,779	*	*	368				
Shortraker Rockfish	552	38.13%	210					
Rougheye Rockfish	207	38.13%	79					

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the BSAI, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Table 3-101 reports the estimated GOA sideboards under Alternative 2, Alternative 3, and Alternative 4. Average annual catch of the Non-AFA Trawl CP sector from 1998-2003 is also included in the table. Data in the table indicates that, under Alternative 3, arrowtooth flounder, rex sole (in the Western Gulf), and flathead sole sideboard limits are considerably less than the historic catch levels. The sideboards in those fisheries could constrain the harvest of those species in directed fisheries or other fisheries that take those species as incidental catch.

Table 3-101 GOA sideboard estimates and average historic catch

Species	Alternative 2			Alternative 3		Alternative 4		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	2005 ITAC (mt)	Estimated Sideboard (mt)	Sideboard %	Estimated Sideboard (mt)	Sideboard %	Estimated Sideboard (mt)	
<b>Pollock</b>								
Pollock 610	0.3%	30,380	91	0.2%	61	0.3%	91	120
Pollock 620	0.1%	34,404	34	0.1%	34	0.2%	34	100
Pollock 630	0.1%	18,718	19	0.1%	19	0.2%	19	
Pollock 640	0.1%	1,688	2	0.1%	2	0.2%	4	
<b>Central Gulf</b>								
Arrowtooth Flounder	n/a	25,000	n/a	15.2%	3,795	n/a	n/a	7,750
Deep Water Flatfish	n/a	3,340	n/a	10.0%	335	n/a	n/a	252
Shallow Water Flatfish	n/a	13,000	n/a	2.9%	377	n/a	n/a	173
Flathead Sole	n/a	5,000	n/a	24.4%	1,222	n/a	n/a	369
Rex Sole	n/a	7,340	n/a	78.7%	5,777	n/a	n/a	2,317
Pacific Ocean Perch	RDP	8,535	RDP	RDP	RDP	RDP	RDP	4,179
Rougheye Rockfish	n/a	557	n/a	50.1%	279	n/a	n/a	495
Shortracker Rockfish	n/a	324	n/a	50.1%	162	n/a	n/a	
Thornyhead Rockfish	n/a	1,010	n/a	39.1%	395	n/a	n/a	210
Pelagic Shelf Rockfish	RDP	3,067	RDP	RDP	RDP	RDP	RDP	1,620
Northern Rockfish	RDP	4,283	RDP	RDP	RDP	RDP	RDP	1,156
Other Rockfish	n/a	300	n/a	0.8%	2	n/a	n/a	233
Pacific Cod	5.4%	25,086	1,355	4.0%	1,003	4.4%	1,355	2,024
Sablefish	n/a	1,450	n/a	23.1%	335	n/a	n/a	524

Species	Alternative 2			Alternative 3		Alternative 4		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	2005 ITAC (mt)	Estimated Sideboard (mt)	Sideboard %	Estimated Sideboard (mt)	Sideboard %	Estimated Sideboard (mt)	
<b>Western Gulf</b>								
Arrowtooth Flounder	n/a	8,000	n/a	40.3%	3,224	n/a	n/a	4,218
Deep Water Flatfish	n/a	330	n/a	4.3%	14	n/a	n/a	9
Shallow Water Flatfish	n/a	4,500	n/a	39.7%	1,787	n/a	n/a	143
Flathead Sole	n/a	2,000	n/a	57.6%	1,152	n/a	n/a	314
Rex Sole	n/a	1,680	n/a	88.1%	1,480	n/a	n/a	572
Pacific Ocean Perch	99.3%	2,567	2,549	85.0%	2,182	99.4%	2,549	1,456
Rougheye Rockfish	n/a	188	n/a	63.5%	119	n/a	n/a	161
Shortracker Rockfish	n/a	155	n/a	63.5%	98	n/a	n/a	
Thornyhead Rockfish	n/a	410	n/a	39.7%	163	n/a	n/a	116
Pelagic Shelf Rockfish	64.8%	377	244	55.5%	209	76.4%	288	135
Northern Rockfish	100.0%	808	808	72.3%	584	100.0%	808	443
Other Rockfish	n/a	40	n/a	4.8%	2	n/a	n/a	23
Pacific Cod	2.0%	15,687	314	1.9%	298	2.0%	314	553
Sablefish	n/a	508	n/a	41.1%	209	n/a	n/a	116
<b>West Yakutat</b>								
Deep Water Flatfish	n/a	2,120	n/a	29.9%	634	n/a	n/a	34
Rex Sole	n/a	1,340	n/a	64.8%	868	n/a	n/a	35
Flathead Sole	n/a	3,000	n/a	46.6%	1,398	n/a	n/a	8
Shallow Water Flatfish	n/a	2,030	n/a	0.1%	2	n/a	n/a	0
Arrowtooth Flounder	n/a	2,500	n/a	73.0%	1,825	n/a	n/a	18
Sablefish	n/a	307	n/a	49.2%	151	n/a	n/a	80
Pacific Cod	3.6%	0	0	3.2%	0	3.4%	0	
Pacific Ocean Perch	94.5%	841	795	93.5%	786	96.1%	808	784
Other Rockfish	n/a	130	n/a	50.0%	65	n/a	n/a	20
Pelagic Shelf Rockfish	86.4%	211	182	90.3%	191	89.6%	182	116
<b>Entire Gulf</b>								
Atka Mackerel	n/a	600	n/a	71.7%	430	n/a	n/a	178
Other Species	n/a	13,871	n/a	2.1%	291	n/a	n/a	853

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IO and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the GOA, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Note: n/a - Indicates that no sideboard is implemented. Only vessels with a sufficient number of weeks fished in GOA flatfish fisheries may participate in a directed flatfish fishery.

RDP - Indicates that species will be managed under the Rockfish Demonstration Program

Flatfish sideboard limits under Alternatives 2 and 4 will not be implemented. Instead, under Alternative 2 flatfish sideboards will be based on the harvest of the 12 vessels qualified to target flatfish in the GOA. One additional vessel would qualify to target flatfish in the GOA under Alternative 4. All qualified vessels with a GOA groundfish LLP would be allowed to target GOA flatfish under Alternative 3. However, they would be constrained to the flatfish TAC percentages reported in the previous table.

Under Alternative 3 the sideboards for the rockfish species appear to be less constraining in the Central Gulf than the Western Gulf. Rockfish species allocations from the Rockfish Pilot Program will be used for the Central Gulf harvest limits. Sideboard limits for rockfish species not covered under that program are reported in the previous table.

The Alternative 3 sideboard limits would likely reduce the harvest of the Non-AFA Trawl CP sector below historic levels. This is primarily due to the fact the alternative is calculated using the retained catch of the Non-AFA Trawl CP sector as the numerator and the total catch of all vessels as the denominator. The first wholesale revenues generated by the Non-AFA Trawl CP sector in the Gulf could decline if that Alternative were implemented and vessels were not able to make up the loss of available fish with higher profits per ton of production. Alternative 3 is also expected to cause production to decline in the BSAI, since sideboards for species like other flatfish are well below their historic usage. If once the cap is reached vessels are required to stop fishing for any species that takes them as incidental catch, several of the fisheries for species directly allocated under this program could be closed before the TAC or halibut catch limit is reached.

GOA sideboard limits for halibut under Alternatives 2, 3, and 4 would likely allocate slightly less halibut to the Non-AFA Trawl CP sector than they harvested in the recent past. From 2000 to 2004 the Non-AFA Trawl CP sector averaged 763 mt per year.

Table 3-102 shows the estimated halibut cap that would be available to the Non-AFA Trawl sector in the GOA by area and alternative. The halibut sideboard cap under Alternative 2 would be 747 mt, under Alternative 3 the cap would be 711 mt., and under Alternative 4 the cap would be 760 mt., assuming a 2,000mt halibut allotment. Alternative 4 is very close to the 2000 through 2004 average of 763 mt.

Table 3-102 GOA Trawl Halibut PSC Sideboard estimates (mt)

Alternative	Quarter				Total
	1	2	3	4	
	<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>				
Alt 4	56.82 (2.84%)	238.49 (11.92%)	231.91 (11.60%)	81.87 (4.09%)	609.09 (30.45%)
Alt 3	57.47 (2.87%)	189.28 (9.46%)	218.64 (10.93%)	98.17 (4.91%)	563.56 (28.18%)
Alt 2	50.94 (2.55%)	228.05 (11.40%)	243.29 (12.16%)	60.84 (4.09%)	583.12 (29.16%)
	<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>				
Alt 4	16.93 (0.85%)	38.47 (1.92%)	41.19 (2.06%)	54.79 (2.74%)	151.38 (7.57%)
Alt 3	20.59 (1.03%)	41.87 (2.09%)	36.77 (1.84%)	48.13 (2.41%)	147.35 (7.37%)
Alt 2	18.75 (0.94%)	43.68 (2.18%)	43.59 (2.18%)	58.03 (2.90%)	164.05 (8.20%)

Source: NPFMC summary of NMFS weekly PSC reports.

Note: Data for 2004 was not included in this report. A trawl PSC allotment of 2,000 mt was assumed.

It is not possible to estimate the overall economic impact that sideboards would have on the Non-AFA Trawl CP fleet. However, the negative impacts on the Non-AFA Trawl CP sector are going to be greater under Alternative 3 when compared to Alternative 2 or Alternative 4. The benefits of the sideboards to the other sectors cannot be estimated. To the extent that they are able to increase their harvest of GOA species they would benefit (Under Alternative 3). They will likely be able to harvest most, if not all, of

the fish available to them under the alternatives. GOA halibut PSC sideboard limits will play a role in how much of the groundfish sideboard caps (or flatfish that have no sideboards) the Non-AFA Trawl CP sector can harvest. The halibut PSC caps in the GOA are expected to be fairly restrictive. The fleet's ability to reduce halibut bycatch within the cooperative structure will be an important factor in determining how the Non-AFA Trawl CP sector fairs under these sideboard caps.

### **Groundfish Retention Standard**

With regards to the meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternatives 2, 3 and 4 than under Alternative 1. Under Alternatives 2, 3 and 4, sector participants that join a cooperative can pool their individual annual GRS rates across the cooperative. Under Alternative 1, the GRS would be enforced on a vessel by vessel basis. Under this alternative, vessels in a cooperative would average their individual annual retention rates, which could help to reduce increased operation costs for those vessels limited by the GRS. Overall, given the flexibility of this alternative, each cooperative will minimize the cost of meeting the GRS to the extent possible.

### **3.3.3 Effects on Catcher Processor Efficiency**

This section of the analysis examines the effects of the alternatives on the efficiency of the Non-AFA Trawl CP sector. To establish a framework for this portion of the analysis, a brief description of production efficiency (and its role in overall economic efficiency that is used to examine the net benefits of an action) follows. In the simplest terms, production efficiency is the difference between production revenues and production costs. Production efficiency is a measure of the effectiveness of a producer in using inputs to produce one or more outputs, focusing on the relationship between the quantity and quality of outputs produced and the quantity and quality of the various inputs (e.g., fuel, vessels, and labor) used for that production<sup>52</sup>. Two different types of efficiencies contribute to, and together constitute, production efficiency. "Technical efficiency" refers only to the production process that converts inputs to outputs and is a measure of the quantities of inputs used and the quantity of outputs produced in a production process (independent of prices and their effects). Decreasing quantities of inputs and increasing quantities of outputs are sources of technical efficiencies. "Allocative efficiency" considers both the markets for inputs and outputs and the choices of inputs and outputs and is a measure of the economic benefits of the choosing different mixtures of these inputs and output in production. Allocative efficiency necessarily considers the costs and revenues generated by these choices. Collectively, these two types of efficiency define "production efficiency". Overall production efficiency, which is the concern of this section, therefore requires the consideration of both the choices that the producer makes in the markets for inputs and outputs and the process by which inputs are converted to outputs. In the end, overall production efficiency may be measured by the returns to producers—the difference between the producer's revenues generated by outputs and the producer's costs of inputs.

#### **Alternative 1: Status quo/no action**

Production efficiency of the Non-AFA Trawl CP sector under the status quo is limited to some degree by the race for fish under the current LLP fishery and GRS. Sector participants are compelled to race for groundfish with other sector participants, as well as participants in other sectors throughout the period the

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<sup>52</sup> Economists estimate four different contributions to production efficiency, all of which together constitute production efficiency:

1. Reducing the quantities of inputs used to produce a given set of outputs;
2. Increasing the quantities of outputs produced with a given set of inputs;
3. Reducing the cost of production by improving the mixture of inputs used to produce a given set of outputs; and
4. Increasing revenues by improving the mixture of outputs produced using a given set of inputs.

The first two of these estimates are "technical efficiency" and refer only to the production process that converts inputs to outputs (rather than the markets for inputs and outputs). The later two measures are "allocative efficiency" and require consideration of both the markets for inputs and outputs and choices of inputs and outputs.

fisheries are open. Under the race for fish, quality of the groundfish harvested likely suffer to some extent, as participants adopt fishing techniques to maximize catch rates, which may lead to diminished quality and dissipation of a portion of the resource rents. Particularly on vessels with smaller processing plants, fishermen harvest fish at a rate that exceeds the rate at which the plant can process that fish. If fish are held too long prior to processing, quality will decline. Generally, participants in the Non-AFA Trawl CP sector are equipped to produce whole and head and gut frozen products. Production of these products is likely to continue, if the status quo is maintained. In addition, participants in the Non-AFA Trawl CP sector must comply with GRS, which also could limit production efficiency. The magnitude of any negative effect on production efficiency depends on the profits (or losses) arising from retaining fish that would have been discarded but for the GRS and any lost profits from not harvesting more valuable fish because of lack of hold space because of fish retained because of the GRS. Some Non-AFA Trawl CP sector participants assert that extra operating costs associated with holding/processing, transporting, and transferring fish that are of relatively low value or even “unmarketable” at the higher levels of GRS could result in losses. However, changes in technology, fishing techniques, and markets could improve returns from fish retention associated with the GRS

#### **Alternatives 2, 3 and 4: Multiple Cooperatives and Single Cooperative**

Under Alternatives 2, 3 and 4, the Non-AFA Trawl CP sector any change in production efficiency is likely to arise from sector members joining cooperatives. Efficiency improvements would result primarily from improvements in technical efficiency that arise from fishing in cooperatives. Allocative efficiency gains are likely to occur, but would be smaller compared to those gained from technical efficiency since the vessels participating in this sector are equipped to produce only whole and head and gut products. Technical efficiency gains should occur as participants are able to slow the pace of fishing and processing. In the slower fishery, participants are likely to be able to reduce expenditures on inputs to some degree (possible scaling down crews slightly) and increasing output slightly (with less loss due to diminished quality). Additional technical efficiencies should arise because of the cooperative structure of the alternatives. In a cooperative, participants will be free to consolidate fishing up to the user cap and/or vessel cap level. Consolidating catch on fewer vessels in the fishery should also reduce harvest costs. This could be particular useful for those vessels with relatively high costs of accommodating the required enforcement and monitoring conditions necessary for the GRS program. Finally, although technical efficiencies should be realized by the Non-AFA Trawl CP sector overall, some participants eligible for the program may realize efficiencies that are substantially less than those realized by others. Eligible participants that receive small allocations of the primary species may have little to gain from coordinating the harvest of relatively small allocations, particularly since sideboards will limit their harvest from other BSAI or GOA fisheries. For vessels that struggle with technical efficiency, the cooperative would likely have other vessels harvest their allocations.

Although it is apparent that efficiency will improve from cooperative fishing, the extent of overall gains in production efficiency depends on the extent of cooperative membership and the size of cooperatives, both of which could vary under the two alternatives and over time. In general, more participants in cooperatives should result in more efficient operations. Also, larger cooperatives should be more efficient, as participants are able to coordinate fishing of a larger allocation across more vessels.

Under a multiple cooperative structure (such as Alternatives 2 and 4), participants would need to reach agreement with fewer members of the sector for cooperative formation. The diversity and divisiveness of relations in the Non-AFA Trawl CP sector suggest that a multiple cooperative structure could simplify cooperative formation by limiting the number of participants that must come to terms for cooperative formation. The process of reaching agreement will be complicated by the need to reach agreement not only management and harvest of the cooperative allocation, but also on cooperative compliance with the GRS. It is possible (at least at the outset) that several cooperatives would form, as participants choose to co-op with other participants with whom agreement is most easily reached. Over time, however, participants may choose to develop more consolidated cooperatives, particularly if relationships develop

through intercooperative agreements and the potential for efficiency gains through that consolidation become apparent.

Under a single cooperative structure (such as Alternative 3), the extent of any efficiency gain will depend on whether a sufficient number of members of the sector is able to reach agreement and whether persons not in the initial cooperative are able to come to terms with the cooperative. The potential for reaching agreement will depend on several factors. The diversity of the fleet and the potential for GRS compliance to complicate negotiations could be obstacles to cooperative formation. If no cooperative forms, the sector efficiency of the sector would be similar to that of status quo. The separate and limiting allocations (including PSC allocations) to the sector could result in the sector suffering a loss relative to the status quo, if a cooperative agreement cannot be reached. If a cooperative does form, at least early in the program, it is likely to be larger than the cooperatives that might form under Alternative 2. The single cooperative structure, however, could leave some sector members outside of the cooperative for several years reducing overall efficiency, particularly if those sector members are diverse from other members and can meet GRS requirements without cooperative fishing. The single cooperative structure also increases the likelihood that negotiating dynamics will impel some portion of the fleet will need to accept terms that are generally less favorable than would otherwise be accepted because cooperative fishing under less favorable terms provides some benefit over fishing in a limited access. Participants in the sector that are able to use the single cooperative formation rules to exert this negotiating leverage would realize the benefit of any such concessions.

### **3.3.4 Effects on the CDQ Program**

Under Alternatives 2 and 4, CDQ percentage allocations for each of the groundfish species noted in Component 1 and associated secondary species taken incidental in the primary trawl target fisheries would increase to 10 percent, whereas in Alternative 3 the percentage allocations would increase to 15 percent. Similarly, the PSQ percentage allocations would increase proportionately under each alternative, as well. Under Alternatives 2 and 4, the PSQ percentage allocation would increase to 10 percent, and under Alternative 3 the PSQ percentage allocation would increase to 15 percent.

During the first few years of the multispecies CDQ Program (which began in late 1998), many of the flatfish CDQ allocations were not entirely caught. This probably is due to a variety of factors. Some target fisheries (such as yellowfin sole) may have remained open all year, which meant CDQ groups' flatfish partners opted not to fish for yellowfin sole CDQ, as they had open access to yellowfin sole. In fisheries such as the Atka mackerel fisheries, the amount of bycatch CDQ species available to support the Atka mackerel CDQ directed fishery may have led to vessels fishing more conservatively than usual or choosing not to fish for Atka mackerel at all. Prohibitions against exceeding both CDQ and PSQ allocations have meant that both CDQ groups and their harvesting partners operate more conservatively in many fisheries. This is particularly true of incidental catch species or prohibited species, which CDQ groups may dedicate to more valuable target fisheries such as Pacific cod or pollock. The residual amounts of incidental catch species available for other target CDQ fisheries may be deemed insufficient to account for additional bycatch needs.

Table 3-103 shows the 2001 through 2004 CDQ catch for each of the primary target species. Until recently, the yellowfin sole CDQ fishery was not as completely prosecuted as fisheries such as pollock and Pacific cod. As noted in the table below, close to 98 percent (6,321 mt) of the yellowfin sole CDQ was harvest in 2004, and approximately 88 percent in 2003. For Atka mackerel, approximately 90 percent of the total CDQ allocation was harvested in 2003. Catch rates in 2004 were similar or higher. The average annual percent harvested for Pacific Ocean perch ranged from a low of 75 percent for central AI to 88 percent for western AI. The CDQ fisheries for flathead sole and rock sole historically has not been as successfully prosecuted as the other allocated species. The average percent of flathead sole CDQ harvested from 2001 to 2004 was about 24 percent. In these same years, the average annual percent of rock sole CDQ caught was about 17 percent of the amount allocated.

**Table 3-103 Amendment 80 Target CDQ Reserves, Catch, and Percent Harvested, 2001-2004**

CDQ Species	2001			2002			2003			2004			Average 01-04
	CDQ Reserve	Catch	% harvest										
WAI Atka Mackerel	2,093	1,991	95.15	1,478	1,341	90.74	1,499	1,203	80.28	1,550	1,476	95.2	90.34
CAI Atka Mackerel	2,520	2,467	97.91	1,785	1,591	89.14	2,202	2,129	96.69	2,333	2,248	96.35	95.02
EAI Atka Mackerel	585	519	88.77	413	320	77.49	799	696	87.15	843	771	91.42	86.21
Yellowfin Sole	8,475	182	2.15	6,450	1,972	30.57	6,281	5,564	88.58	6,456	6,321	97.91	54.80
Rock Sole	5,625	221	3.93	4,050	553	13.65	3,300	641	19.42	3,075	892	29	16.50
Flathead Sole	3,000	223	7.42	1,875	464	24.76	1,500	392	26.15	1,425	545	38.25	24.15
WAI POP	356	318	89.43	425	355	83.5	439	404	92.06	389	336	86.5	87.87
CAI POP	192	152	79.27	230	155	67.43	251	185	73.63	219	170	77.81	74.54
EAI POP	218	162	74.28	260	167	64.3	263	249	94.53	229	165	72.19	76.33

Source: NOAA Fisheries 2005.

Given that the allocations to the Non-AFA Trawl CP sector considered under Alternative 2, 3 and 4 would likely result in this sector harvesting its entire allocation, it is possible that additional vessels would be available to harvest CDQ flatfish. In the past, flatfish CDQ fisheries have remained open for much of the year. Under Alternative 3 the allocations are expected to be limiting. Once the fisheries that the cooperative(s) or open access components of the Non-AFA Trawl CP sector participate in are closed, it is more likely they would want to fish CDQ flatfish allocations. This could benefit the CDQ groups and the vessels that have contracts to harvest that catch. The actual benefits that each entity would generate cannot be estimated given the current information available.

The relatively small size of these quotas and variability in the amount of each primary target species harvested in past years make estimating the future CDQ royalties from each of the allocated species difficult. In some instances, royalty rates are based on a sliding scale according to the value of the product form produced from a given species based on current market condition. High demand for a particular species and product form could trigger increased CDQ catch of that species, with corresponding increases in royalty payments. To calculate future royalty estimates for the increased CDQ percentage allocations considered under Alternatives 2, 3 and 4, analysts would need to know the cost structure of the harvesting vessels, the revenues they generate from selling CDQ fish, the royalties they pay to the CDQ groups and the actual amount of each species they would harvest, retain, and process. Much of this information cannot be obtained from data sources that are currently available.

Practically speaking, it may be unlikely that the entire amount of each CDQ reserve would be caught, or that those fish that were caught would all yield royalties to CDQ groups. Some amounts of the primary target species are caught and discarded in other target fisheries. In addition, some amount of the primary species caught in the CDQ fisheries for primary target species are discarded and yield no benefit to either the vessel owner/operator or to CDQ groups. However, the increased CDQ percentage allocations under Alternative 2, Alternative 3, and Alternative 4 could offer opportunities for the CDQ groups to increase their participation in the Amendment 80 target fisheries. This probably would allow them to realize associated increase in royalties for allowing their partners to access CDQ species. However, we anticipate that any increases in the CDQ percentage allocations would contribute a relatively small amount of the total CDQ royalties generated per year. But, these increased allocations also could allow CDQ groups to negotiate additional training opportunities, internships, and employment positions for CDQ community

residents, either on board fishing vessels or in the vessels' business offices. Even though the total royalties generated from these species is estimated to be relatively small, members of the CDQ groups could argue that they still play an important role in meeting their overall objectives, such as providing employment and training opportunities.

The CDQ groups receives 7.5 percent of the annual BSAI yellowfin sole TAC. In 2003, some CDQ groups began pooling some of their annual allocations, including CDQ allocations of yellowfin sole and Atka mackerel. This appears to have allowed them to operate more efficiently and better manage the catch of incidental species. The 2003 fishery was the first year that essentially all of the yellowfin sole CDQ reserve was harvested. Table 3-103 shows that close to 98 percent of the yellowfin sole CDQ was harvested in 2004, and approximately 88 percent in 2003. In contrast, CDQ groups only harvested about 30 percent of their allocations in 2002. Given that relatively large percentages of the TACs were harvested in both the open access and CDQ fisheries, the increased CDQ percentage allocations considered under Alternative 2, Alternative 3, and Alternative 4 probably would be harvested, if TACs and market conditions were relatively stable, and if CDQ groups and their partners continue their recent fishing patterns.

The CDQ Program also receives 7.5 percent of the Atka mackerel TAC. The Atka mackerel CDQ fishery is typically prosecuted in conjunction with the non-CDQ Atka mackerel fishery. It is often combined with the Pacific Ocean perch CDQ fishery. In 2003, about 90 percent of the total CDQ allocation of Atka mackerel was harvested. The largest subarea harvest was from the central AI area where 97 percent of the allocation was harvested. During that same year, about 87 percent and about 80 percent of the eastern AI/BS and western AI area allocations were harvested, respectively. Catch rates in 2004 were similar or higher. Given that relatively large percentages of the Atka mackerel TACs were harvested in both the open access and CDQ fisheries, the increased CDQ percentage allocations considered under Alternatives 2, 3, and 4 probably would be harvested, too, for the same reasons stated above.

The CDQ Program currently receives 7.5 percent of the AI Pacific Ocean perch TAC. The Pacific Ocean perch fishery is conducted in a similar manner to the Atka mackerel CDQ fishery. The fishery is prosecuted by the same vessels that fish for Atka mackerel, and usually on the same fishing trip, so the temporal effect is similar under both alternatives. Although the majority of the annual CDQ allocation for Pacific Ocean perch appear to have been caught in recent years, this fishery has not been as successfully prosecuted as the Atka mackerel CDQ fishery. The average annual percent harvested for Pacific Ocean perch ranges from a low of 75 percent for the central district to 88 percent for the western district. Under both Alternative 2 and Alternative 4, the CDQ percentage allocation would increase to 10 percent, while under Alternative 3 it would increase to 15 percent of the Pacific Ocean perch TAC. Such increases could provide CDQ groups with even more harvesting opportunities.

The CDQ Program also currently receives 7.5 percent of the TAC for rock sole and flathead sole. These CDQ fisheries have historically not been successfully prosecuted. The average percent of flathead sole CDQ harvested from 2001 to 2004 was about 24 percent. In these same years, the average annual percent of rock sole CDQ caught was about 17 percent of the amount allocated to the program. Even this catch was not necessarily taken in directed fisheries for these two species. Reasons for the low catch rates for rock sole and flathead sole vary. The non-CDQ fisheries for these species are subject to more frequent closures due to reaching either halibut PSC limits or seasonal apportionments. CDQ groups may not place as much emphasis on the harvest of these species due to their relatively low royalty value. Alternatively, CDQ groups may choose not aggressively prosecute this fisheries due to the relatively high level of halibut PSQ bycatch that occurs in them. Halibut or other prohibited species caught in these fisheries would have to be debited from applicable PSQ accounts, thereby decreasing the amounts of PSQ available in other CDQ target fisheries. Under Alternatives 2, 3, and 4, the increased allocations of the flathead sole and rock sole TAC to the CDQ groups could provide the potential for increased harvesting opportunities. However, based on the recent catch rates for flathead sole and rock sole by the CDQ groups and their partners, it is not likely the groups will harvest the entire allocation of these two species under

these alternatives. Assuming they could harvest their entire allocations of these two species, CDQ groups may still realize only modest increases in royalties in comparison to their overall groundfish royalties.

In addition to the potential increases in the primary target CDQ species considered under Alternative 2, Alternative 3, and Alternative 4, these alternatives would increase the CDQ percentage allocations of secondary species (except for Pacific cod) caught incidentally with the primary Amendment 80 target species. Alternatives 2 and 4 would increase these percentage allocations to 10 percent of each secondary species TACs, while Alternative 3 would increase percentage allocations to 15 percent. The incidental catch species associated with these target species include most BSAI TAC species. The primary target species also are caught incidentally in other CDQ target fisheries such as Pacific cod, pollock, or sablefish. Furthermore, some Amendment 80 target species are caught as bycatch in other Amendment 80 target fisheries, where they may be either retained and processed, or discarded. Table 3-104 shows the secondary species that were caught in the 2004 CDQ fisheries for Amendment 80 target species, and illustrates the range of species caught across different target fisheries.

**Table 3-104 Primary and secondary species in the 2004 CDQ target fisheries for Atka mackerel, yellowfin sole, POP, flathead sole, and rock sole**

CDQ and PSQ Species	Target Fishery					Grand Total
	Atka Mackerel	Rockfish	Flathead sole	Rock sole	Yellowfin sole	
AI Greenland Turbot	28.467					28.47
AI Other Rockfish	15.404	0.788				16.19
AI Sablefish	0.153					0.15
Alaska Plaice			3.271	17.91	279.505	300.69
Arrowtooth Flounder	22.201	0.525	58.058	1.487	112.533	194.80
BS Greenland Turbot			2.888			2.89
BS Other Rockfish			2.082			2.08
BS Pacific Ocean Perch			0.272			0.27
BS Sablefish			19.165	0.143	0.023	19.33
CAI Atka Mackerel	2130.05	117.843				2247.89
CAI Pacific Ocean Perch	150.404	20.005				170.41
EAI Pacific Ocean Perch	165.321					165.32
EAI/BS Atka Mackerel	768.877		0.164	0.007		769.05
Flathead Sole	0.136		20.239	3.478	215.153	239.01
Northern Rockfish	310.157	90.527				400.68
Other Flatfish	0.773		11.812	1.287	17.83	31.70
Other Species	58.455	1.559	20.959	5.186	190.172	276.33
Pacific Cod	256.786	12.136	19.175	10.64	186.98	485.72
Rock Sole	14.374	1.546	7.754	105.509	446.113	575.30
Rougeye Rockfish	2.547		0.206			2.75
Shortraker Rockfish	21.652		0.061			21.71
WAI Atka Mackerel	1475.594					1475.59
WAI Pacific Ocean Perch	336.488					336.49
Yellowfin Sole			24.923	77.74	6162.148	6264.81

Source: NOAA Fisheries 2005. CDQ catch data by reported target, for non-pelagic trawl gear. All amounts in metric tons.

Some amount of every BSAI TAC category was caught in the directed CDQ fisheries for Amendment 80 target species in 2004. Squid is not allocated to the CDQ Program and is not included in this table. Approximately 759 mt of pollock was caught with non-pelagic trawl gear in the 2004 CDQ fisheries, and

accrued towards the incidental catch allowance for pollock. Pollock is excluded from this discussion as this species is not under consideration for increased allocations under any of the alternatives. The 2001, 2002, and 2003 CDQ target fisheries for Amendment 80 target species show a similar bycatch pattern to the 2004 CDQ fisheries. Almost every annual TAC category in place for those years was caught in CDQ fisheries for Amendment 80 target species, as well.

Alternative 2, Alternative 3, and Alternative 4 would increase the percentage of secondary species allocated to the CDQ Program in conjunction with increased allocations of primary target species. These allocation increases are shown in Table 3-37. The primary Amendment 80 species are excluded from this table, as is Pacific cod. None of these alternatives would increase the allocations of Pacific cod to the CDQ Program, as increased Pacific cod allocations to the CDQ Program are being considered under a separate action. "Other species" is included in the table, but it should be noted that this species category is no longer allocated among CDQ group due to concerns that the "other species" CDQ allocation was inadequate to account for the bycatch of this species in the groundfish CDQ fisheries. The Council may wish to consider whether it wants to increase the allocation of this species category in light of the previous action it has taken on "other species" CDQ.

**Table 3-105 CDQ allocations for incidental catch species based on allocation percentages considered under Alternatives 2, 3 and 4**

Species	2004 TAC (metric tons)	Alternative 2 (10 percent)	Alternative 3 (15 percent)	Alternative 4 (10 percent)
AI Greenland Turbot	800	80	120	80
AI Other Rockfish	634	63	95	63
AI Sablefish	775	78	116	78
Alaska Plaice	10,000	1000	1500	1000
Arrowtooth Flounder	12,000	1200	1800	1200
BS Greenland Turbot	2,700	270	405	270
BS Other Rockfish	460	46	69	46
BS Pacific Ocean Perch	1,408	141	211	141
BS Sablefish	1,450	145	218	145
Northern Rockfish	5,000	500	750	500
Other Flatfish	3,000	300	450	300
Other Species	27,205	2721	4081	2721
Rougheye Rockfish	195	20	29	20
Shortraker Rockfish	526	53	79	53

Source: NOAA Fisheries 2004 TACs

Neither the species categories nor amounts shown in this table represent a reliable estimate of the amount of the incidental catch species that could be caught in the CDQ directed fisheries for primary target species in the future. The primary target fisheries may need more, or less, than the amounts shown in this table to fully account for the bycatch of such species in either the primary target fisheries, or in all CDQ target fisheries. Historically, non-target (and prohibited species catch) species have been allocated to the CDQ Program at the same proportion as most other species allocated to the program. Estimating the amount of each bycatch species to allocate to the CDQ Program is a complex exercise that, if undertaken, could yield a wider range of necessary CDQ percentage allocations for incidental catch species than considered under either alternative.

Historically, CDQ groups have had adequate PSQ reserves for the fishing strategies employed while fishing for groundfish. PSQ catch in a representative year is displayed in Table 3-106. Projecting whether they would have enough PSQ in the future under Alternatives 2, 3, or 4 would require assumptions regarding bycatch rates of each PSC species in each of the target fisheries, the CDQ allocations of various

target species, and the fishing strategies of the CDQ groups. Developing a model that takes all these factors into account is not feasible. Therefore, the discussion of the PSQ bycatch needs of the CDQ program for each species is qualitative, drawing on historic target fishery and bycatch data to supplement the discussion.

**Table 3-106 PSQ catch in the 2004 CDQ fisheries for primary target species**

CDQ and PSQ categories	Atka Mackerel	Rockfish	Flathead sole	Rock sole	Yellowfin sole	Grand Total
Zone 1 Red King Crab	0	0	0	0	174	174
Zone 1 Bairdi Tanner Crab	0	0	0	164	1,504	1,668
Zone 2 Bairdi Tanner Crab	0	0	216	0	13,178	13,394
Opilio Tanner Crab	0	0	109	16	29,640	29,765
Pacific Halibut	15	0	9	5	67	96
non-chinook salmon	0	0	0	0	0	0

Source: NOAA Fisheries 2005.

Note: Pacific halibut mortality is reported in metric tons. All other species are listed in number of animals.

The financial impact of increasing PSQ allocations also is difficult to analyze, since CDQ groups do not receive royalties for the catch of PSQ species. CDQ groups could forego some royalties if their target fisheries were curtailed due to the complete catch of PSQ amounts and the subsequent relocation of fishing effort or withdrawal of their partners from a particular fishery, but precise estimates of such losses cannot be estimated.

There are two different salmon-related prohibited catch species categories: chinook and non-chinook. Salmon bycatch that accrues to the two salmon PSQ categories primarily occurs in the pollock CDQ directed fishery. In fact, the PSQ catch by the primary target species show that no non-chinook salmon were taken in these fisheries. Increasing the non-chinook salmon allocation would be done to keep the CDQ pollock fishery from closing the Chum Salmon Savings Area before the primary target fisheries are harvested. It is not expected that chum salmon bycatch is going increase much in these fisheries. The non-chinook salmon PSC allocation under Alternatives 2 and 4 is 4,200 salmon, whereas under Alternative 3 the allocation would be 6,300 salmon. Increasing the Chinook Salmon PSQ percentage allocation is not included in any of the alternatives because Chinook salmon savings measures only are applicable to the directed pollock fisheries, not the directed fisheries for the primary target species considered under Amendment 80.

Table 3-37 shows that the CDQ groups have never harvested more than 26 percent of any of their crab PSQ allocations during the years 2001 through 2004. In general, the majority of BSAI crab bycatch typically occurs in the trawl flatfish and Pacific cod fisheries. The CDQ groups are harvesting almost all of their yellowfin sole CDQ allocations. Yellowfin sole also typically has lower crab bycatch rates than flatfish species like rock sole. Fisheries that may demonstrate high levels of crab bycatch have not, historically, been fully harvested by CDQ groups. Only about 20 to 25 percent of the rock sole and flathead sole allocations have been caught in recent years. The amount of crab PSQ that would be needed in the future depends on whether CDQ groups expand their harvests of those species. If those species are more fully utilized by the CDQ groups, the crab bycatch would be expected to increase. Decisions to increase the crab PSQ allocations under Alternative 3 should consider the likelihood of increased activity in these fisheries in the future. Table 3-107 displays the PSQ reserves associated with the range of PSQ allocation percentage increases considered under Alternatives 2, 3 and 4. The existing percentage allocation, 7.5 percent, is included for reference.

Halibut is widely considered the most limiting PSC species in the BSAI groundfish fisheries. Unlike crab and salmon, when a halibut bycatch cap is reached the fleet is required to stop fishing instead of being limited to certain fishing areas. Halibut caps have the potential to restrict the amount of groundfish that can be harvested, as opposed to shifting operations to other areas. Halibut is not allocated to specific

target fisheries in the CDQ program as is done in the non-CDQ fisheries. Thus, if a CDQ group caught all of its annual halibut PSQ allocation, it would be required to stop directed fishing for those target species that could take halibut as bycatch. This would affect just about every potential groundfish fishery except for those prosecuted with pot gear, such as sablefish. In the CDQ fisheries, halibut catch limits have not been as constraining as in the open access fisheries. During the 2001 through 2003 fishing years, the percentage of the halibut PSQ allocation caught has averaged about 41 percent of annual allocations. About 25 percent of the allotment was taken in 2001 and about 51 percent of the allotment was taken in 2003.

The total amount of halibut PSQ mortality used in the CDQ fisheries would be expected to increase if the CDQ groups are successful in increasing their utilization of flatfish allocations such as yellowfin sole and rock sole. Rock sole target fisheries typically have relatively high halibut bycatch compared to other fisheries. During 2003, about 26 kg of halibut was harvested for each metric ton of groundfish harvested in the BSAI open access rock sole fishery. The rate was lower in 2002, about 17 kg of halibut per metric ton of groundfish. As an example, if we used the 2003 halibut bycatch rates, harvesting the entire 2003 rock sole CDQ allocation would have required about an additional 71mt of halibut. The flexibility to harvest at a time of year when halibut bycatch rates are lower is limited by the importance of roe in the rock sole fishery. That fishery occurs in January and February when roe is at peak quality. After the roe is peaked in quality the value of the fish harvested declines and the profitability of harvesting rock sole declines. The allocation of halibut PSQ under Alternatives 2 and 4 would be 458 mt, whereas under Alternative 3 the allocation would be 686 mt.

Herring bycatch is currently not allocated to the CDQ program and is not being considered under this program. Herring will continue to be managed as it is currently. The herring PSC limit is set at one percent of stock biomass. That limit is shared by the non-CDQ and the CDQ sectors.

**Table 3-107 Projected increases in PSQ amounts based on 2004 PSC limits**

PSQ species	2004 PSC limit	7.5%	10%	15%
Zone 1 Red King Crab	197,000	14,775	19,700	29,550
Zone 1 Bairdi Tanner Crab	980,000	73,500	98,000	147,000
Zone 2 Bairdi Tanner Crab	2970,000	222,750	297,000	445,500
Opilio Tanner Crab	4350,000	326,250	435,000	652,500
Pacific Halibut (mt)	4,575	343	458	686
Non-Chinook Salmon	42,000	3,150	4,200	6,300

### 3.3.5 Effects on Consumers

This section examines the effects on consumers of the allocation of the Amendment 80 species to the Non-AFA Trawl CP sector and the development of cooperative program. To allow an examination of the net benefits to the Nation, where possible, the effects on U.S. consumers are distinguished from the effects on consumers in other markets. As noted in the background section of this analysis, portions of the sector's production goes to specific, identifiable consumer markets. Much of the production, however, enters the broader world market. As a consequence, consumer effects of production of the fleet are far reaching.

#### **Alternative 1: Status quo**

Continuation of the current management is likely to perpetuate current production by the Non-AFA Trawl CP sector. Non-AFA Trawl CP participants are likely to continue to produce high quality frozen head and gut and whole fish, which enters the world market for fish. While much of the fish ends in the consumer markets in Asia, a portion of this fish returns to the U.S. consumer market.

### **Alternatives 2, 3 and 4: Multiple Cooperatives and Single Cooperative**

Under Alternatives 2 and 4, production of the Non-AFA Trawl CP sector participants is likely to increase, to some degree. Most vessels in the sector are equipped for producing a few simple product forms (e.g., frozen whole, head and gut). Because of vessel size and design limitations, the potential for these vessels to change plant configurations to process higher-valued, more highly processed product forms is limited.<sup>53</sup>

Although production of the sector is typically high quality, some quality improvements could be achieved as cooperative allocations will remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Improvements will be limited to those in cooperative, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers. Growth for these products in the U.S. market in recent years suggests increased consumer benefits for the U.S. under these alternatives.

The allocation to the general limited access fishery is likely to be produced into frozen head and gut and whole fish as in the current fishery. The destination for most of the product harvested in the general limited access fishery will likely be the Asian, U.S., and European markets as in the current fishery.

Under Alternative 3, allocations to the Non-AFA Trawl CP sector would be less than current harvests and the allocations under Alternatives 2 or 4. As a result, the allocation to the trawl limited access fishery, would be increased. If the portion of the TACs assigned to the trawl limited access fishery is not harvested, and the amounts of those fish rolled-over to the Non-AFA Trawl CP sector cannot be harvested due to halibut constraints, total harvests from the fishery could decline. The reduced supply would likely not negatively impact U.S. consumers due to large number of substitute products available.

Consumer effects under this alternative will also depend on cooperative membership, which could differ from that under Alternative 2 (see discussion in Cooperative Formation section above). Production from cooperative fishing is expected to be slightly better quality, with possible minor changes in production (to higher valued products) by vessels capable of producing those outputs.

### **3.3.6 Effects on Environmental/Non-use Benefits**

Improvements in environmental conditions are valued by the public at large. For example, preservation of endangered species is often considered to have significant value to the public. Although Amendment 80 species populations could be of less concern to the public than high visibility species such as bald eagles, it is likely that the public values preservation of these stocks. The value of knowing that a stock is well maintained in its natural habitat is commonly referred to as a non-use value. In addition to the existence of a resource, the public also likely values the use of the resource. For example, even if fish stocks are well managed and catch is at levels that maintain acceptable stock sizes, the public may experience some loss of value, if catch from the Amendment 80 fisheries are not well utilized and goes to waste. No known studies of these non-use values have been conducted to date, preventing any quantitative estimates of their value. This sector, however, provides a qualitative analysis of these non-use benefits.<sup>54</sup>

#### **Alternative 1: Status quo**

In the current fisheries, catch of all species of interest are limited either by TAC or by PSC limits. Managers monitor harvests inseason, closing the fisheries when the total allowable catch is estimated to be taken. Managers have become quite adept in their estimates, and have generally succeeded in

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<sup>53</sup> Some participants, however, have expressed an interest in upgrades, which could lead to higher processing onboard. The possibility developing these upgrades depends largely the ability of the fleet to meet stability and load limitations of Coast Guard regulations, which cannot be predicted. If successful, reconfiguration could allow production of higher valued products, which could affect the distribution of products to consumer markets (with a likely increase in production for domestic markets).

<sup>54</sup> This section intends to discuss only the public benefits from the environmental consequences of the alternatives.

maintaining catch below TAC. Occasionally, TACs are exceeded, but overages have not exceeded OFL or threatened stocks. Public non-use benefits derived from the management of health stocks of these species are likely to be maintained, if the current management is perpetuated.

Although total catch of each species is limited, discard is permitted of all species harvested but limited to the GRS. Secondary species tend to have low discard rates. Mortality of discards of incidental catch reduces the non-use values to the public that arise through productive use of the resource.

#### **Alternatives 2, 3, and 4: Multiple Cooperatives and Single Cooperative**

Under Alternatives 2, 3 and 4, catch of all species of interest will continue to be limited by TAC or PSC limits. These limits should be effectively maintained through the monitoring and management program, perpetuating the current non-use public benefit derived from maintenance of healthy stocks.

NOAA Fisheries will make annual, exclusive cooperative allocations for the five allocated species under Alternatives 2, 3, and 4. The proposed action will require all eligible Non-AFA Trawl CP vessels to meet the GRS. These measures should have the effect of reducing discards of these species, contributing additional non-use benefits that might arise from productive use of the resource.

If Alternative 3 reduces the harvest of these species below the allowed catch, the unharvested fish will remain in the BSAI ecosystem. This could be considered a benefit to the environment.

### **3.3.7 Effects on Management, Monitoring, and Enforcement**

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

As noted above, Amendment 79 would establish a minimum GRS for Non-AFA Trawl CP vessels greater than or equal to 125 ft LOA. Because it is necessary to monitor Non-AFA Trawl CP vessels to ensure compliance with the GRS, there is some cost to the industry. The Amendment 79 analysis indicates there were 16 active Non-AFA Trawl CP vessels greater than or equal to 125 ft LOA in 2002. NOAA Fisheries estimates that seven of these 16 vessels would have to install approved marine flow scales and observer stations. Approved marine flow scales are estimated to cost approximately \$50,000. Equipment to outfit an observer station, including a motion-compensated platform scale to verify the accuracy of the total catch weight flow scale, would cost between \$6,000 and \$12,000. Installation costs are more difficult to estimate. Installation costs for the scales and observer stations could range between \$20,000 to over \$100,000. The requirement that every haul be observed will most likely necessitate the deployment of one additional observer aboard each of the 16 vessels.<sup>1</sup> It is estimated that the annual cost of an additional NOAA Fisheries-certified observer would be approximately \$82,000 per vessel.

While the costs of the GRS program appear high, the Council designed Amendment 79 to minimize costs by enforcing higher retention rates only on the portion of the fleet with the lowest retention rates. The Council, in June 2003, stated that the proposed action under Amendment 79 would reduce costs to the fishing industry relative to the proposed action under Amendment 49, which was approved by the Secretary in 1997. Amendment 49 would have required all vessels fishing for groundfish in the BSAI management area to retain all rock sole and yellowfin sole beginning January 1, 2003. "The costs [under Amendment 79] are far less than what were originally... considered [under Amendment 49], and we've tried to adjust the program to minimize those costs" (Chairman David Benton, NPFMC, June 2003).

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<sup>1</sup> A vessel could choose not to carry two observers, but it would have to file a fishing plan with NOAA Fisheries that shows it will fish in a way that will allow the single observer to sample 100 percent of the hauls. Typically such a plan requires that the vessel fish only 12 hours per day.

### **Alternatives 2, 3 and 4: Multiple Cooperatives and Single Cooperative**

#### **3.3.8 Effects on Management, Monitoring, and Enforcement**

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

As noted above, a final rule implementing a minimum GRS for Non-AFA Trawl CP vessels greater than or equal to 125 ft LOA was published on April 6, 2006 (71 FR 17362). The GRS program is scheduled to be implemented January 20, 2008. There would be no effects under the status quo alternative and associated costs would be zero. However, because the GRS program has not been implemented, costs associated with the GRS program are described here.

Because it is necessary to monitor Non-AFA Trawl CP vessels to ensure compliance with the GRS, there is some cost to the industry. The analysis indicates there were 16 active Non-AFA Trawl CP vessels greater than or equal to 125 ft LOA in 2002. NOAA Fisheries estimates that seven of these 16 vessels will have to install approved marine flow scales and observer stations. Approved marine flow scales are estimated to cost approximately \$50,000. Equipment to outfit an observer station, including a motion-compensated platform scale to verify the accuracy of the total catch weight flow scale, would cost between \$6,000 and \$12,000. Installation costs are more difficult to estimate. Installation costs for the scales and observer stations could range between \$20,000 to over \$100,000. The requirement that every haul be observed will most likely necessitate the deployment of one additional observer aboard each of the 16 vessels.<sup>1</sup> It is estimated that the annual cost of an additional NOAA Fisheries-certified observer would be approximately \$82,000 per vessel.

While the costs of the GRS program appear high, the Council designed Amendment 79 to minimize costs by enforcing higher retention rates only on the portion of the fleet with the lowest retention rates. The Council, in June 2003, stated that the proposed action under Amendment 79 would reduce costs to the fishing industry relative to the proposed action under Amendment 49, which was approved by the Secretary in 1997. Amendment 49 would have required all vessels fishing for groundfish in the BSAI management area to retain all rock sole and yellowfin sole beginning January 1, 2003. "The costs [under Amendment 79] are far less than what were originally... considered [under Amendment 49], and we've tried to adjust the program to minimize those costs" (Chairman David Benton, NPFMC, June 2003).

### **Alternatives 2, 3 and 4: Multiple Cooperatives and Single Cooperative**

#### **Introduction**

The authority for monitoring and enforcement requirements in Exclusive Economic Zone (EEZ) fisheries stems from a number of National Standards in the Magnuson Stevens Conservation and Management Act (Magnuson-Stevens Act) and other federal law, among them are 1) National Standard 1, stating that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from fisheries in Federal waters; 2) National Standard 7 that encourages decision makers to consider costs and benefits of proposed federal actions and whether the action will have reasonable costs (such as those required to enforce the action) in comparison with the benefits of the action; and 3) requirements for the consideration of the effects of a federal action on protected species by the Marine Mammal Protection Act and Endangered Species Act. Other applicable statutes and executive orders require NMFS and the Council to consider an action's effects on various entities, and the costs and benefits of an action to society. Plans for fishery monitoring and the resulting compliance of fleets that consider these criteria, may enhance the effectiveness of a proposed action. For example, in considering National Standard 1, a monitoring program that failed to discourage the misreporting of catch could lead

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<sup>1</sup> A vessel could choose not to carry two observers, but it would have to file a fishing plan with NOAA Fisheries that shows it will fish in a way that will allow the single observer to sample 100 percent of the hauls. Typically such a plan requires that the vessel fish only 12 hour per day.

to an overfished status of a species and have implications for the optimum yield of a fishery. The development of effective monitoring and accounting of cost effective programs for target and non-target species allocations to a fishing sector and/or cooperatives is a challenge.

Over the past 20 years, numerous quota allocation systems have been implemented worldwide. Proponents of individual or sector quotas hypothesize these systems foster resource stewardship among the shareholders in the resource, which leads to increased voluntary compliance with conservation measures. Some have even argued quota holders should be allowed to set their own catch quotas because of their vested interest in the long-term viability of the resource. Unfortunately, evidence from previously implemented individual and sector quota fisheries has tended to show otherwise, and practices such as high-grading, illegal discarding, and under reporting of catches occur in many quota based fisheries. To reduce the occurrence of these activities and conform to MSA National Standards, adequate monitoring and enforcement is vital to implementing any quota based program, including the alternative currently under consideration by the Council for Amendment 80.

#### ***Monitoring objectives for NMFS-managed quota based fisheries***

Based on the lessons learned from other quota based fisheries, to assist in consolidating or reducing effort in a sector by improving certainty and security of an allocation, and to conform to MSA National Standards, NMFS believes *any* rights-based quota fishery must be developed with sufficient safeguards to meet the following objectives:

*NMFS must be able to ensure compliance with regulations governing the fishery.* In a rights based fishery, quota share holders have a strong incentive to maximize the value of each pound of their quota. One way to do this is to engage in practices such as illegal high grading or under-reporting catch. An effective rights-based quota management program must recognize that the incentive to engage in these sorts of activities increases and provide sufficient measures to minimize them.

*There must be an authoritative, timely and unambiguous record of quota harvested.*

All concerned parties (NMFS, other management agencies, and quota holders) must have access to a single authoritative record which clearly details the amount of quota harvested. To the extent this record is edited, all parties must receive, or have access to the edited record.

Based on experience gained under the CDQ and AFA programs, we anticipate observer sampling procedures and NMFS catch accounting processes will be routinely challenged by quota holders. Contention may be reduced by allowing quota holders or cooperatives to self report catch. However, quota holders have a financial incentive to under-report certain components of catch and, without a reliable source for independent information; a self reporting system is vulnerable to fraud.

#### ***Monitoring challenges specific to Amendment 80 and the head and gut fleet***

In addition to the monitoring challenges documented under other quota programs, Amendment 80 has several unique challenges that are specific to this proposed action and highlight the need for increased monitoring. These are described below:

*Availability of halibut PSC and other limiting species may limit participants' ability to fully harvest quota.*

Components 9 and 10 develop criteria for placing limits on halibut PSC equal to the sector's historic use during the qualifying years, and that halibut PSC will be allocated to participants based on the amount of target species to which they are entitled. If halibut bycatch mortality is higher than the average mortality encountered during the qualifying years, participants will not be able to fully harvest their allocations. Participants will have a strong incentive to reduce or underreport halibut bycatch.

*Observer collected data is the best source of information for species discarded at sea.*

PSC species are required to be discarded at sea. PSC discard information may be collection in two ways: self reported by the vessel operator or by an observer. For the reasons described above, catch composition data collected by an observer onboard a vessel is the best source of information for NMFS' accounting of PSC. In contrast, limiting species, such as rockfish, may be retained and processed and the harvest of these species would be reported. However, maximum retainable amount (MRA) regulations require vessels to discard certain species when catch amounts are in excess of the MRA. Vessels retaining a species where retention is limited by an MRA may choose to retain only high value fish. This practice is commonly known as high grading. Under these scenarios, observer collected information continues to be the only source of independently verifiable data on total catch and species composition.

*NMFS would be forced to rely on an expanded determination of catch weight.*

In any rights-based fishery, NMFS strives for catch accounting information on a haul-by-haul basis. Haul specific catch accounting can be achieved in two ways. First, observers could sort and weigh the entire haul by species. This method would not be a census, but would be a "whole-haul" approach to catch accounting. Second, a statistically valid approach for estimating catch composition by species and weight using observer sampling data could be developed. This would involve collecting several discrete random or systematic samples from within each haul. Next, the weight of each component of catch would be calculated using a statistical estimator. The resultant estimates would include measures of precision, but would not account for systematic error or bias.

Amendment 80 intends to provide secure allocations for a multiple species fishery where catches generally consist of heterogeneously mixed quota and non-quota species or species groups in the same haul. Because of the magnitude of hauls, diversity of species, and range of vessel characteristics, it is not feasible to sort and weigh each quota species individually in many north Pacific fisheries (including flatfish fishery) and current catch accounting models depend on expanded observer samples for species composition. This catch accounting model is based on the policy determination that single composition samples from a single haul characterize the composition of the entire haul without error. Furthermore, NMFS has made a policy determination that this sampling model is an acceptable basis for haul-specific catch accounting and this approach is an acceptable proxy for "whole-haul" or "sampling and estimation" based catch accounting described above. NMFS is taking some steps to enhance an observer's ability to collect "representative" samples, but no analytical basis exists for determining how much improvement will result.

Our experience with the MSCDQ program has been that observer sampling has been the source of much of the controversy surrounding issues of quota catch accounting. In most cases, this controversy has been the result of either flagging an individual species-composition sample as having an anomalously high incidence of a given species, or attempting to influence sampling protocol in ways that result in a systematic bias of catch accounting in favor of vessels. Unfortunately, these incidents are not identified systematically but only when industry perceives it would be to their advantage. Because the catch composition sample will never be the same as actual catch composition, the amount of rarely occurring species in each haul will never be correct.

Observers deployed on H&G vessels currently base their calculation of halibut PSC on approximately 300 kilogram basket samples, or less depending on the time and space available to the observer, which are expanded to determine halibut catch for the entire haul. The sampled hauls are then expanded to determine the quantity of halibut for the unsampled hauls on a trip. The Regional office then calculates the halibut catch rate from the sampled hauls for each target species. These rates are then applied to all unobserved vessels to determine total halibut mortality. The degree to which a given quantity of halibut is expanded varies enormously depending on the fraction of observed hauls and the fraction of sampled catch in the observed hauls.

*Multispecies nature of the allocation.*

This program would allocate at least five main target species: yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Islands Pacific ocean perch (POP). However, other target species which are unallocated could be more valuable per ton and cooperatives would wish to operate in such a manner as to optimize their allocated species. At some point, the availability of one quota species will limit the full harvest of all other quota species. Ideally, cooperatives would harvest the majority of their allocated species first and, to the extent TAC for unallocated species remains in the restricted access fishery, they will then harvest unallocated target species. However, the desire of a participant to maximize their share of unallocated species in the restricted access fishery may cause them to harvest unallocated species early and fail to reserve sufficient quantities to accommodate the actual bycatch needs of primary species allocations. This could create an incentive to misreport catches of allocated species in restricted access fisheries, which are traditionally managed at the fleet level.

*Blending of quota-based species and non-quota based species under this program.*

Amendment 80 does not envision the allocations of other groundfish species caught during normal H&G fishing operations. Rather, these species will be managed under current MRA regulations. Under Amendment 80, vessels engaged in directed fishing for allocated species may top off on unallocated species in bycatch status. As the relative values of various groundfish targets change across time, these top-off fisheries could become significant. Depending on the nature of the top-off activity, this aspect of the fishery could increase demands on available halibut PSC. For example, demand for arrowtooth flounder has increased dramatically in the past year as new markets have been developed. If participating vessels were allowed to top-off at the current rate, they would be allowed to harvest an amount of arrowtooth flounder equal to 35 percent of their quota species. Given the high halibut bycatch associated with arrowtooth flounder relative to other allocated species, this would clearly increase the use of halibut PSC and create monitoring program challenges. Halibut PSC allocations, however, could limit the ability of participants to top-off on these unallocated species.

*Recent enforcement actions highlight concerns over presorting.*

NOAA General Counsel recently prosecuted two separate cases where vessels in the H&G fleet intentionally interfered with observer samples by removing halibut from catch prior to observer sampling, and then discarded the halibut after the observer had completed sampling. In both cases, presorting activities were highly sophisticated and involved numerous crew members. For the reasons described above, Amendment 80 would increase the incentives for misreporting target quota and PSC species or interfering with observer sampling of limiting species. As the potential for these activities increases, minimum monitoring requirements must also increase to ensure NMFS' objectives for quota accounting are met.

***Monitoring tools appropriate for Amendment 80***

As described in earlier sections, Amendment 80 creates monitoring and catch accounting challenges that are greater than other quota programs. To meet these challenges, additional requirements will be needed to manage these sector allocations. On June 27, 2005 and December 16, 2005, NMFS staff met with representatives of the H&G fleet to discuss proposed monitoring components for Amendment 80. The proposed monitoring components (for all alternatives except the status quo) described below reflect these discussions.

Some of the alternatives currently under consideration by the Council for Amendment 80 could create scenarios where some vessels operate in a coop, while others may operate in a restricted access fishery. Options also exist for allocating certain non-target species to the sector as a hard cap or as a soft cap. Where soft caps are proposed, species not open to directed fishing are retained in restricted amounts under a MRA. Monitoring challenges could vary widely depending on Council recommendations to the Secretary, or fleet behavior. For example, if one or two eligible vessels choose to operate in the restricted access fishery, these vessels would be allocated a portion of the overall available allocation. These vessels may have incentives to maximize efficiencies and productivity similar to those vessels operating in a

coop, or they may have an incentive to continue to race for fish. From a monitoring perspective, management challenges associated with coops and non-coops are very similar under Amendment 80, especially if a set of vessels believe access to a catch amount is secure. **For these reasons, vessels that choose to participate in non-coop fisheries would also be subject to increased monitoring standards.** For vessels which target the same species under different management programs, monitoring program complexity would be reduced.

Amendment 80 does not propose to allocate all historically targeted species. Under some alternatives, vessels could target allocated and non-allocated species during the same trip. The monitoring objectives and management structure are different between quota fisheries and non-quota fisheries, but switching monitoring programs could be costly and create significant enforcement challenges. **Consequently, monitoring standards would be in place for all vessels subject to Amendment 80 while fishing in the BSAI.** Because of the similar nature and monitoring challenges associated with MSCDQ fisheries, CDQ regulations would be revised to clarify that all non-AFA trawl catcher/processors would also be subject to these monitoring standards when fishing MSCDQ.

Amendment 80 also proposes to implement harvest restrictions for multiple species while fishing in the GOA. Some of these species are the same as would be targeted under the GOA rockfish pilot program. Vessels subject to Amendment 80 could simultaneously harvest fish in the GOA under several different management programs, and it would be difficult to account for fish under each of these scenarios. For example, a vessel may choose to target fish subject to Amendment 80 sideboards, and then target fish subject to the GOA rockfish pilot program during the same trip. Each of these species groups could be subject to differing harvest limitations, including MRAs. This necessitates separate accounting of catch for each specific program and purpose. As stated above, NMFS must be able to ensure compliance with regulations governing the fishery and there must be an authoritative record of quota fish harvested. **To create an enforceable accounting of fish harvested under multiple management programs, vessels subject to Amendment 80 sideboards would need to be offload all fish from the vessel prior to it entering or exiting any fishery authorized under the GOA rockfish pilot program. Vessels subject to Amendment 80 sideboards in the GOA must also maintain the increased monitoring standards discussed below.**

NMFS considers the monitoring standards implemented under the AFA to be sufficient to meet the monitoring needs of that quota fishery. The standards envisioned under Amendment 80 are more rigorous than those developed for the AFA pollock fishery. AFA pollock fisheries differ from H&G fisheries in that only one species is allocated under the AFA, and incidental catch is generally very low. Under Amendment 80, multiple species (but not all species) would be allocated to the H&G fleet. In some instances, allocated species may be fished in a restricted access fishery by the same vessels. These increased complexities create the need for a more intricate monitoring program than the AFA, where a single species are managed.

*All vessels would be required to weigh all catch on NMFS-approved scales and provide an observer work station.*

NMFS-approved scales would be inspected annually and tested daily when in use to ensure they are accurate. Because observer samples would be extrapolated to the entire haul, catch from each haul would be required to be weighed separately on the scale. To facilitate separate weighing, catch from each haul could not be mixed with other hauls. Vessels would also be required to provide an observer work station where an observer can work safely and effectively. Stations would meet specifications for size and location and be equipped with an observer sampling station scale, a table, adequate lighting, floor grating, and running water. Each observer sampling station would be inspected and approved by NMFS annually.

*All hauls would available to be observed by NMFS-certified observers.*

Typically, this would mean at least two observers per vessel. Each observer would work 12 hour shifts. Vessel fishing practices would be conducted in such manner that each observer could complete the sampling duties outlined in the Observer Program sampling manual ([http://www.afsc.noaa.gov/refm/observers/Manual\\_pages/MANUAL\\_pdfs/manual2006.pdf](http://www.afsc.noaa.gov/refm/observers/Manual_pages/MANUAL_pdfs/manual2006.pdf)). To the extent that the number of hauls sampled would increase from the status quo, vessels may have to modify their fishing practices to accommodate these work restrictions. Regulations specific to equipment for catch weighing and sampling are found at §679.28. Observer requirements are found at §679.50.

*Additional proposed requirements to facilitate observer sampling of unsorted catch.*

The following five items describe proposed requirements necessary to facilitate the collection of unsorted species composition samples:

1. Vessels would be prohibited from having more than one operational line, or other conveyance device for the mechanized movement of catch between the scale used to weigh total catch and the location where the observer collects species composition samples. Many vessels in this fleet currently operate with two separate production lines. Because observer program sampling procedures assume an observer has access to all unsorted catch, dual sample collection points are unacceptable for catch accounting on a haul-by-haul basis. While vessels could continue to operate dual production lines, an observer must have access to all unsorted catch at a single location. Vessels fishing in CDQ and AFA fisheries are also subject to these restrictions. In particular, many vessels in CDQ fisheries have devised creative solutions to comply with this requirement. For this reason, NMFS believes this requirement would not create an undue burden on vessels currently operating with dual lines.
2. The observer must be able to view all the activities of crew inside the bin locate prior to where the observer collects unsorted catch. This requirement would help the observer ensure his or her sample consists of unsorted catch, and that no presorting activities are occurring. The vessel would be required to choose, and have approved at the time of the observer sampling station inspection, one of three options to meet this requirement. These options are:

- **Limit tank access option.** No crew would be allowed inside the bin unless the flow of fish has been stopped between the tank and the location where the observer collects unsorted catch, and all catch has been cleared from all locations between the tank and the location where the observer collects unsorted catch, and the observer has been given notice that vessel crew must enter the tank. Also, the observer would be required to be given the opportunity to observe activities of the person(s) in the tank. H&G representatives are concerned that a total ban on crew entering the fish bin would prevent the flow of fish in rockfish fisheries or cases where mud prevents the natural flow of fish from the bin. Therefore, when informed by the observer that all sampling activities are completed for any haul, crew would be allowed to enter the bin without meeting the requirement of stopping the flow of fish and clearing catch between the tank and location where the observer collects unsorted catch. These requirements would allow observers to monitor activities within the bin or tank while maintaining sample collection protocols.

- **Line of sight option.** From the observer sampling station and the location from which the observer collects unsorted catch, an observer must be able to see all areas of the bin where crew could be located. This requirement may be accomplished by creating a viewing port inside the bin, and would be approved by NMFS during the observer sample station inspection.

- **Video option.** A vessel may provide and maintain cameras, a monitor, and a digital video recording system for all areas of the bin where crew could be located. The video data must be maintained and made available to NMFS upon request for no less than a 120 day period. This

option would also be subject to approval by NMFS at the time of the observer sample station inspection.

If the Line of Sight Option or the Video Option fails to meet the standard of allowing the observer to view all the activities of crew in the bin (for example, if a camera system becomes inoperable during any fishing trip), then the vessel must revert to the Limit Tank Access Option

Previous versions of this analysis described a flexible monitoring approach that would allow vessel owners or operators to propose a vessel specific Vessel Monitoring Plan (VMP) that would be approved by NMFS if the VMP met certain monitoring performance standards. Vessels operating under a NMFS approved VMP would be exempted from regulations prohibiting crew members in fish bins where unobserved presorting of catch can occur.

Since that time, NOAA General Counsel identified its concern with the legality and enforceability of regulations that allow individual waivers from general provisions of regulatory programs, e.g., contractual-like individual exceptions to the general regulatory prohibition on crew in bins. Difficulties also were identified that thwarted the development of regulatory criteria for VMPs for all the non AFA trawl catcher processors which would: (1) be enforceable, (2) consistently and effectively meet the objectives of an adequate catch monitoring program, and (3) be efficient and cost effective for the agency to implement. Further, we learned from conversations with industry that the type of VMPs being contemplated could easily be accommodated by a fairly simple set of regulatory provisions that addressed agency concerns. Specifically, vessels could use video technology, or factory modifications to ensure that an observer has an unobstructed line-of-sight from the observer sample station into the fish bin so that any sorting activity could be monitored.

For these reasons, NMFS has decided not to propose VMPs as a monitoring option for Amendment 80. Rather, the items described above have replaced this proposed requirement.

3. Unsorted catch would be prohibited from remaining on deck outside of the codend without an observer present, except for fish accidentally spilled from the codend during hauling and dumping. NMFS feels fish that remain in a codend do not present a large opportunity for presorting activities. However, unsorted catch on deck outside of a codend could easily be subject to presorting.
4. A vessel operator would be required to document the flow of fish within the vessel's factory. This description would include all live tanks, any sorting areas, total catch weighing scales, any incline belts, and any other aides or hindrances to the flow of fish. Additionally, the document must describe the procedure for testing of scales used to weigh total catch, where the test weights or equipment used to test the scales are stored, and the personnel responsible for testing the scale. These descriptions will assist observers in assessing sampling procedures, and identifying potential violations.
5. Sample station space requirements for AFA were implemented for a fishery where the large majority of catch is pollock, and partial hauls are commonly taken. During partial haul sampling, observers collect bycatch from a known portion of a haul. Because AFA bycatch levels are relatively low, less space is required to store observer samples. However, because of the multi-species nature of this fishery, partial haul sampling is rarely an option for observers. Thus, almost all samples taken in these fisheries are basket samples. Minimum basket sample sizes necessitate storage for 10 standard observer baskets. Depending on the vessel, sample station space requirements could be insufficient to store basket samples. NMFS would only approve observer sample stations that could store 10 observer baskets.

*Each vessel would be required to provide the opportunity for a pre-cruise meeting.*

Pre-cruise meetings would require vessel operators to notify NMFS 24 hours prior to departure for a fishing trip. Pre-cruise meetings have three primary goals:

1. Establish a professional working relationship early in the observers' interactions with vessel personnel;
2. Clarify prior to embarking on a fishing trip what is expected of each participant according to regulations and the VMP;
3. Provide both the observer and the vessel personnel an opportunity to discuss specific issues prior to those issues becoming problems.

A pre-cruise meeting would include at least one NMFS staff member, the vessel operator and the observer(s). NMFS has offered pre-cruise meetings to vessels on a voluntary basis for the last 5 years and participants in these meetings have found them to be extremely beneficial. Given Amendment 80 could be monitored, in part, with a new performance based monitoring system where every vessel's VMP could be different, observers and vessel personnel would benefit from a mutual understanding of the observers' role in the VMP.

### **Costs, effects, and benefits of monitoring program**

This section summarizes the costs and provides an effects analysis of monitoring components for all H&G vessels that would be subject to Amendment 80. It applies to the action alternatives regardless of the alternative adopted by the Council. The section below describes some of the known accounting costs, the effects of imposing these costs on the sector, and other potential benefits of this monitoring.

#### ***Costs and effects associated with scales, observers, and observers sampling stations under status quo***

The monitoring needs for AFA C/Ps resemble those of the H&G fleet operating under any Amendment 80 action alternative. Based on NMFS experience with the AFA fleet, some data have been obtained on the accounting costs of purchasing and installing equipment, modifying factories, and retaining observers on vessels potentially regulated by this action. Data are not available on other opportunity costs of these requirements, but where possible qualitative discussion is included. Other variables that may affect producer and consumer surplus of this monitoring program are discussed, but they are speculative.

A final rule implementing a Groundfish Retention Standard (GRS) was published on April 6, 2006 (71 FR 17362). Under these regulations, all vessels would be required to weigh all catch from each haul separately on NMFS-approved scales. The scales would be inspected annually and tested daily when in use to ensure they are accurate. Vessels would also be required to provide an observer work station where an observer can work safely and effectively. The stations would meet specifications for size and location and be equipped with an observer sampling station scale, a table, adequate lighting and running water. Each observer sampling station would be inspected and approved by NMFS annually. All hauls would be observed by NMFS-certified observers. Regulations specific to equipment for catch weighing and sampling are found at §679.28. Observer requirements are found at §679.50.

Approved flow scales cost approximately \$50,000. Equipment to outfit an observer station, including a motion-compensated platform scale to verify the accuracy of the flow scale, cost between \$6,000 and \$12,000. Installation costs are much more difficult to estimate. Due to space constraints on many C/Ps, the need to relocate sorting space and processing equipment, and the wide range of configurations on individual vessels, the installation cost range for the scales and observer sample stations could be between \$20,000 and \$250,000 per vessel. Installation costs exceeding \$100,000 are expected to be rare. The total cost of purchasing and installing flow scales to weigh groundfish catch on H&G vessels may range between \$76,000 and \$300,000 per vessel (Alan Kinsolving, NMFS, *pers. comm.*, April, 2005). Some H&G vessels participate in other fisheries which have heightened monitoring requirements and have already installed flow scales and/or sample stations. These vessels may not incur any of the costs associated with this equipment or with any factory changes. Table 3-108 lists H&G vessels active in 2004 and their current flow scale and sample station status.

**Table 3-108 HT-CPs with Vessel Length, Flow Scale & Observer Sampling Station Status**

VESSEL NAME	Length	Flow Scale	Observer Station
GOLDEN FLEECE	104	No	No
ALLIANCE	107	No	No
TREMONT	124	No	No
OCEAN ALASKA	107	Yes	Yes
ENTERPRISE	120	No	Not Certified
DEFENDER	123	Not Approved	Not Certified
VAERDAL	124	Not Approved	Not Certified
REBECCA IRENE	140	No	No
CAPE HORN	158	No	No
ALASKA RANGER	203	No	No
ALASKA WARRIOR	215	No	No
ALASKA SPIRIT	221	No	No
ALASKA VICTORY	227	No	No
ALASKA JURIS	238	No	No
LEGACY	132	Not Approved	Not Certified
CONSTELLATION	150	Not Approved	Not Certified
UNIMAK	185	Not Approved	Not Certified
ARICA	186	Not Approved	Not Certified
AMERICAN NO I	160	Yes	Yes
U.S. INTREPID	185	Not Approved	Yes
OCEAN PEACE	219	Yes	Yes
SEAFISHER	230	Yes	Yes
SEAFREEZE ALASKA	295	Yes	Yes

Affected vessels with approved flow scale and certified observer station – 5

Affected vessels with unapproved flow scale but certified observer station – 1

Affected vessels with unapproved flow scale and uncertified observer station – 6

Affected vessels with no flow scale and uncertified observer station – 1

Affected vessels with no flow scale and no observer station – 10

Sources: NMFS AKR and NPGOP, 2005.

A vessel operator would be required to provide a document which describes the flow of fish within the vessel's factory. This description would include all live tanks, any sorting areas, total catch weighing scales, any incline belts, and any other aides or hindrances to the flow of fish. Additionally, the document must describe the procedure for testing of scales used to weigh total catch, where the test weights or equipment used to test the scales are stored, and the personnel responsible for testing the scale. These descriptions will assist observers in assessing sampling procedures, and identifying potential violations. There are minimal to no costs associated with this requirement.

Observation of every haul would most likely necessitate the deployment of two observers aboard each vessel. Current regulations require trawl vessels 125 ft. or longer to carry one NMFS-certified observer 100 percent of the time while fishing for groundfish. Therefore, observer coverage on these vessels would be doubled. Generally, trawl vessels less than 125 ft. are required to carry an observer 30 percent of their fishing days. Vessels less than 125 ft. would be required to increase observer coverage by a greater amount.

It is estimated the cost of an additional NMFS-certified observer is about \$355 per deployment day (not including food costs) for each vessel. In 2004, affected vessels 125 ft. or greater averaged about 179 observer days per year. Therefore, a conservative estimate of the cost of an additional observer for vessels 125 ft. or greater would be approximately \$63,545 per vessel per year.

H&G vessels less than 125 ft. averaged about 26 fishing weeks per year based on NMFS WPR data. This equates to about 182 fishing days per year. However, this number is likely high because WPRs are submitted on a weekly basis, regardless whether fishing occurred for all seven days. Even though H&G vessels less than 125 ft. only are required to carry an observer for 30 percent of their fishing days, these vessels carried an observer for an average of 69 days, or 37 percent. Increasing observer coverage from 69 fishing days to 182 fishing days would cost approximately \$40,115. Since observation of all hauls

would be required, an additional observer would cost about \$64,610. For vessels less than 125 ft., observer coverage costs would increase by approximately \$104,725.

Under Amendment 80, vessels may choose to slow fishing operations to increase efficiencies and decrease the amount of time they operate in marginal weather. If vessel operators choose to increase their fishing days, they would experience increased observer costs. While these costs can be expected to increase, they are impossible to estimate now.

A variety of other costs are associated with a requirement for vessels to install marine scales, including the cost of reduced efficiency as a result of changes in procedures for harvesting, sorting, discarding, or processing groundfish. For example, sorting space may be reduced and processing equipment may be moved to accommodate the scale, possibly reducing the efficiency of the factory. These costs will vary among the vessels, depending on factory configuration. However, under Amendment 80, where vessels or coops would receive an allocation of some target species, vessels could slow fishing practices and increase operating efficiencies without the negative impacts associated with these behaviors under a race for fish.

Additional crew time may be required to monitor and record information from the scale and to test, maintain, and repair the scale. NMFS estimates the annual cost of maintenance for scales currently installed on catcher processors has been approximately \$1,500 to \$2,000. If season lengths increase, costs could increase. Finally, vessel operators may choose to purchase spare parts or a back-up scale depending on the amount of fishing time lost if the scales break down.

Total costs for scale, sample station, and observer requirements for each vessel greater than or equal to 125 ft. range between approximately \$64,045 and \$365,545. Total costs for scale, sample station, and observer requirements for each vessel less than 125 ft. range between \$182,225 and \$406,725.

Because of the high costs associated with increased observer coverage requirements, some vessels may decide to lease or sell their history to a coop. This is likely to benefit a coop by idling redundant fishing capacity, reducing overall operating costs, and reducing expenditures on required monitoring provisions.

In addition to costs borne by the vessels, increases in the number of observer days and their associated increase in the amount of data collected is expected to raise overall annual costs of the Observer Program. This budgetary increase can be attributed to additional staffing, augmented spending for observer sampling equipment, data entry contracts, and travel associated with inspecting sample stations and conducting pre-cruise meetings. The Observer Program estimates increased staffing and costs associated with this action to include 3.5 full time equivalent staff positions and approximately \$450,000 annually.

Regulations implementing the GRS program are scheduled to be implemented January 20, 2008. With the exception of space required for storage of 10 baskets, vessels 125 ft or greater will have small incremental costs because the costs described above will be implemented under monitoring requirements imposed under the GRS program. These include observer, flow scale, and sample station requirements. Costs associated with storage of 10 baskets could vary widely. Vessels less than 125 would not be subject to the proposed GRS program and increased monitoring requirements under Amendment 80 would include the costs described above.

#### ***Costs and effect associated with other monitoring requirements***

Vessels would be prohibited from having more than one operational line, chute, or other conveyance device for the mechanized movement of catch between the scale used to weigh total catch and the location where the observer collects species composition samples. Many vessels in this fleet currently operate with two separate production lines. Because observer program sampling procedures assume an observer has access to all unsorted catch, dual sample collection points is unacceptable for catch accounting on a haul-by-haul basis. While vessels could continue to operate dual production lines, an observer must have access to all unsorted catch at a single location. Vessels fishing in CDQ and AFA

fisheries are also subject to these restrictions. In particular, many vessels in CDQ fisheries have devised creative solutions to comply with this requirement. Additionally, many vessels would be subject to this requirement under the GRS program scheduled to be implemented in 2008. For these reasons, NMFS believes this requirement would not create an undue burden on vessels currently operating with dual lines.

Each vessel would detail the amount and location of space to accommodate a minimum sample size for an observer to sort and store catch. A minimum 300 kg basket sample requires storage for approximately 10 standard observer sampling baskets. This area would be within the observer sample station. Because requirements described at §679.28 may not accommodate 10 baskets on all vessels, this standard may require additional space. This standard enables observer(s) to more effectively sample for species composition. Due to decreased space for processing equipment, there could be costs associated with slower processing capacity relative to the status quo. However, vessels would likely slow fishing operations for other reasons. This standard could result in additional factory layout modifications. Vessels have a wide range of possibilities to meet this standard and it is impossible to estimate the associated costs.

Unsorted catch would be prohibited from remaining on deck outside of the codend without an observer present, except for fish accidentally spilled from the codend during hauling and dumping. NMFS feels fish that remain in a codend do not present a large opportunity for presorting activities. However, unsorted catch on deck outside of a codend could easily be subject to presorting.

Cost associated with these requirements could require modifications to vessel factories. These costs are included in estimates of costs associated with observer sampling stations and scales. A variety of additional costs could be associated with these requirements. For example, sorting space may be reduced and processing equipment may be moved to accommodate factory changes, possibly reducing the efficiency of the factory. These costs would vary among vessels, depending on factory configuration. Furthermore, production efficiencies could be reduced for those vessels required to stop belts to allow crew in fish bins (described below). However, under Amendment 80, where vessels or coops would receive an allocation of some target species, vessels could slow fishing practices and increase operating efficiencies without the negative impacts associated with these requirements under a race for fish.

A vessel operator would be required to document the flow of fish within the vessel's factory. This description would include all live tanks, any sorting areas, total catch weighing scales, any incline belts, and any other aides or hindrances to the flow of fish. Additionally, the document must describe the procedure for testing of scales used to weigh total catch, where the test weights or equipment used to test the scales are stored, and the personnel responsible for testing the scale. These descriptions will assist observers in assessing sampling procedures, and identifying potential violations. Costs associated with this requirement would be minimal.

NMFS has determined that special catch handling requirements for catcher/processors may subject vessel owners and operators to additional costs depending on which of the three monitoring options is chosen.

These options are:

- **Limit tank access option.** No crew would be allowed inside the bin unless the flow of fish has been stopped between the tank and the location where the observer collects unsorted catch, and all catch has been cleared from all locations between the tank and the location where the observer collects unsorted catch, and the observer has been given notice that vessel crew must enter the tank. Also, the observer would be required to be given the opportunity to observe activities of the person(s) in the tank. H&G representatives are concerned that a total ban on crew entering the fish bin would prevent the flow of fish in rockfish fisheries or cases where mud prevents the natural flow of fish from the bin. Therefore, when informed by the observer that all sampling activities are completed for any haul, crew would be allowed to enter the bin without meeting the requirement of stopping the flow of fish and clearing catch between the tank and location where

the observer collects unsorted catch. These requirements would allow observers to monitor activities within the bin or tank while maintaining sample collection protocols.

- **Line of sight option.** From the observer sampling station and the location from which the observer collects unsorted catch, an observer must be able to see all areas of the bin where crew could be located. This requirement may be accomplished by creating a viewing port inside the bin, and would be approved by NMFS during the observer sample station inspection.
- **Video option.** A vessel may provide and maintain cameras, a monitor, and a digital video recording system for all areas of the bin where crew could be located. The video data must be maintained and made available to NMFS upon request for no less than a 120 day period. This option would also be subject to approval by NMFS at the time of the observer sample station inspection.

Costs associated with the option to limit crew access could require modifications to vessel factories. These costs are included in estimates of costs associated with observer sampling stations and scales. A variety of additional costs could be associated with these requirements. For example, sorting space may be reduced and processing equipment may be moved to accommodate factory changes, possibly reducing the efficiency of the factory. These costs would vary among vessels, depending on factory configuration. Furthermore, production efficiencies could be reduced for those vessels required to stop belts to allow crew in fish bins while being monitored by an observer. However, under Amendment 80 where vessels or coops would receive an allocation of some target species, vessels could slow fishing practices and increase operating efficiencies without the negative impacts associated with these requirements under a race for fish.

Costs for the line-of-sight option are highly variable depending on bin modifications the vessel may make, the location of the observer sample station, and the type of viewing port installed. Vessels have a wide range of possibilities for meeting this requirement and it is difficult to estimate the associated costs. By incorporating the costs of installing viewing ports with factory modifications made during the installation of a flow scale, costs could be reduced.

Costs for the video option include cameras, a digital video recorder (DVR), associated software, storage of the data, installation of the equipment, and maintenance of the system. Because vessel bin configurations are variable, the costs for a vessel to implement this option to ensure an observer can monitor activities within a bin could be quite variable, depending on the nature of the system chosen. In most cases, the system would be expected to consist of one DVR/computer system and between two and five cameras. DVR systems range in price from \$1,500 to \$10,000 and cameras cost between \$75 and \$300 each. Storage costs will vary depending on the frame rate, color density, amount of compression, and image size. The system would be expected to record data at a rate of between 5 and 20 GB/day. Assuming that a c/p fishes for an average of 20 days per vessel, the amount of storage space would be between 100 and 400 GB per camera, or between 200 (for a two camera system producing highly compressed images, with 8 bit color density, and a fairly small frame size) and 2000 GB (for a five camera system producing moderately compressed images, with 16 bit color density, and a fairly large screen size). Assuming that vessels choose to purchase redundant storage capacity, and that USB compatible hard drives cost approximately \$1.00 per GB, NMFS estimates that storage will cost between \$400 and \$3,000. Installation costs will be a function of where the DVR/computer can be located in relation to an available power source, cameras, and the observer sampling station. In most cases, the DVR/computer would be located on the factory deck in an office/lab if one is available, or in the wheel house if one is not. It is also possible that vessel owners will choose to build a weather resistant enclosure for the DVR/computer in or near the observer sampling station. We estimate that a fairly simple installation will cost approximately \$2,000 while a complex installation will cost approximately \$10,000. However, these costs could be considerably lower if the vessel owner chooses to install the equipment while upgrading other wiring. Thus, total installed system costs would be expected to range between

\$4,050 and \$24,500 per vessel. Maintenance costs are difficult to estimate because much of this technology has not been extensively used at-sea by the US fleet. However, we estimate a hard disk failure rate of 20 percent per year, and a DVR/computer lifespan of three years, or between \$680 and \$4,100 per year.

### ***Other effects of the monitoring program***

Because Amendment 80 monitoring requirements would include flow scales, observer stations, observation of every haul, and additional requirements described above; some improvements to management catch accounting may occur. For example, direct measurement of weight on a flow scale is likely to be more reliable than observer measurements based on volumetrics and density.

Creation of a program to form one or more H&G cooperative under Amendment 80 is also anticipated to reduce some industry costs associated with the status quo restricted access fishery by potentially removing unnecessary fishing effort, reallocating effort to more efficient use, and reducing some redundant capital investment. Lengthened seasons may result in quality improvements in catch, and seasonal distribution advantages that could improve revenues in the directed flatfish and mackerel fisheries. Whether the allocation of species included in the alternatives is sufficiently secure for operations to form a cooperative and receive these benefits may partially depend upon the technical feasibility of enumerating resource harvests at the level of an individual firm. Technical feasibility of measurement and enforcement of goods in creation of secure property is summarized in economic literature<sup>55</sup>.

A number of variables may be considered by members of the non-AFA CP sector in deciding whether to join a cooperative. Among these variables are the quality of data about a competing vessel's reported catches of allocated species and potentially some unallocated species. This data may affect the expected value of catch and discard or retention amounts of potentially held and traded (through cooperative contracts) fish by each competing operation.<sup>56</sup> Uncertainty in the quality of reported catches of directed fisheries, non-target fishery catch and retention, and regulatory discards may lead to insufficiently secure privileges not amenable to a market system. Thus, one of the intended products of the proposed Amendment 80 monitoring program is to increase the amount and resolution of data sufficient for individual quota holders to form a coop.

Under Amendment 80, sector and cooperative allocation of target species intends to improve the non-AFA trawl CP sector's retention and utilization of groundfish. If catch accounting of total groundfish and PSC for the non-AFA trawl CP cooperatives are subject to inaccuracy at some level and these stocks are targeted by other sectors (such as the AFA and halibut/sablefish fisheries), this could also translate into catch uncertainty for sectors other than non-AFA trawl CPs. Inaccurate catch and discard estimates of scarce target resources could impose costs on more than one sector, particularly if a given sector is able to bias estimates through inadequate monitoring. No data exists to suggest how the value of other fisheries may improve with differing levels of monitoring. However, we anticipate the initial Council recommendation for a program or the formation of cooperatives could be impeded at the present level of monitoring.

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<sup>55</sup> The premise that information is a critical component of severability and exclusion in property is as old as some of the earliest literature on the commons. See: THE TRAGEDY OF THE COMMON REVISITED by Beryl Crowe (1969) reprinted in MANAGING THE COMMONS by Garrett Hardin and John Baden W.H. Freeman, 1977; ISBN 0-7167-0476-5

<sup>56</sup> The role of uncertainty in information is explored in several articles under this website: THE ROLE OF PROPERTY RIGHTS IN RESOURCE MANAGEMENT URL: <http://www.spatialgovernance.com/economics/611lec03A.htm> © John S. Cook - Created on 4 July 2004. "The benefits of rule governed behavior reside in reduced levels of conflict and uncertainty in the use of resources. In other words, property rights give greater security of tenure and predictability over outcomes than would occur if the rules did not exist."

In the rapidly paced open access groundfish fisheries, the timing of season closures for some directed species could result in significant over-harvest or under-harvest. It is not possible to determine, with existing information, if increasing the data available to make these decisions would result in long run improvements in the utilization of groundfish fisheries, but it is unlikely the additional data collected under this monitoring program would increase errors in the timing of seasonal openings and closings.

Presently, many vessels in the H&G fleet are required to carry only one observer. Generally, this results in less than 100 percent of the hauls being sampled. Under the Amendment 80 requirement for two observers, all hauls would be sampled. NMFS would no longer need to rely on secondary sources, such as the skipper's estimates or total weekly production figures, as the basis for calculating catch weight for H&G vessels. This would decrease the number of hauls NMFS would need to extrapolate for this fleet.

For example, if a vessel operates on the fishing grounds for several weeks and has less than 100 percent of its hauls observed, some of the bycatch calculations for that vessel are based on bycatch rates derived from other observed hauls and applied to the total catch determination. If NMFS has haul specific information from observer sampling, improved information on actual bycatch amounts would supplant the use of data based on a rate from other observed hauls. The extension of coverage to two observers per vessel would allow every haul to be sampled and could reduce risk associated with the timing of openings and closings for some groundfish fisheries (i.e., decrease the probability stocks would be overfished or under-harvested).

More frequent catch sampling may increase biological information on non-target species. The value of increased biological data, however, is uncertain. More biological information may or may not translate into "better" management decisions, or more valuable fisheries.

Under the GRS program, H&G vessels 125 ft or greater will be required to ensure all hauls can be observed. If this provision is promulgated through final rulemaking, the incremental benefits associated with Amendment 80 will be reduced because only vessels less than 125 ft. would increase observer, scale, and sampling station requirements.

Finally, to facilitate composition sampling and catch accounting, each haul's catch would be weighed separately on the NMFS-approved scale. Vessels would no longer be able to mix hauls in a fish bin. This requirement is also contained in regulations implementing the GRS program. However, some H&G industry members are concerned that prohibiting haul mixing hauls in a restricted access fishery could require vessels to increase the amount of time a full codend remains on deck. They are concerned this could decrease the stability of vessels in rough weather by raising their center of gravity. Currently, the United States Coast Guard is evaluating each vessel's behavior with regards to carrying fish on deck in the current regulatory scenario to determine if the GRS program or Amendment 80 is likely to affect the stability of these vessels relative to the status quo.

However, vessels greater than or equal to 125 feet would be able to slow their fishing operations under Amendment 80, and vessels may be less likely to carry full codends of fish on deck. Under this scenario, there may be increased safety associated with implementation of Amendment 80. Additionally, vessels with secure allocations could choose when to harvest those allocations. Vessels would be less likely to operate in adverse weather conditions. Under these scenarios, implementation of Amendment 80 may significantly increase overall safety for affected vessels. Additionally, vessels may lease or sell their history to a coop if a vessel incurs high costs associated with complying with this requirement.

### **3.3.9 Effects on Fishing Crew**

#### ***Alternative 1: Status quo***

Crew participation and compensation in the Amendment 80 fisheries are likely to continue in their current manner, if the status quo management is continued. Most crewmembers currently work several different fisheries on the same vessel, while some move to other vessels for particular fisheries. Crewmembers are

compensated on a share basis, receiving a percentage of the vessel's revenues. More experienced crewmembers and crewmembers in more demanding positions generally receive larger shares. The existing patterns of participation and compensation are likely to remain about the same, at least until Amendment 79 is implemented. The affects of Amendment 79 are not known with certainty. If Amendment 79 increases to costs for some vessels to the point they cannot cover their fixed and variable costs in the long run they will leave the fishery. Employment in the sector would be reduced. If other vessels are able to harvest catch of those vessels that leave the fisheries, compensation could increase for crewmembers of those vessels.

### **Alternatives 2, 3, and 4: Multiple Cooperatives and Single Cooperative**

Alternatives 2, 3, and 4 are likely to have some impact on employment. Fishing can be expected to slow. In addition, some vessels that have historically participated in the Non-AFA Trawl CP sector may chose to no longer fish in the Amendment 80 fisheries. Notwithstanding this decrease in vessels in the Amendment 80 fisheries, it is likely that some vessels will leave the North Pacific fisheries entirely while some would continue to fish in GOA fisheries.

An indication of the impacts Amendment 80 cooperative program could have on the Non-AFA Trawl CP sector can be seen from the impacts the AFA had on the pollock catcher/processor sector. Information from the *Report to Congress and the Secretary of Commerce on the Impacts of the American Fisheries Act* completed April 1, 2002, stated that the number of jobs that were lost in the catcher/processor sector was approximately 1,500, given that nine catcher/processors were retired as part of the Act and six of the 20 eligible catcher/processors or 30 percent were not used to fish pollock by their owners because the remaining vessels were able to efficiently harvest the pollock. Given that average crew size of a pollock catcher/processor was approximately 100, that means that approximately 900 of the 1,500 jobs lost were because of the AFA retiring vessels. The remaining 600 jobs lost were due to vessels idled because of they were excess capacity.

Although the Non-AFA Trawl CP vessels and fisheries are very different from the pollock catcher/processor vessels and fishery, the experience learned from the AFA is that some of the Non-AFA Trawl CP vessels could potentially be idled because of the efficiency increases associated with the Amendment 80 cooperative program. Based on information from Sector and Regional Profiles of the North Pacific Groundfish Fisheries-2001, for every Non-AFA Trawl CP vessel idled, approximately 35 crewmembers will likely loss their jobs on that vessel. Total crew compensation could also be impacted because of the cooperative program. Crew that remain in the fisheries could realize more stable employment and an increase in income because wages would be divided among fewer employees in the sector. It is not known if the owners would modify their wage scale to reduce crew shares or change to a system of hourly wages for the remaining employees.

Unfortunately, the experience from the AFA is not a perfect predictor of the impacts to the Non-AFA Trawl CP sector caused by cooperative formation. The vessels in both fisheries are very different from one another. The fisheries are also very different. At best, it can be surmised that some Non-AFA Trawl CP vessels will likely elect to exist the fishery because of the consolidation caused by removing excess capacity from the fleet.

### 3.3.10 Effects on Net Benefits to the Nation<sup>57</sup>

#### **Alternative 1: Status Quo**

If the current management of the fisheries allocated under the proposed action were to continue, net benefits to the Nation are likely to remain close to their current level, until Amendment 79 is implemented. When Amendment 79 is implemented harvesting costs are expected to increase to some extent because vessels will incur additional monitoring costs and potential loss in profits from the requirement to retain catch that was previously discarded for efficiency reasons.

The Non-AFA Trawl CP sector will likely continue to focus their fishing effort on several flatfish species, Atka mackerel, AI POP and Pacific cod in the BSAI. Participants will likely continue to race for fish with some fisheries prematurely closed due to exceeding halibut PSC allowances. Sector discard rates will likely improve, but overall the retention rates will continue to lag behind the rest of the BSAI sectors.

Given the above impacts, producer surplus is expected to remain at the current level until Amendment 79 is implemented. After Amendment 79 is implemented, producer surplus will decline to some extent, as a result of the increased monitoring and operating costs under the retention requirements. Revenues are likely to remain similar to current levels, but could decline if lower valued products are produced as a result of retaining fish that would otherwise be discarded because of economic reasons (e.g., fish of sizes that are in less demand or that are without roe). Consumer prices should not be affected by maintaining current management, and consumer surplus is likely to remain at its current level. Since most production is delivered to Asian markets, little (if any) of the effect on consumers is likely to affect U.S. consumers.

#### **Alternative 2**

Net benefits to the Nation would likely increase under Alternative 2 relative to Alternative 1. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. Given the favorable groundfish and PSC allocations to the Non-AFA Trawl CP sector and ability to form multiple cooperatives under this alternative, it is likely most sector participants will join a cooperative. These participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the user cap. With fewer vessels, the harvesting costs should also decline.

Some additional benefits would also likely accrue from the additional 2.5 percent allocation for the Amendment 80 species to the CDQ program. The increased CDQ allocation will slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increase output slightly. If the CDQ program fails to harvest their entire allocation, any amount of allocation left unharvested would tend to reduce the net benefits.

The alternative would also require increased monitoring and enforcement costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches. Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

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<sup>57</sup> At the October 2004 Council meeting, the Scientific Statistical Committee encouraged staff to consider using cost effectiveness analysis (CEA) in place of cost-benefit analysis (CBA) or in addition to CBA. Cost-effectiveness analysis can provide a rigorous way to identify options that achieve the most effective use of the resources available without requiring monetization of all of the relevant benefits or costs. Generally, cost-effectiveness analysis is designed to compare a set of regulatory actions with the same primary outcome. The CEA model is applicable if the benefits of the different alternatives are equivalent in order to compare the different costs. Unfortunately, the benefits of each of the alternatives in this proposed action can only be determine qualitatively, so the CEA model would likely be ineffective in determining the least cost alternative under this proposed action.

A producer surplus would likely be generated under Alternative 2 as a result of pooling individual annual vessel GRS rates. Vessels that join a cooperative would average their individual annual retention rates across all cooperative participants, which would help to reduce operation costs for those vessels limited by the GRS. Overall, each cooperative will seek to minimize the cost of meeting the GRS to the extent possible.

Under this alternative, consumer surplus would likely increase. Although production of the sector is typically high quality, some quality improvements could be achieved as cooperative allocations will remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Since these vessels already produce high quality products because their catch is processed onboard soon after it is harvested, any quality improvement is likely to be slight. Improvements will be limited to those in cooperative, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Since most participants in the sector are limited in their ability to produce higher processed products, production choice changes are likely to be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

### **Alternative 3**

Net benefits to the Nation would likely be smaller under Alternative 3 relative to Alternatives 2 or 4. It is difficult to compare the changes in Net benefits between Alternatives 1 and 3. The amount of fish the Non-AFA Trawl CP sector can legally harvest under Alternative 3 relative to the status quo, is reduced. However, the benefits of cooperatives are expected to increase the overall efficiency of the fleet. The benefit of a cooperative under this alternative will depend on whether a sufficient number of members of the sector are able to reach agreement and whether persons not in the initial cooperative are able to come to terms with the cooperative. If no cooperative forms, sector efficiency would be similar to that of status quo. The separate and limiting allocations (including PSC allocations) to the sector could result in the sector suffering a loss relative to the status quo, if a cooperative agreement cannot be reached. If the cooperative does form, some sector members could remain outside of the cooperative for some time reducing overall efficiency.

An additional unknown under this alternative is how much of the allocation to the general limited access fishery will be harvested by other sectors, and how efficient will they be when harvesting and processing that catch. The allocation to the general limited access fishery under this alternative exceeds the combined AFA Trawl CP and CV sideboards. Without substantial increases in effort by the Non-AFA Trawl Catcher Vessels, large portions of the allocation to the general limited access fishery would go unharvested. If the other sectors do not harvest their portion of the TAC and large amount of quota are rolled over late in the year, it may be of less value to the Non-AFA Trawl CP fleet than if it was available earlier.

Similar to Alternatives 2 and 4, the Nation would likely see an increase in net benefits from the pooling of individual vessel annual GRS rates while in a cooperative. However, unlike Alternatives 2 and 4, which has the potentially for multiple cooperatives, Alternative 3 allows only one cooperative. As a result, there is a chance that some members of the sector will not join the cooperative thus reducing the benefits of pooling annual vessel GRS across the cooperative. In general, members of the cooperative will seek to minimize the cost of meeting the GRS to the extent possible, thereby creating a producer surplus under this alternative.

Under this alternative, the CDQ Program would be allocated 15 percent of the annual TAC for each of the allocated species. The CDQ program would also receive 15 percent of the TAC for the incidental catch species (with the exception of Pacific cod) taken in the Amendment 80 allocated species. The additional 7.5 percent increase in non-pollock groundfish (except Pacific cod) would likely slow the pace of fishing and processing for participants in the CDQ program, thus potentially reducing expenditures on inputs and

increase output slightly. However, the benefits will be reduced if the CDQ program fails to harvest their entire allocation.

Like Alternative 2, this alternative could increase the net benefits to the Nation from the reduction in discards. However, producer surplus will be reduced, from what it could have been due to an increase in vessel monitoring costs. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches.

Under this alternative, consumer surplus would likely increase. Although production of the sector is typically high quality, some quality improvements could be achieved as cooperative allocations will remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Since these vessels already produce high quality products because their catch is processed onboard soon after it is harvested, any quality improvement is likely to be slight. Improvements will be limited to those in cooperative, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Since most participants in the sector are limited in their ability to produce higher processed products, production choice changes are likely to be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

#### **Alternative 4**

Net benefits to the Nation would likely increase under Alternative 4 relative to Alternatives 1, 2, and 3. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. The favorable groundfish allocation for the Amendment 80 species, the allocation of the necessary PSC to harvest the allocation, and the ability to form cooperatives contributes the increase in net benefits to the Nation. Given the allocation of Amendment 80 species under this alternative would be near their historic average, the alternative would include enough PSC to harvest their groundfish allocation, and the alternative includes the 30 percent minimum for formation of a cooperatives, it is likely most sector participants will join a cooperative. These participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the user cap which still needs to identify by the Council. With fewer vessels, the harvesting costs should also decline.

Some additional benefits would also likely accrue from the additional 2.5 percent allocation increase for the Amendment 80 species to the CDQ program. The increased CDQ allocation will slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increase output slightly. If the CDQ program fails to harvest their entire allocation, any amount of allocation left unharvested would tend to reduce the net benefits.

The alternative would also require increased monitoring and enforcement costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches. Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

Like in Alternative 2 and 3, produce surplus is likely to decline given that individual vessel retention rates would be averaged across all cooperative participants, helping those vessels with historically low retention rates to lower their operating costs. Collectively, members of each cooperative would seek to minimize their costs of meeting the GRS to the extent possible thereby generating a producer surplus.

Like Alternative 2 and 3, this alternative would likely yield some increase in consumer surplus. Improvements will be limited to those in cooperatives, but since most (if not all members of the sector are

likely to join cooperatives) these improvements should be realized throughout the fleet. Since most participants in the sector are limited in their ability to produce higher processed products, production choice changes are likely to be limited. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

## 4 ENVIRONMENTAL ASSESSMENT

The purpose of this section is to analyze the environmental impacts of the proposed Federal action, to allocate Bering Sea and Aleutian Islands (BSAI) non-pollock groundfish and/or prohibited species catch to specific sectors operating in the BSAI area and develop a cooperative structure for the Non-American Fisheries Act (AFA) Trawl CP sector. An environmental assessment is intended, in a concise manner, to provide sufficient evidence of whether or not the environmental impacts of the action are significant (40 CFR 1508.9).

The four required components of an environmental assessment are included below: brief discussions of the need for the proposal (Section 4.1), of alternatives (Section 4.2), and of the environmental impacts of the proposed action and alternatives (Section 4.3). A list of agencies and persons consulted is included later in this document, in Section 8.1, on page 362 of this document.

### 4.1 Purpose and Need

Since the mid-1990s, the Council has recognized the need to reduce bycatch, minimize waste, and improve utilization of fish resources to the extent practicable in order to provide the maximum benefit to present generations of fishermen, associated fishing industry sectors, communities, and the nation as a whole. Since at least 1995, the Non-AFA Trawl CP sector has had the highest discard rate in the BSAI. Although the overall retention level in that sector has increased in the last decade, it is still well below other BSAI sectors. Bycatch reduction measures for the Non-AFA Trawl CP sector are a priority focus for the Council given this sector's historical difficulty in achieving acceptable bycatch levels.

In order to address this issue, the Council, under Amendment 79 to the BSAI Groundfish FMP, required all non-AFA trawl CP vessels greater than 125 ft length overall (about 58 percent of the sector) to retain a minimum percentage of their total groundfish catch. The predetermined percentage (85 percent), which represents the groundfish retention standard, will be phased in over three years. The amendment also increased the monitoring requirements for these vessels, requiring flow scales, observer stations, and observations of every haul. The amendment has not yet been approved by the Secretary, and will likely go into effect January 1, 2006.

The Non-AFA Trawl CP sector is primarily a multi-species fishery that operates under a "race for fish", where vessels attempt to maximize their harvest in as little time as possible, in order to claim a larger share of the available quota. Because vessels are competing with each other for shares of the total quota, an individual vessel may be penalized for undertaking actions to reduce bycatch, such as searching for cleaner fishing grounds. Participants in the sector have indicated that the cost of implementing Amendment 79 on a vessel-by-vessel basis could be very high.

By providing specific groundfish allocations to this sector, and allowing the formation of cooperatives, the costs associated with bycatch reduction can be mitigated. Sector allocations and associated cooperatives would allow participants to focus less on harvest maximization and more on optimizing their harvest. This in turn could reduce bycatch, improve retention, and improve utilization, while also improving the economic health of the harvesting and processing industry.

Exploring sector allocations and cooperatives also accords with the Council's long-term priority, to reduce or eliminate the "race for fish" in the North Pacific. The Council recently revised its management policy for the BSAI Groundfish FMP to include an objectives that aims to "further decrease excess fishing capacity and overcapitalization by ... extending programs such as community or rights-based management to some or all groundfish fisheries," (BSAI Groundfish FMP chapter 2).

Further elaboration on the history of the proposed action, and the Council's exact problem statement, can be found in Section 1, starting on page 1 of this document.

## **4.2 Alternatives Considered**

The analysis of the proposed action is divided into a number of decision points, relating to sector allocations and the formation of cooperatives. Section 2.4, starting on page 22 of this document, provides a detailed accounting of the various issues, components, options, and suboptions for this amendment.

For analysis, these components and options have been combined into defined alternatives. The alternatives are described in the sections that follow. Table 4-1 compares the features of each of the alternatives.

**Table 4-1 Comparison of the Alternatives**

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Primary Target Species to be Allocated</b>	None	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch	yellowfin sole, rock sole, flathead sole, Atka mackerel, Aleutian Islands Pacific Ocean perch
<b>Allocation to Sector</b>	None	<p><i>Allocation:</i> Sector's retained catch over all retained catch, 1998-2002</p> <p><i>Management:</i> Hard cap</p> <p><i>Yellowfin sole:</i> all yellowfin sole in excess of 125,000 mt threshold to be divided 30% to sector and 70% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards for yellowfin sole threshold fishery</p>	<p><i>Allocation:</i> Sector's retained catch over all total catch, 1995-2003</p> <p><i>Management:</i> Soft cap; rollover to sector</p> <p><i>Yellowfin sole:</i> all yellowfin sole in excess of 100,000 mt threshold to be divided 70% to sector and 30% to other trawl; rollover to the Non-AFA Trawl CP sector; no AFA yellowfin sideboards for yellowfin sole threshold fishery</p>	<p><i>Allocation:</i> Yellowfin sole 82.5%, rock sole 97%, flathead sole 98%, EAI/BS and CAI Atka mackerel 98% reduced to 90% over a 4-year period at 5% per year starting in second year. WAI Atka mackerel 100%. EAI and CAI AI POP 95% reduced to 90% the second year. WAI POP 98%.</p> <p><i>Management:</i> Hard cap for sector and an ICA for fixed gear sectors and trawl limited access fishery; rollover of allocated species and PSC to H&amp;G sector, halibut PSC rollover discounted 5%</p> <p><i>Yellowfin sole:</i> all yellowfin sole in excess of 125,000 mt threshold to be divided 60% to H&amp;G sector and 40% to the general limited access fishery; allow rollovers to the Non-AFA Trawl CP sector; no AFA yellowfin sole sideboards in the threshold fishery</p>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Allocation of Prohibited Species</b>	PSC allocated by target fishery and shared among all trawl vessels	Sector allowance based on average historic PSC usage in directed fishery for allocated primary species plus Pacific cod, 1998-2002	Sector allowance based on: a) average PSC usage, by fishery, of all trawl in each PSC fishery group for allocated primary species plus Pacific cod, 1995-2003 b) apply sector proportion as determined above c) reduce by 5%	Two halibut PSC options 1) H&G sector allowance based on average historic usage of PSC from 2000-2004. Reduce calculated halibut PSC allowance to 80% of apportionment amount phased in at 5% per year starting in the second year. 2) Allocate PSC based on sector's percentage allocations of Amendment 80 species multiplied by trawl PSC amounts apportioned to target species staying within 2,200 mt minimum and 2,450 mt maximum.  Crab PSC apportionment amounts are 37.52% red king crab, 61.44% <i>C. opilio</i> , 52.64% for Zone 1 <i>C. bairdi</i> , and 29.59% for Zone 2 <i>C. bairdi</i> . Reduce crab PSC allocations to 80% of apportionment amount phased in at 5% per year starting in second year.
<b>Sector Eligibility</b>	determined by Congress	Determined by Congress	determined by Congress	determined by Congress
<b>Cooperative formation</b>	None	<i>Threshold:</i> 15% minimum of eligible participants and must be comprised of at least two separate entities	<i>Threshold:</i> 67% minimum of eligible vessels and must be comprised of at least three separate entities	<i>Threshold:</i> 30% minimum of eligible vessels and must be comprised of at least three separate entities

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>Cooperative allocation</b>	None	<p><i>Allocation:</i> based on retain catch history, 1998-2002</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole</p>	<p><i>Allocation:</i> based on total catch history, 1995-2003 drop 3</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole</p>	<p><i>Allocation:</i> based on total catch history, 1998-2004 drop 2</p> <p>For Atka mackerel each vessel would receive its historic catch for all area combined. Vessels less than 200' in length and less than 2% of the sector's Atka mackerel history will receive their allocation by area according to catch distribution in those areas. The remainder of the Atka mackerel allocation in each of the subareas will be allocated equally in each area to vessels that are greater than 200' length or have more than 2% of the sector's Atka mackerel allocation</p> <p>A qualified vessel that has not fished after 1997 will receive an allocation no less than 0.5% for yellowfin sole, 0.5% for rock sole, and 0.1 percent for flathead sole</p>
<b>Excessive share limits</b>	None	No limit on consolidation	No single person can hold no more than 50% of the catch history of an allocated species	<p>No single person can hold no more than 30% of the catch history of an allocated either on an aggregate basis Initial allocation grandfathered</p> <p>No vessel may harvest more than 10% of the entire sector allocation. Initial allocation grandfathered</p>

	Alternative 1 (Status Quo)	Alternative 2	Alternative 3	Alternative 4 (Preliminary Preferred)
<b>Sideboards</b>	None	<p><u>For sector:</u> established based on participation in other fisheries, 1998-2002; for GOA halibut PSC based on usage by area, 1998-2002; only vessels that have GOA wide weekly participation in the flatfish fisheries over the threshold during the qualifying period would be eligible to participate in the GOA flatfish fisheries</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><u>For sector:</u> established based on participation in other fisheries, 1995-2003; for GOA halibut PSC based usage by area, 1995-2003</p> <p><u>Within sector:</u> established between cooperative and non-cooperative participants for unallocated species</p>	<p><b>BSAI</b> None</p> <p><b>GOA</b></p> <ol style="list-style-type: none"> <li>1) Eligible to participate in the GOA flatfish fisheries based on 10 weeks of participation in flatfish fishery using 1998-2004.</li> <li>2) Sector vessels that have fished 80% of their weeks in the GOA from 2000 to 2003 will be exempt from GOA halibut sideboards</li> <li>3) Gulf-wide halibut sideboards calculated based on actual usage for each target fisheries within each area for the Non-AFA Trawl CP sector using 1998-2004</li> <li>4) GOA pollock, Pacific cod, and directed rockfish sideboards for the Non-AFA Trawl CP sector based on retained catch of the sector as a percent of retain catch of all sectors from 1998-2004</li> <li>5) CGOA rockfish demonstration program takes precedence.</li> <li>6) Sideboards apply to vessels and LLPs used to generate harvest shares</li> <li>7) GOA rationalization program when complete will supersede Amendment 80 sideboards</li> <li>8) Sideboards for PSC and GOA would be allocated between cooperative and non-cooperative vessel/licenses based on same formula as Component 10</li> <li>9) Each cooperative will receive its GOA sideboards</li> </ol>

	<b>Alternative 1 (Status Quo)</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4 (Preliminary Preferred)</b>
<b>CDQ</b>	7.5% of groundfish and prohibited species (except herring) allocated to CDQ multispecies fishery	10% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	15% of allocated species, plus secondary species caught incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation	10% of allocated species and secondary species caught (except Pcod) taken incidentally in directed fisheries, to CDQ multispecies fishery; PSQ proportional to the CDQ allocation

#### 4.2.1 Alternative 1: No Action

With the exception of Amendment 79, which is yet to be approved by the Secretary of Commerce (SOC), the current management of groundfish and prohibited species catch in the BSAI would remain in effect for this alternative. In general, after deducting 7.5 percent for reserves and 7.5 percent for the CDQ program, the remaining portion of TAC is available to any vessel with a federal license. For Eastern Aleutian District and the Bering Sea subarea Atka mackerel, up to 2 percent of the ITAC may be allocated to jig gear. Currently, only one percent is allocated to the jig gear. For further details on the current management of the species to be allocated under this proposed action, please refer to Section 3.1.1.

Although Amendment 79 to the BSAI Groundfish FMP, the groundfish retention standard (GRS), has not yet been implemented, a final rule should be published before final action on Amendment 80, which is scheduled for December 2005. Currently, there are three potential outcomes. One is the SOC could implement GRS in 2006 at 75 percent. Another is that the SOC approves Amendment 79 at 65 percent starting in 2007. Finally, the SOC could disapprove Amendment 79. Due to the timing of Amendment 80 and Amendment 79, the no action alternative could change after initial review of Amendment 80 in October 2005 but before final review in December 2005. For purposes of the initial review of Amendment 80, the no action alternative will include a GRS phased in over a four year period for Non-AFA Trawl CP vessels greater than 125 ft length overall starting in 2007 at 65 percent and culminating in 2010 at 85 percent. The decision to use this scenario is based on the Council's recommendation to the SOC at the June 2005 meeting to implement Amendment 79 in 2007 at 65 percent to allow ample time for Non-AFA Trawl CP sector to complete any retrofits necessary to meet the enforcement and monitoring requirements included in Amendment 79. In addition, the Council felt it was important to allow the sector time to develop a vessel buyback program authorized under the Consolidated Appropriations Act of 2005. Finally, the Council also clarified at the June 2005 meeting that the specific years tied to GRS in the original action are of less importance than starting at the intended 65 percent.

#### 4.2.2 Alternative 2: Multiple Cooperatives

This alternative would allocate the following species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel by subarea, and Aleutian Islands subarea Pacific Ocean perch—referred to as primary target species. Allocation of these species to the sector would be in proportion to the retained catch of the Non-AFA Trawl CP sector relative to the retained catch of all vessels, for the years 1998 to 2002.<sup>58</sup> Non-AFA Trawl CP sector allocations of the primary target species would be managed as a hard cap: when the sector harvests all of its allocation of a primary target species, all directed fisheries for that species, as well as those fisheries that catch species incidentally, would close for the sector.

The unallocated portion of the primary target species quota would be reserved for the Non-H&G trawl fishery, which is composed of AFA Trawl CP sector, AFA Trawl CV sector and Non-AFA Trawl CV sector. Primary species quota cannot be rolled over between trawl sectors under this alternative.

This alternative includes a quota threshold of 125,000 mt for the yellowfin sole quota. If, in a given year, the quota exceeds this threshold, the excess would be allocated in the following manner: 30 percent to the Non-AFA Trawl CP sector and 70 percent to the limited access trawl fishery. Specifically for this excess allocation, a two-way rollover option is allowed. A portion of the yellowfin sole reserve allocated to either the Non-AFA Trawl CP sector or the limited access trawl fishery would be rolled over to the other sector. A portion of the yellowfin sole reserve allocated to either the Non-AFA Trawl CP sector or the limited access trawl fishery would be rolled over to the other sector, if, after a specified date (August 1 or

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<sup>58</sup> All allocations are after allocations to the CDQ program and, in the case of Atka mackerel, after any allocation to the jig sector.

September 1), there is any quota that is projected to remain unused. AFA sideboards do not apply to the yellowfin sole threshold fishery.

The Non-AFA Trawl CP sector would receive a PSC allowance under this alternative, which would be based on the sector's historical usage of PSC in the directed fisheries for the allocated primary species plus Pacific cod during the years from 1998 to 2002, inclusive.

The eligibility criteria for the Non-AFA Trawl CP sector have been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program, which was passed in November 2004. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on its License Limitation Program permit (LLP), and must own a Non-AFA vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operative as a cooperative, membership must include as least three separate entities and must be composed of at least 15 percent of the qualified vessels. Those participants who do not elect to join a cooperative may either form their own cooperative (with at least 15 percent of qualified licenses with cooperative endorsements) or participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowance to the cooperative and sector's limited access fishery would be in proportion to the total catch of the primary target species of the eligible license holders included in each pool, for the years 1998-2002 by species, during this period. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1998-2002 for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is than allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sectors mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

Within the Non-AFA Trawl CP sector, consolidation would not be constrained. An eligible participant (either individual or entity) would not be limited as to the percentage of the Non-AFA Trawl CP sector allocation it can use or the amount of licenses and qualified catch that it may hold.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation, (1998 to 2002). Sideboards for those species that close on TAC in the GOA and the BSAI would be established based on retained catch of the Non-AFA Trawl CP sector divided by the retained catch of all sectors from

1998 to 2002. Sideboards would also be established for halibut PSC in the GOA based on actual halibut PSC usage by the Non-AFA Trawl CP sector in each target fishery in the deep and shallow water complexes by area between 1998 and 2002. Only vessels with LLPs that have Gulf wide weekly participation in the flatfish fisheries over a threshold number of weeks during a qualifying period would be eligible to participate in those fisheries. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, sideboards would be established between cooperative and non-cooperative participants for unallocated species, based on the same years. Sideboards would apply to eligible licenses and associated vessels from which the catch history arose.

The CDQ program would be allocated 10 percent of each primary target species, and the associated species taken incidentally, except Pacific cod, in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would also continue to be issued at the same percentage as the CDQ groundfish allocation.

#### **4.2.3 Alternative 3: Single Cooperative**

This alternative would allocate the following species to the Non-AFA Trawl CP sector: yellowfin sole, rock sole, flathead sole, Atka mackerel by subarea, and Aleutian Island Pacific Ocean perch--referred to as the primary target species. Allocation of these species to the sector would be in proportion to the retained catch of the Non-AFA Trawl CP sector relative to the total catch by all vessels, for the years 1995 to 2003. The unallocated portion of the primary target species quota would be reserved for the Non-H&G trawl fishery, which is made up of the AFA Trawl CP sector, AFA Trawl CV sector, and the Non-AFA Trawl CV sector. Non-AFA Trawl CP sector allocations of the primary target species would be managed as a soft cap: when the sector harvests all of its allocation of a primary target species, the species would be placed on prohibited species status, and would need to be discarded.

Alternative 3 also includes a rollover provision: any portion of the primary target species in the general limited access fishery projected to remain unharvested would be rolled over to the Non-AFA Trawl CP sector.

This alternative also includes a quota threshold of 100,000 mt for the yellowfin sole quota. If, in a given year, the quota exceeds this threshold, the excess would be allocated in the following manner: 70 percent to the Non-AFA Trawl CP sector and 30 percent to the limited access trawl fishery. Any yellowfin sole above the threshold that is projected by the NOAA Regional Administrator to go unharvested would be rolled over to the other threshold recipients (Non-AFA Trawl CP sector or the general limited access fishery).

The Non-AFA Trawl CP sector would receive a PSC allowance under this alternative. PSC usage of all trawl vessels in each PSC fishery group for allocated primary species plus Pacific cod, from 1995 to 2002, would be calculated, to which the proportion of the Non-AFA Trawl CP sector's share of the target species quota (as determined in Component 3) would be applied. The sector's PSC allowance for each prohibited species would be 95 percent of the total amount calculated using this formula.

The eligibility criteria for the Non-AFA Trawl CP sector have been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on their LLP and must own a vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to be included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operate as a cooperative, membership must include at least three separate entities and would need to be composed of at least 67 percent of the qualified vessels. Those participants who do not elect to join a cooperative could participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowance to the cooperative and sector's limited access fishery would be in proportion to the total catch of the primary target species of the eligible license holders included in each pool, for the years 1995-2003, dropping the three lowest annual catches for the license, by species, during this period. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1995-2003 drop three years for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is then allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sector's mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

Consolidation in the Non-AFA Trawl CP sector would be limited by a use cap that applies to each person (using individual and collective rule). No single person may use or hold more than 50 percent of the sector's combined allocation for each allocated species. However, if a person's attributed history at initial allocation is greater than the use cap threshold, the person's ability to exceed the cap would be grandfathered.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation, (1995 to 2003). Sideboards for those species that close on TAC in the GOA and the BSAI would be established based on total catch of the Non-AFA Trawl CP sector divided by the total catch of all sectors from 1995 to 2003. Sideboards would also be established for halibut PSC in the GOA based on the usage by the Non-AFA Trawl CP sector in each target species in the deep and shallow water complexes by area between 1995 and 2003. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, sideboards would be established between cooperative and non-cooperative participants for unallocated species, based on the same years. Sideboards would apply to eligible licenses and associated vessels from which the catch history arose.

The CDQ program would receive an allocation of 15 percent of each primary target species, and the associated species taken incidentally in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would be issued at the same percentage as the CDQ groundfish allocation.

#### **4.2.4 Alternative 4: Preliminary Preferred Alternative**

This alternative would allocate the following species portions to the Non-AFA Trawl CP sector: yellowfin sole 82.5 percent, rock sole 97 percent, and flathead sole 98 percent. For EAI/BS and CAI Atka

mackerel the allocation would be 98 percent the first year but then decrease 2 percent each year over a 4-year period to 90 percent. 100 of the WAI Atka mackerel would be allocated to the Non-AFA Trawl CP sector. For EAI and CAI POP the allocation would be 95 percent the first year decreasing to 90 percent the second year of the program. For WAI POP, 98 percent would be allocated to the Non-AFA Trawl CP sector. The unallocated portion of the primary target species quota would be reserved for the trawl limited access fishery, which is made up of the AFA Trawl CP sector, AFA Trawl CV sector, and the Non-AFA Trawl CV sector. An ICA for the fixed gear sectors and trawl limited access fishery would be removed before sector allocations. AFA sideboards would be determined after CDQ reserve amounts are deducted from TAC. Non-AFA Trawl CP sector allocations of the primary target species would be managed as a hard cap; when the sector harvests all of its allocation of a primary target species, the cooperative would be restricted from directed fishing for that species. Allocations to the general limited access fishery would be managed using an incidental catch allowance ICA.

Alternative 4 also includes a rollover provision; any portion of the primary target species and PSC in the general limited access fishery projected to remain unharvested by NOAA Fisheries would be rolled over to the Non-AFA Trawl CP sector. Any rollover of halibut PSC to the Non-AFA Trawl CP sector will be discounted 5 percent. NOAA Fisheries will perform a review on May 1, August 1, and any time after August 1 as appropriate to determine rollover amounts by considering current catch and PSC usage, historic catch and PSC usage, harvest capacity and stated harvest intent.

This alternative would adjust the allocation of yellowfin sole between the Non-AFA Trawl CP sector and the trawl limited access fishery when the ITAC exceeds 125,000 mt. If, in a given year, the ITAC exceeds this threshold, the portion that is an excess of the 125,000 mt threshold would be allocated in the following manner: 60 percent to the Non-AFA Trawl CP sector and 40 percent to the limited access trawl fishery. Any yellowfin sole above the threshold that is projected by the NOAA Regional Administrator to go unharvested would be rolled over from the trawl limited access fishery to the Non-AFA Trawl CP sector. AFA yellowfin sole sideboards do not apply to the threshold fishery.

In April 2006, the Council narrowed the halibut PSC apportionment options to two. The first option would base halibut PSC apportionment to the Non-AFA Trawl CP sector on historical usage of PSC from 2002 to 2004. The sector's PSC allowance for each prohibited species would be reduced to 80 percent of the total calculated amount phased in over a four year at 5 percent per year starting in the second year of the program. The second option would apportion halibut PSC based on the sector's percentage allocations of target species (see above for percentages) multiplied by the trawl PSC amounts for these species. Trawl PSC apportionment amounts would be based on 2002 to 2004 average consumption rate for all trawlers for each of the Amendment 80 species plus Pacific cod multiplied by the TAC for the upcoming year or previous years catch whichever is less. The following maximum and minimum will apply to this PSC option: 2,200 mt to 2,400 mt for the Non-AFA Trawl CP sector and 950 mt to 1,200 mt for trawl limited access fishery. For crab PSC, the following percentages will be applied annual total trawl crab PSC apportionment amounts published during final specifications: 37.52 percent for red king crab, 61.44 percent for *C. opilio*, 52.64 percent for Zone 1 *C. bairdi*, and 29.59 percent for Zone 2 *C. bairdi*. These allocations would then be reduced 5 percent per year starting in the second year of the program until the reduced allocation is 80 percent of the initial allocation.

The eligibility criteria for the Non-AFA Trawl CP sector was been determined by Congress in the provisions of the BSAI CP Capacity Reduction Program. In order to qualify for the sector, a license holder must have trawl and catcher processor endorsements on their LLP and must own a vessel that caught and processed 150 mt of groundfish with trawl gear between 1997 and 2002.

Only catch history from eligible vessels will be credited in the cooperative program. The catch history assigned to the first license of the eligible vessel will be the catch history of the eligible vessel. Any eligible vessel that has sunk, is lost, or becomes inoperable (total constructive loss) or ineligible during or after the qualifying period will be credited to the license that arose on the vessel. Any such license

assigned to an eligible vessel will be credited with the catch history of that vessel during cooperative apportionment.

Licenses and vessels used to qualify for Amendment 80 (either to included in the Non-AFA Trawl CP sector or to be used in Amendment 80 cooperative formation) are restricted from being used outside of the Amendment 80 sector, except that any eligible vessel authorized to fish pollock under the AFA would still be authorized to fish under this statute.

To operate as a cooperative, membership must include as least three separate entities and would need to be composed of at least 30 percent of the qualified vessels. Those participants who do not elect to join a cooperative could participate outside the cooperative in the sector's limited access fishery.

Allocation of the primary target species and PSC allowances to a cooperative (and sector's limited access fishery) would be in proportion to its member's total catch of the primary target species by the eligible vessel during the years 1998-2004 dropping the two lowest catch years by species. PSC would be apportioned to target species and Pacific cod based on average use of PSC in each target species during years 1998-2004.

Atka mackerel will be allocated using two different apportionment methods to two different vessel types. Each vessel will receive credit for its historic share of the sector's Atka mackerel allocation using total catch from 1998-2004 drop two years for all subareas combined. Allocations to non-mackerel vessels (less than 200' in length having less than 2 percent of the sector's Atka mackerel history) would receive their allocation by area according to each non-mackerel vessel's catch in each subarea during this same year period. After removing the non-mackerel portion, the remaining amount is than allocated to the mackerel vessels (vessels that are greater than 200' in length or less than 2 percent of the sectors mackerel allocation) based on their respective percentages equally in each area.

Notwithstanding the qualifying history of the vessel, a qualified vessel that has not fished after 1997 will receive an allocation under the cooperative program less than 0.5 of the yellowfin sole catch history, 0.5 percent of the rock sole catch history, and 0.1 percent of the flathead sole catch history.

The alternative would restrict consolidation in the Non-AFA Trawl CP sector on two levels. First, no single person (using individual and collective rule) can hold catch history in excess of 30 percent of total sector apportionment of all allocated species combined. In addition, no vessel can harvest more than 10 percent of the entire sector's allocation. Persons (individuals or entities) that exceed the caps in the initial allocation will be grandfathered.

Sideboards for the Non-AFA Trawl CP sector would be established in regulation based on the sector's participation in other fisheries during the same years used to calculate the sector's allocation. Sideboards for those species that close on TAC in the GOA would be established based on total of the Non-AFA Trawl CP sector from 1998-2004. There would be no BSAI groundfish sideboards.

The alternative includes several GOA sideboards provisions: 1) eligibility to participate in the GOA flatfish fisheries based on participation in that fishery for greater than 10 weeks, 2) exemption for Non-AFA Trawl CP vessels that have fished more than 80 percent of their weeks in the GOA flatfish fisheries during the 2000 and 2003 period will be exempt from GOA halibut sideboards, 3) Gulf-wide halibut sideboards for deep and shallow water complex fisheries based on the actual rate for each target fisheries, 4) GOA pollock, Pacific cod, and directed rockfish species (Pacific Ocean perch, Northern rockfish, and Pelagic shelf rockfish) based on retained catch for the years 1998 to 2004. The sideboards would remain in place until such time as other fisheries are rationalized (including sector allocations for the Pacific cod fishery). Within the Non-AFA Trawl CP sector, each cooperative will receive its GOA sideboards. Cooperatives that sign an inter-cooperative agreement that would allow aggregation of sideboards will be managed as aggregate sideboard. Sideboards limits will be managed as a hard cap.

The CDQ program would receive an allocation of 10 percent of each primary target species, and the associated species taken incidentally in the prosecution of these directed fisheries. The prohibited species allowance allocated to the CDQ program as prohibited species quota reserves would be issued at the same percentage as the CDQ groundfish allocation.

### 4.3 Probable Environmental Impacts

This section analyzes the alternatives for their effect on the biological, physical, and human environment. The alternatives change the management of the primary target fisheries, by providing a sector allocation to the Non-AFA Trawl CP sector and allowing them to create (a) cooperative(s). The environmental impacts are therefore discussed in reference to the impacts of the primary target fisheries.

As appropriate, each section discusses the environment that would be affected by the alternatives, and then describes the impacts of the alternatives. The following components of the environment are discussed: the primary target species to be allocated under the alternatives, prohibited species, other fish species, benthic habitat and essential fish habitat, marine mammals and seabirds, economic and socioeconomic components, and the ecosystem as a whole. In most instances, the effects of Alternatives 2 and 3 are considered together, as there is little difference between these alternatives in terms of their impact on the physical and biological environment.

#### 4.3.1 Criteria Used to Evaluate the Alternatives

The intent of the Environmental Assessment is to determine whether the proposed action is likely to produce a significant impact on the environment, in which case preparation of an Environmental Impact Statement is required. Although economic and socio-economic impacts must be evaluated, such impacts by themselves, without influence on the physical or biological environment, are not sufficient to require the preparation of an Environmental Impact Statement.

In order to assess whether impacts are significant, the analysts have established the criteria listed in Table 4-2. Although the economic and socioeconomic impacts of the alternatives are fully discussed in the sections that follow, significance criteria for these impacts have not been established as such criteria are not necessary for the purposes of this Environmental Assessment.

**Table 4-2 Criteria used to Evaluate the Alternatives**

Component	Criteria
Fish species	An effect is considered to be significant if it can be reasonably expected to jeopardize the sustainability of the species or species group.
Habitat	An effect is considered to be significant if it exceeds a threshold of minimal or temporary disturbance to habitat.
Seabirds and marine mammals	An effect is considered to be significant if it can be reasonably expected to alter the population trend outside the range of natural fluctuation.
Ecosystem	An effect is considered to be significant if it produces population-level impacts for marine species, or changes community- or ecosystem-level attributes beyond the range of natural variability for the system.

#### 4.3.2 Primary Target Species

The primary target species that are to be allocated under the proposed action are yellowfin sole, rock sole, flathead sole, Atka mackerel, and Aleutian Islands Pacific Ocean perch. Table 4-3 illustrates the biomass, and allowable and actual catch levels of these species. Historic catch levels of these species can be found in Section 3.1.2.

**Table 4-3 Projected Biomass and Catch Specifications of Primary Target Species, in mt.**

	2004					2005	
	Projected Biomass	Overfishing Level	Acceptable Biological Catch	Total Allowable Catch	Actual Catch	Projected Biomass	Total Allowable Catch
Yellowfin sole	1,560,000 <sup>1</sup>	135,000	114,000	86,075	69,021	1,560,000	90,686
Northern rock sole	1,160,000 <sup>1</sup>	166,000	139,000	41,000	47,734	1,380,000	41,500
Flathead sole	505,000 <sup>2</sup>	86,200	61,900	19,000	16,849	560,000	19,500
Atka mackerel <sup>3</sup>	286,000 <sup>2</sup>	78,500	66,780	63,000	55,963	486,000	63,000
AI Pacific Ocean perch <sup>4</sup>	349,000 <sup>2</sup>	15,800	11,172	11,172	10,493	379,000	11,200

<sup>1</sup>represents age 2+ biomass

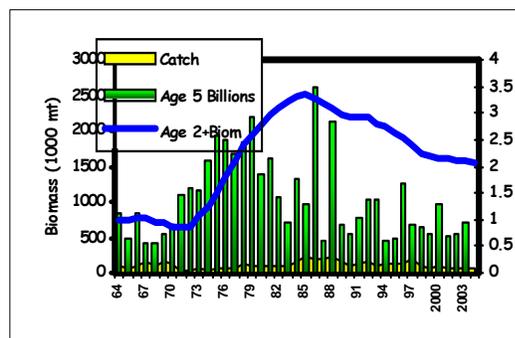
<sup>2</sup>represents age 3+ biomass

<sup>3</sup>Atka mackerel catch specifications are listed for the BSAI as a whole, but for management are further subdivided by district

<sup>4</sup>Pacific Ocean perch biomass and overfishing level is assessed BSAI-wide; catch specifications are listed for the Aleutian Islands as a whole, but for management are further subdivided by district.

### Yellowfin sole

Yellowfin sole is one of the most abundant flatfish species in the eastern Bering Sea. They inhabit the continental shelf, and abundance in the Aleutian Islands region is negligible. The yellowfin sole stock has been declining since the mid-1980s, however in recent years appears to be more stable. Abundance and recruitment trends are illustrated in Figure 4-1.

**Figure 4-1 Yellowfin Sole Abundance and Recruitment Trends**

The directed fishery is prosecuted beginning in late January or February, and continuing through to the early fall. The target fishery is allocated a halibut PSC allowance in four seasons, and the fishery has been constrained by this cap. Once the halibut PSC allowance is used, the directed fishery must close until the next PSC seasonal allowance is allocated. In 2004, however, the yellowfin sole fishery did not exceed the halibut PSC limit, but was in fact closed to directed fishing on June 4<sup>th</sup> as it approached its TAC limit. In recent years, the yellowfin sole fishery has also been constrained by the red king crab PSC limit.

Other than in the directed fishery, yellowfin sole is also caught incidentally in the directed rock sole, flathead sole, Pacific cod, and in small amounts the pollock fisheries. The overall discard rate of yellowfin sole between 2000 and 2003 was about 15 percent. While most of these discards occur in the directed fishery (7,370 mt in 2003), the discard rate is highest, at 80 percent, in the Pacific cod fishery (which discarded 1,348 mt in 2003) (Wildebuer and Nichol 2004)

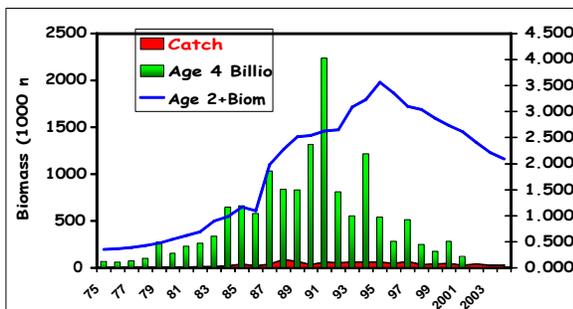
The predominant species that are caught incidentally in the yellowfin sole fishery include pollock, rock sole, Pacific cod, general groundfish, flathead sole, arrowtooth flounder (Wildebuer and Nichol 2004).

Further information on yellowfin sole may be found in the yellowfin sole chapter of the annual *Stock Assessment and Fishery Evaluation* report (Wildebuer and Nichol 2004), and in the *Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement*, also referred to as the Groundfish PSEIS (NMFS 2004b). Habitat information for yellowfin sole is contained in the *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska*, referred to as the EFH EIS (NMFS 2005).

### Northern rock sole

Yellowfin sole and northern rock sole are the dominant flatfish species in the Bering Sea. Although two species of rock sole are known to occur in the North Pacific ocean, the northern rock sole predominates in the BSAI. Although biomass of rock sole increased from 2002 to 2003, it is expected to decline over the next few years. Abundance and recruitment trends are illustrated in Figure 4-2.

**Figure 4-2 Northern Rock Sole Abundance and Recruitment Trends**



Adults exhibit a benthic lifestyle, and in the eastern Bering Sea, occupy separate winter and summertime feeding distributions on the continental shelf. Northern rock sole spawn during the winter-early spring period of December-March. Rock sole are important as the target of a high value roe fishery in February and March that accounts for the majority of the annual catch. In recent years, the rock sole fishery has been constrained by halibut and red king crab PSC limits.

Other than in the directed fishery, rock sole is also caught incidentally in the directed rock sole, flathead sole, Pacific cod, and in small amounts the pollock fisheries. From 1987 to 2000 rock sole were discarded in greater amounts than they were retained. The past three years indicate increased utilization of catch (between 55 and 66 percent of rock sole were retained). Discards are highest in the directed fishery (15,903 mt in 2003) (Wildebuer and Walters 2004).

The predominant species that are caught incidentally in the rock sole fishery include pollock, Pacific cod, general groundfish, flathead sole, arrowtooth flounder, and Alaska plaice (Wildebuer and Walters 2004).

Further information on northern rock sole may be found in the northern rock sole chapter of the annual *Stock Assessment and Fishery Evaluation* report (Wildebuer and Walters 2004), and in the Groundfish PSEIS (NMFS 2004b) and the EFH EIS (NMFS 2005).

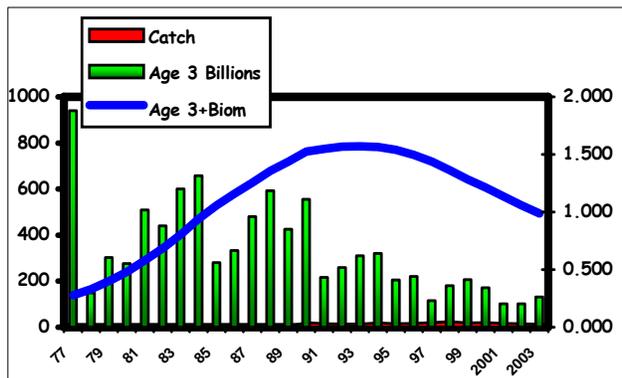
**Flathead sole**

Flathead sole is managed as a unit stock with the related and morphologically similar Bering Flounder, whose ranges overlap in the BSAI (Spencer, Walters, and Wildebuer 2004).

Abundance and recruitment trends are illustrated in Biomass peaked in early 1990s, and has been declining since that time.

Flathead sole are caught between January and early fall, often incidentally in directed yellowfin sole and rock sole fisheries. Flathead sole are often targeted later in the year. As with yellowfin sole, the fishery is often constrained by halibut and red king crab PSC limits, although in 2004, the directed fishery was instead closed as it exceeded the TAC.

**Figure 4-3 Flathead Sole Abundance and Recruitment Trends**



The overall discard rate for flathead sole in 2003 was approximately 28 percent of the catch (3,866 mt). In addition to the directed flatfish fisheries, flathead sole is also caught in the Pacific cod fishery and the pelagic trawl pollock fishery (Spencer, Walters, and Wildebuer 2004).

Further information on flathead sole may be found in the flathead sole chapter of the annual *Stock Assessment and Fishery Evaluation* report (Spencer, Walters, and Wildebuer 2004), and in the Groundfish PSEIS (NMFS 2004b) and the

EFH EIS (NMFS 2005).

### **Atka mackerel**

**Figure 4-4 Atka Mackerel Abundance and Recruitment Trends**

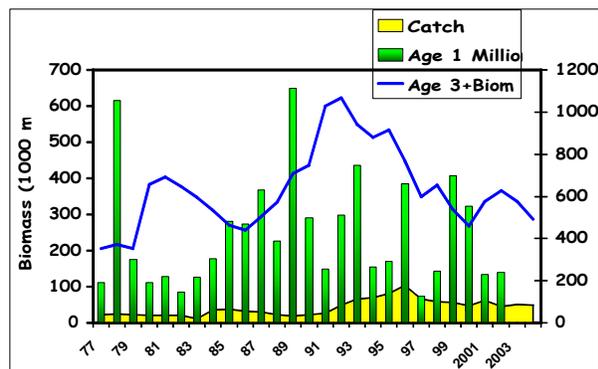
The center of abundance for Atka mackerel is in the Aleutian Islands, with a geographical range extending to the waters off Kamchatka, the eastern Bering Sea, and the Gulf of Alaska. Tag capture information from Alaska suggests that Atka mackerel populations are localized and do not travel long distances. Atka mackerel are not targeted in the eastern Bering Sea.

Biomass increased from 1977 to a peak in 1992, declined over the 1990s, and in recent years has fluctuated. Abundance and recruitment trends are illustrated in Figure 4-4.

Catches have been relatively high since 1992, in response to evidence of a large exploitable biomass in the central and western Aleutian Islands. The Atka mackerel fishery takes place primarily with bottom trawl gear at depths of less than 200 m. The fishery is highly localized and takes place in the same few locations each year (Lowe, Ianelli, Zenger, Aydin, and Lauth 2004).

In 1993, TAC allocations for Atka mackerel in the Aleutian Islands subarea were divided into districts, in part to allow localized management. In 2005, the TACs for Atka mackerel by district were 7,500 mt in the combined Eastern Aleutian Islands district/Bering Sea subarea, 35,500 in the Central Aleutian Islands, and 20,000 in the Western Aleutian Islands.

Atka mackerel are an important prey for Steller sea lions, and management measures have been taken to reduce the impacts of an Atka mackerel fishery on Steller sea lions. Since June 1998, the Atka mackerel fishery has been dispersed, both temporally and spatially, to reduce localized depletions of Atka mackerel. The TAC is now be equally split into two seasons, and the amount taken within sea lion critical habitat is limited.



Atka mackerel are not commonly caught incidentally in other directed Aleutian Islands fisheries. The largest amounts of discards of Atka mackerel, which are likely undersized fish, occur in the directed Atka mackerel trawl fishery. Atka mackerel are also caught as bycatch in the trawl Pacific cod and Pacific Ocean perch fisheries (Lowe, Ianelli, Zenger, Aydin, and Lauth 2004).

Further information on Atka mackerel may be found in the Atka mackerel chapter of the annual *Stock*

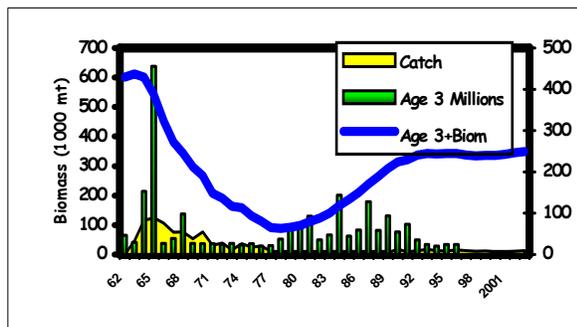
*Assessment and Fishery Evaluation* report (Lowe, Ianelli, Zenger, Aydin, and Lauth 2004), and in the Groundfish PSEIS (NMFS 2004b) and the EFH EIS (NMFS 2005).

### **Aleutian Islands Pacific Ocean perch**

Pacific ocean perch (commonly referred to by its acronym POP) are the dominant red rockfish species in the north Pacific. They are caught primarily along the Aleutian Islands, and to a lesser extent in the eastern Bering Sea and Gulf of Alaska.

Pacific ocean perch inhabit the outer continental shelf and upper slope regions of the north Pacific Ocean and Bering Sea, and are managed as a single stock.

Heavy exploitation by foreign fleets resulted in peak catches of 47,000 mt in the eastern Bering Sea in 1961, and 109,100 mt in 1965 in the Aleutian Islands, and subsequent biomass declines. Above average year classes in the early 1980s has boosted biomass levels, which have remained relatively stable since 1995. Abundance and recruitment trends are illustrated in Figure 4-5.

**Figure 4-5 Pacific Ocean Perch Abundance and Recruitment Trends**

ABCs and TACs for POP are apportioned by subarea, and for the Aleutian Islands, are further allocated by district. POP is not a directed fishery in the Bering Sea. In 2005, the TAC by district for POP was 3,080 mt in the eastern Aleutian Islands, 3,035 in the central Aleutian Islands, and 5,085 in the western Aleutian Islands.

The discard rate of POP in the Aleutian Islands averaged 15 percent between 1990 and 2003, and was 16 percent in 2003 (2,040 mt).

Further information on Pacific Ocean perch may be found in the Pacific Ocean perch chapter of the annual *Stock Assessment and Fishery Evaluation* report (Spencer, Ianelli, and Zenger 2004), and in the Groundfish PSEIS (NMFS 2004b) and the EFH EIS (NMFS 2005).

### Effects of the alternatives

The current fishery management program was analyzed in detail in the Groundfish PSEIS (NMFS 2004b), and updated in the annual Environmental Assessment of Harvest Specifications for the Years 2005-2006 (NMFS 2004a). These analyses concluded that the primary target species are all at sustainable population levels. Under the existing management program, the probability that overfishing would occur is low for all stocks, as risk averse measures are built into the management program. As a result, impacts on primary target stocks under Alternative 1 are determined not to be significant.

Alternatives 2, 3 and 4 are not distinguishable in terms of impacts to the primary target species, and are considered together. Under both alternatives, a sector allocation is made that will allow the formation of cooperatives. This will change fishing patterns, and may distribute fishing for the primary target species over a longer season or more diverse area.

### 4.3.3 Prohibited Species

Prohibited species in the BSAI Groundfish FMP are Pacific halibut, Pacific herring, Pacific salmon and steelhead, king crab, and Tanner crab. These species must be avoided while fishing for groundfish, and must be returned to the sea with a minimum of injury except when their retention is authorized by other applicable law. In order to control the catch of those species in the groundfish fisheries, the Council has instituted prohibited species catch limits for the trawl fisheries for halibut, herring, red king crab, *Chionoecetes bairdi* crab, *C. opilio* crab, and Chinook and other salmon. These PSC limits are applied by target fishery and season.

Table 4-4 illustrates the contribution, in 2003, of the primary target species fisheries to the overall bycatch of prohibited species. The Atka mackerel and Pacific Ocean perch directed fisheries catch very little PSC. Among the flatfish targets, minimal herring and salmon is caught incidentally. Halibut and crab are, however, incidentally caught in these fisheries. The rest of this section will concentrate on these prohibited species.

**Table 4-4 Contribution of Directed Fishery to Overall Bycatch of Prohibited Species in 2003.**

Directed Fishery	Sectors prosecuting directed fishery <sup>1</sup> CP = Catcher Processor CV = Catcher Vessel	Halibut <sup>2</sup>	Herring <sup>2</sup>	Red king crab <sup>2</sup>	<i>C. bairdi</i> crab <sup>2</sup>	Other tanner crab <sup>2</sup>	Salmon <sup>2</sup>
Yellowfin sole	Non-AFA Trawl CP AFA Trawl CP Trawl CV	19%	3%	26%	22%	44%	<1%
Rock sole	Non-AFA Trawl CP AFA Trawl CP Trawl CV <sup>3</sup>	23%	<1%	50%	22%	5%	<1%
Flathead sole	Non-AFA Trawl CP AFA Trawl CP <sup>3</sup> Trawl CV <sup>3</sup>	4%	<1%	<1%	29%	29%	<1%
Atka mackerel	Non-AFA Trawl CP	2%	0	<1%	0	0	<1%
Al Pacific Ocean perch	Non-AFA Trawl CP AFA Trawl CP <sup>3</sup> Trawl CV <sup>3</sup> Hook & Line CP <sup>3</sup> Hook & Line CV <sup>3</sup> Jig <sup>3</sup>	1.6%	0	1.5%	<1%	0	<1%

<sup>1</sup>Source: NOAA Fisheries Blend data, 2000<sup>2</sup>Source: Hiatt et al. 2004**Pacific Halibut**

Pacific halibut fisheries are managed by the International Pacific Halibut Commission (IPHC), under a treaty between the U.S. and Canada. The IPHC management process and stock assessments take into account all fishery removals (bycatch in the Federal and State groundfish fisheries, and catch in the IPHC-regulated commercial, subsistence, and sport fisheries) when determining halibut allocations to the directed fisheries. In recent years, incidental bycatch mortality of halibut has represented about 13 percent of total fishery mortality (NMFS 2004b).

Pacific halibut are considered a single stock from the Pacific west coast to the Bering Sea. During the summer Pacific halibut are found along the northeast continental shelf, and adults make seasonal migrations between summer feeding grounds and deeper spawning grounds. The halibut resource is considered to be healthy, and total catch has been near record levels in recent years (NMFS 2004b)

The BSAI Groundfish FMP employs mechanisms to reduce the incidental catch of halibut in the groundfish fisheries. Table 4-5 shows recent PSC limits for halibut, for the trawl fisheries as a whole, and for flatfish target fisheries, as well as the amount of halibut bycatch.

**Table 4-5 Trawl and Flatfish Halibut Mortality Limits and Bycatch, in mt**

Year	Trawl halibut mortality limit <sup>1</sup>	Actual trawl halibut mortality	Halibut mortality limit for target flatfish fisheries	Actual flatfish halibut mortality
2002	3,400	3,363	1,765	1,991
2003	3,400	3,278	1,665	1,814
2004	3,400	3,185	1,665	1,383

<sup>1</sup>Distributed among Pacific cod, yellowfin sole, mixed flatfish, pollock, and rockfish target fisheries.

Further information on halibut may be found in the Groundfish PSEIS (NMFS 2004b).

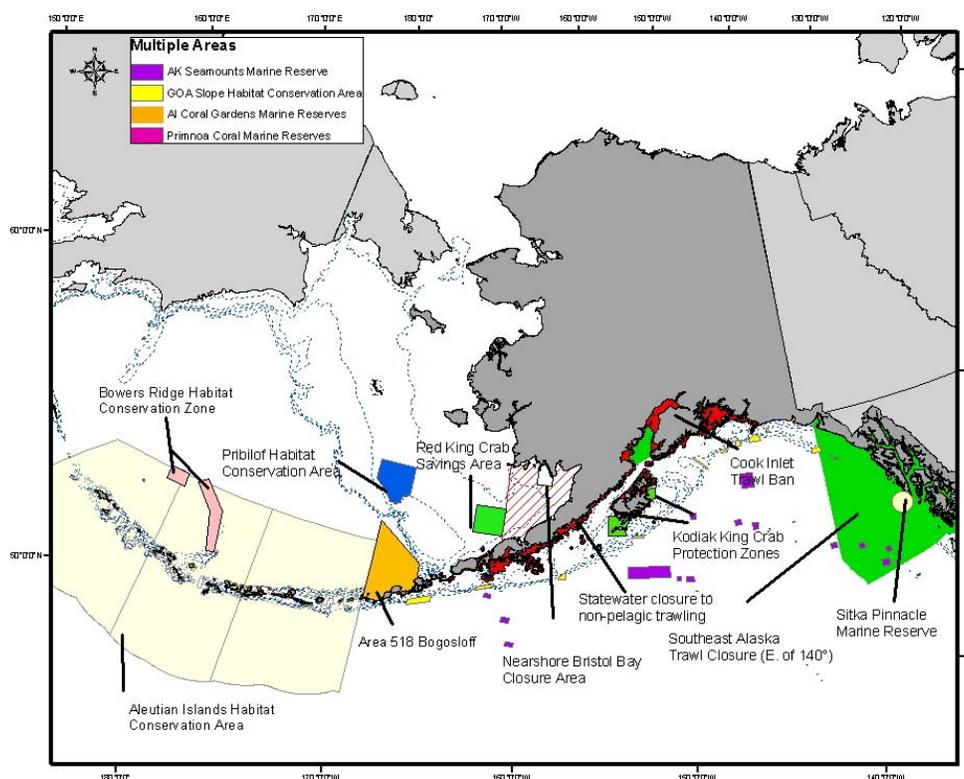
**Crab**

The interactions of the groundfish fisheries with three types of crab are monitored in the BSAI Groundfish FMP: red king crab, *C. opilio*, and *C. bairdi*. The directed crab fisheries are managed by the State of Alaska, with Federal oversight established in the BSAI King and Tanner Crab FMP.

Red king crab are widely distributed throughout the BSAI, along the shelf up to depths of 250 m. Bairdi Tanner crab are distributed on the continental shelf, and are concentrated around the Pribilof Islands and immediately north of the Alaska Peninsula. Opilio Tanner crab are distributed on the continental shelf and are common at depths of no more than 200m.

Numerous trawl closure areas have been implemented in the BSAI Groundfish FMP to mitigate potential concerns about unobserved crab mortality (crab wounded or killed but not captured) and possible habitat degradation due to trawling or dredging (Figure 4-6). The FMP also establishes PSC limits for these species based on the total abundance of the species. The upper limits are approximately 0.5 percent of total animals for red king crab, 1.2 percent for *C. bairdi*, and 0.1 percent for *C. opilio* (NMFS 2004a). Because incidental catch of crab is small, relative to other sources of mortality, time and area closures for trawl gear are thought to be more effective in reducing effects on crab stocks (Witherell and Harrington 1996).

Figure 4-6 Trawl Closures in the BSAI



PSC limits apply to crab caught within specified PSC Limitation Zones, and are apportioned by gear, target fishery, and season. Table 4-6 demonstrates the PSC limits and bycatch of crab species during the last three years, for the target flatfish fisheries. For the *C. opilio* and *C. bairdi* crab, bycatch levels are far less than the PSC limit, and catch of Tanner crab does not constrain the flatfish fisheries. Attainment of the red king crab PSC limit closed Zone 1 to the yellowfin sole fishery in May of 2002 and 2003, and closed it to the remaining flatfish target fisheries in February of 2002.

**Table 4-6 Crab PSC Limits for Target Flatfish Fisheries, and Bycatch, in numbers of crab**

Year	Zone 1 red king crab PSC limit	Zone 1 red king crab bycatch	<i>C. opilio</i> PSC limit	<i>C. opilio</i> bycatch	Zone 1 <i>C. bairdi</i> PSC limit	Zone 1 <i>C. bairdi</i> bycatch	Zone 2 <i>C. bairdi</i> PSC limit	Zone 2 <i>C. bairdi</i> bycatch
2002	76,446	77,219	3,746,111	787,577	706,164	312,746	2,384,643	528,683
2003	76,446	75,157	3,746,111	556,442	706,164	256,670	2,384,643	498,738
2004	155,256	68,497	3,746,111	1,631,939	706,164	147,166	2,384,643	248,285

NOTE: Zone 1 encompasses much of the waters of Bristol Bay west to 165° W. longitude; adjacent to the west, Zone 2 extends northwest and encompasses the Pribilof Islands. The *C. opilio* PSC limit applies to crab caught within the *C. Opilio* Bycatch Limitation Zone, which encompasses the Pribilof Islands and extends northwest.

Further information on the crab species may be found in the Groundfish PSEIS (NMFS 2004b). Habitat information for crab species, including the impacts of non-pelagic trawl gear on that habitat, is contained in the *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska*, referred to as the EFH EIS (NMFS 2005).

### **Effects of the alternatives**

Of the five primary target species fisheries, only the flatfish fisheries catch prohibited species incidentally, and for these fisheries, interaction is primarily with halibut and crab (Table 4-4). Because of the minimal interaction of the primary target species fisheries with herring and salmon, the environmental impacts of the alternatives on these species are not significant.

The Groundfish PSEIS concluded that under current management, any direct or indirect effects of bycatch on Pacific halibut are taken into account in the IPHC management process and mitigated by the BSAI Groundfish FMP measures to reduce bycatch in the groundfish fisheries. Although the flatfish fisheries have exceeded their halibut PSC allowance in two out of the last three years, the overall halibut PSC limit for trawl fisheries has not been exceeded. As a result, Alternative 1 is not deemed to have a significant impact on the Pacific halibut stock or directed halibut fisheries.

As demonstrated in Table 4-5, the directed trawl fisheries for yellowfin sole, rock sole, and flathead sole tend to catch at least their full allowance of halibut PSC. Under Alternatives 2, 3, and 4, the Non-AFA Trawl CP sector would receive a PSC allowance for halibut that is not target fishery specific, therefore allowing them the flexibility to manage their operations such as to maximize their catch of target species. Allowing the sector to form cooperatives, and thus eliminate the race for fish, will also tend to allow vessels to avoid areas of high halibut bycatch. This should allow the sector to avoid exceeding its allowance of halibut PSC, however they are likely to use it in full. As under the status quo, this should not result in a significant impact on the Pacific halibut stock.

PSC limits for the crab stocks, as discussed above, represent a very small proportion of the crab populations. In the case of *C. bairdi* and *C. opilio* crab, only a small proportion of the PSC limit is actually caught in the flatfish fisheries. Closure areas are also in place to protect crab stocks from other consequences of bottom trawling. Given these low levels of catch, even if crab PSC limits are reached, it is unlikely that any effects on crab stocks could be detected. Therefore the effect of Alternative 1 on all crab stocks is not rated as significant.

As with halibut, under Alternatives 2, 3, and 4, the Non-AFA Trawl CP sector should be able to more easily manage its crab PSC allowances to avoid exceeding bycatch limits. Any difference between these alternatives and Alternative 1 is only likely to benefit the crab resource, but not to a degree that would be detectable at a population level, therefore the effect is determined not to be significant.

#### 4.3.4 Other Fish Species

##### ***Interaction of the primary target fisheries with other fish species***

With the exception of forage fish and non-specified species, all other fish species that interact either directly or indirectly with the primary target fisheries are managed by quota. The stocks are assessed annually, and levels of overfishing and acceptable biological catch are recommended, based on which the Council determines TACs. For forage fish, a maximum retainable allowance applies that means that no more than 2 percent of catch onboard may consist of these species. Non-specified species are defined in the FMP as species of no commercial value, which are discarded.

Other flatfish species are caught in the directed fisheries for yellowfin sole, rock sole, and flathead sole. These include arrowtooth flounder, Alaska plaice, and starry flounder. These species are less valuable than the other flatfish species and often have high discard rates.

After other flatfish, the pollock and Pacific cod are the species most often caught incidentally in the flatfish target fisheries. The flatfish trawl fisheries contribute to the bycatch of sculpins and skates, although the Pacific cod fishery accounts by far for the majority of skate bycatch (Hiatt et al 2004). The incidental catch of sculpins and skates is within acceptable management limits, however a thorough assessment of these species has not been made due to a lack of data. The uncertainty surrounding the accuracy of the management limit is therefore correspondingly high.

Rockfish are the subject of high incidental catch in the Atka mackerel fishery in the Aleutian Islands. Discards of northern rockfish from the directed Atka mackerel fishery account for a large portion of the AI northern rockfish TAC. The 2003 Atka mackerel fishery discarded 4,123 mt of northern rockfish, which accounted for 70 percent of the northern TAC. The majority of the light dusky rockfish TAC is also caught incidentally in the fishery (Lowe et al 2004).

The Pacific Ocean perch fishery in the Aleutian Islands catches between 40 and 71 percent of the TAC for shorttraker and roughey rockfishes (between 1194 and 2002). Other species caught incidentally included Atka mackerel, pollock, Pacific cod, and arrowtooth flounder in 2003.

There is little interaction between the primary target fisheries and sharks, squid, octopi, forage fish., and non-specified species. The role of the primary target species as predators or prey of these species will not be affected, as the total removals are unchanged under the proposed action.

Further information on these fish species, including abundance trends and stock assessments, may be found in the *Stock Assessment and Fishery Evaluation* report (NPFMC 2004); also in the Groundfish PSEIS (NMFS 2004b) and the EFH EIS (NMFS 2005).

##### ***Effects of the alternatives***

For the fish species that are caught incidentally in the primary target species fisheries, the majority are assessed annually, and are managed using conservative catch quotas. The Groundfish PSEIS (NMFS 2004b), and the Harvest Specifications Environmental Assessment (NMFS 2004a) both conclude that these species are at sustainable population levels, and are unlikely to be subject to overfishing under the current, risk-averse management program. Minimal interaction occurs between the primary target species fisheries and forage fish or non-specified species. As a result, impacts on these species under Alternative 1 are not significant.

Under both Alternatives 2, 3, and 4, fishing patterns may change with the formation of cooperatives. This may result in longer seasons, and may change the patterns of incidental catch as cooperatives with a fixed allocation have more flexibility to respond to environmental conditions. Such changes will not be of such a degree as to impact the sustainability of managed species, however, as long as the species are managed under conservative quotas. Therefore the alternatives are considered not to be significant.

#### 4.3.5 Marine Mammals and Seabirds

##### ***Interaction of the primary target fisheries with marine mammals and seabirds***

Marine mammals that occur in the BSAI are ESA-listed Steller sea lions, ESA-listed great whales, other cetaceans, northern fur seals, harbor seals, other pinnipeds, and sea otters. Direct and indirect interactions between marine mammals and the groundfish fisheries occur due to the overlap in the size and species of groundfish that are at once important marine mammal prey and fishery resources.

The most numerous seabird species that occur in Alaskan waters are northern fulmars, storm petrels, kittiwakes, murrelets, auklets, and puffins. These groups, and others, represent 38 species of seabirds that breed in Alaska. Marine waters off Alaska provide critical feeding grounds for these species as well as others that do not feed in Alaska but migrate to Alaska during summer or winter. Impacts of fishery management on seabirds are difficult to predict due to the lack of information on many aspects of seabird ecology. Impacts may include incidental take of seabirds from fishing gear and vessel strikes, and effects on food abundance and availability.

For species that are listed under the Endangered Species Act and present in the BSAI management area, Section 7 consultations have been undertaken with respect to the impact of the Federal groundfish fisheries. In some instances, such as with the western stock of the Steller sea lion, the consultation has resulted in reasonable and prudent alternative recommendations that have been put in place in the groundfish fisheries to mitigate any potential impact of the fisheries on the species. In all cases, the consultations have concluded that the action of the fisheries is unlikely to result in jeopardy or adverse modification of critical habitat for the species.

The primary target species fisheries in the Bering Sea and Aleutian Islands have a very minor direct take of marine mammals and seabirds, which is likely to have a very minor contribution to total mortality, and is interpreted to be safe in the *Stock Assessment and Fishery Evaluation* report (Wildebuer and Nichol 2004, Wildebuer and Walters 2004, Lowe et al 2004).

Further information on marine mammals and seabirds may be found in the Groundfish PSEIS (NMFS 2004b).

##### ***Effects of the alternatives***

The Groundfish PSEIS found that the current management regime is effective at providing protection to ESA-listed seabirds and marine mammals, and that current fishing has no adverse impacts on these species. Direct and indirect interactions of marine mammals and seabirds with the primary target fisheries are few, and are not likely to create a population-level impact on these species. Alternative 1 is not considered to have a significant impact on marine mammals and seabirds.

Alternatives 2, 3, and 4 will not change the amount of groundfish harvested. Fishing effort may decrease as forming cooperatives allows participants to increase efficiency; however, any change is unlikely to be sufficiently substantial as to result in a population level impact on the marine mammal and seabird species with which the sector interacts. The alternatives are therefore considered not to have a significant impact.

#### 4.3.6 Benthic Habitat and Essential Fish Habitat

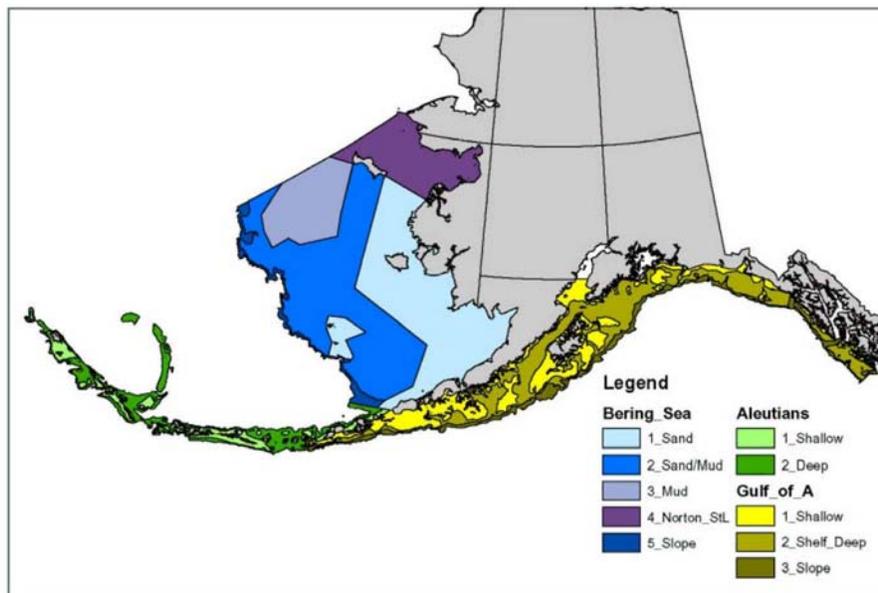
Benthic habitat encompasses seafloor that is generally believed to be at greater risk of impacts of fishing than non-benthic habitat in the water column. The Groundfish PSEIS (NMFS 2004b) contains a discussion of the effects of fishing, including bottom trawls as used by the Non-AFA Trawl CP sector, on habitat. Trawling in the eastern Bering Sea and Aleutian Islands is concentrated in specific areas, both due to management area closures and general reductions in fishing effort. Effects of trawling include mortality of benthic organisms, alteration of the physical habitat structure.

The eastern Bering Sea sediments are a mixture of the major grades representing the full range of potential grain sizes of mud (subgrades clay and silt), sand, and gravel. The distribution of benthic

sediment types in the shelf is related to depth. McConnaughey and Smith (2000) and Smith and McConnaughey (1999) describe the available sediment data for the EBS shelf. These data were used to describe four habitat types. The first, situated around the shallow eastern and southern perimeter and near the Pribilof Islands, has primarily sand substrates with a little gravel. The second, across the central shelf out to the 100 m contour, has mixtures of sand and mud. A third, west of a line between St. Matthew and St. Lawrence islands, has primarily mud (silt) substrates, with some mixing with sand (Figure 4-7). Finally, the areas north and east of St. Lawrence Island, including Norton Sound, have a complex mixture of substrates.

The Aleutian Islands area has complicated mixes of substrates, including a significant proportion of hard substrates (pebbles, cobbles, boulders, and rock), but data are not available to describe the spatial distribution of these substrates. In 2002 and 2003, NOAA Fisheries and Alaska Fishery Science Center scientists discovered unique habitat in the central Aleutian Islands consisting of high density “gardens” of corals, sponges, and other sedentary invertebrates (Stone 2003). This habitat had not been previously documented in the North Pacific Ocean or Bering Sea and appeared to be particularly sensitive to bottom disturbance. These areas have been designated as habitat areas of particular concern by the Council (BSAI Amendment 65), and fishing closures have been instituted to protect these areas from bottom contact gear.

**Figure 4-7 Surficial Sediment Textural Characteristics, according to Naidu (1988)**



Essential fish habitat (EFH) is the general distribution of a species described by life stage. General distribution is a subset of a species population and is 95 percent of the population for a particular life stage, if life history data are available for the species. Maps and descriptions of EFH for the BSAI groundfish species, and further information on benthic habitat and EFH, are available in the EFH EIS (NMFS 2005).

### **Effects of the alternatives**

The effects of the Non-AFA Trawl CP sector on benthic habitat and essential fish habitat were analyzed in the EFH EIS (NMFS 2005). Effort levels in the flatfish fisheries are considered low and occur in areas of less sensitive habitat (rock, gravel, mud, and sand). The *Stock Assessment and Fishery Evaluation* report notes a possible concern in the Atka mackerel and Pacific Ocean perch fisheries due to unknown bycatch levels of coral, bryozoan, or sponge biota (Lowe et al 2004, Spencer et al 2004). However, recent closures in the Aleutian Islands (under BSAI Amendments 65 and 78) have protected sensitive habitat

areas from future adverse impact due to fishing. Current fishing has minimal and temporary effects on benthic habitat and essential fish habitat. These effects are likely to continue, if current management is maintained.

The direct effect of groundfish fisheries on mortality of benthic organisms is likely to be affected by the amount of harvest that is permitted. Benthic community diversity may also be affected by changes to the location of harvest. Although Alternatives 2, 3, and 4 may create some changes to fishing patterns, particularly by potentially adding to the season length of the primary target fisheries, the amount of the harvest, and the location of harvest is unlikely to change. The minimal and temporary effects that are due to current fishing are likely to continue under these alternatives, however these effects are not significant.

#### **4.3.7 Economic and Socio-Economic**

##### ***Effects on Harvest Participant and Fishing Practices***

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

Maintaining the status quo is expected to result in the continuation of existing fishing practices and patterns. Participants in the Non-AFA Trawl CP sector will likely continue to focus the majority of their fishing effort on several flatfish species, Atka mackerel, AI Pacific Ocean perch and Pacific cod in the BSAI. Some vessels in the sector will also participate in GOA fisheries. Under this alternative, trawl participants will continue to race for fish. Trawl fisheries will continue to be prematurely closed due to constraining halibut PSC allowances. Sector discard rates will likely improve, but overall the retention rates will continue to lag behind the rest of the BSAI sectors. Contributing to the improved retention rates is the impending groundfish retention standard (GRS) action. Amendment 79, if approved by the Secretary of Commerce, would phase in the GRS over a four-year period. Originally approved by the Council in June 2003, the GRS was to begin in 2005 with a starting GRS rate of 65 percent. Over the subsequent four-year period, the GRS would gradually increase, culminating at 85 percent in the fourth year. The action would only require Non-AFA Trawl CP vessels greater than or equal to 125 ft. LOA to comply with the GRS. Non-AFA Trawl CP vessels less than or equal 125 ft. LOA would be exempt from the GRS. To monitor and enforce the GRS, sector vessels greater than or equal to 125' LOA would be required to measure all catch on flow scales and all hauls must be observed. Many of the vessels already have flow scales onboard, but seven vessels need to install the scales. All sixteen vessels greater than 125 ft. LOA would also be required to carry an extra observer. Where feasible, GRS could reduce economic returns from fisheries to members of the sector.

###### **Alternative 2**

Under Alternative 2, the allocation percentages to the Non-AFA Trawl CP sector are expected to be sufficient to keep the sector's groundfish catch levels about the same as their historic catch (see Table 4-7). However, the remaining portion of groundfish reserved for the general limited access fishery would be substantially less than historic harvests and may disadvantage members of other sectors, particularly non-AFA catcher vessels. The remaining amount of groundfish reserved for the trawl limited access fishery is less than the combined AFA Trawl CP and CV sideboards for each of the species. Between 1995 and 1997, vessels whose catch history was assigned to the AFA Trawl CP and CV sectors participated in the fisheries allocated to the Non-AFA Trawl CP sector in larger numbers.

**Table 4-7 Allocations of Amendment 80 species under Alternative 2**

Allocated Species	Alternative 2	
	Non-AFA Trawl CP sector	Trawl limited access fishery
	Allocation percent	Allocation percent
Atka mackerel	99.7%	0.3%
Flathead sole	96.8%	3.2%
AI POP	100%	0.0%
Rock sole	95.4%	4.6%
Yellowfin sole	88.5%	11.5%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

Under this alternative, the yellowfin sole threshold program could provide the opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when BSAI pollock TAC declines relative to yellowfin sole. In that circumstance, 30 percent of the TAC over 125,000 mt would be assigned to the Non-AFA Trawl CP sector. The remaining 70 percent of the TAC would be apportioned to the trawl vessels that are not a part of the Non-AFA Trawl CP sector. Allocating 70 percent of the TAC, above the 125,000 mt level, would provide expanded harvesting opportunities for these sectors. Table 4-8 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels.

**Table 4-8 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 2.**

TAC	125,000	140,000	150,000	160,000	170,000
CDQ allocation (10%)	12,500	14,000	15,000	16,000	17,000
ICA (Assumed 5%)	5,625	6,300	6,750	7,200	7,650
<b>ITAC</b>	<b>106,875</b>	<b>119,700</b>	<b>128,250</b>	<b>136,800</b>	<b>145,350</b>
Non-threshold Trawl limited access allocation	12,291	13,766	14,749	15,732	16,715
Non-threshold Non-AFA Trawl CP Sector allocation	94,584	105,935	113,501	121,068	128,635
Threshold allocation to trawl limited access			2,275	8,260	14,245
Threshold allocation to Non-AFA Trawl CP sector			975	3,540	6,105
<b>Total allocation for trawl limited access</b>	<b>12,291</b>	<b>13,766</b>	<b>17,024</b>	<b>23,992</b>	<b>30,960</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>94,584</b>	<b>105,935</b>	<b>115,776</b>	<b>124,608</b>	<b>134,470</b>

The PSC allocation to the Non-AFA Trawl CP sector under Alternative 2 would likely be sufficient to harvest their entire allocation of groundfish. However, the remaining halibut PSC for all other trawlers could be insufficient to harvest the allocation of groundfish to the general limited access fishery. Given the historically usage of halibut PSC from 1995 to 1998, there is the potential for the remaining trawl sectors to fall short of the necessary halibut PSC needed to harvest the remaining groundfish, if, for example, the Pacific cod TAC were to increase relative to pollock TAC. Table 4-9 provides the PSC allocation under Alternative.

**Table 4-9 PSC allocations for Alternative 2 based on PSC usage by the Non-AFA Trawl CP sector from 1998 to 2002**

PSC Species	Percent of PSC usage using average of annual percents
Halibut	77.43%
Red king crab	90.37%
<i>C. opilio</i>	94.37%
Zone 1 <i>C. bairdi</i>	90.41%
Zone 2 <i>C. bairdi</i>	94.56%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

Under Alternative 2, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

Based on the eligibility requirements under this alternative, there appear to be 26 vessels that qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

Under Alternative 2, 15 percent of the qualified vessels would be needed to form a cooperative. In addition, at least three unique entities (using the 10 percent AFA rule) are required for cooperative formation. Since under Alternative 2 there are likely to be 26 qualified vessels, at least four of these vessels would be needed to form a cooperative. If each of the cooperatives had the minimum required four qualified vessels, six cooperatives would be formed in the Non-AFA Trawl CP sector. This provision should help to ensure that each vessel is given the opportunity to join a cooperative. Alternatively, the “odd-person-out” may have less of a voice in deciding the terms of the cooperative agreement. It seems less likely that the “odd-person-out” would be worse off under this alternative than Alternative 3 cooperative structure, which allows only a single cooperative to form. Under this action, each participant would have the option to join any of six potential cooperatives, so it is more likely to find a cooperative that would help them meet their objectives. Participants who elect not to join a cooperative would participate outside a cooperative but within the sector’s limited access fishery.

Under Alternative 2, allocation of the primary species and PSC allowances between cooperatives and the sector’s limited access fishery is based on the retained catch of the allocated species of the eligible license holders included in each cooperative and in the non-cooperative pool for the years 1998-2002, with no years of catch history excluded. Since it is not possible to determine which vessels will join a cooperative(s) very little can be said about the distribution of the sector’s TAC between cooperatives and the sector’s limited access fishery.

Using retained catch during the years 1998-2002 with no drop years, the number of vessels that would be below with minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Due to confidentiality requirements, a more detailed description of the minimum allocation is not possible.

Unlike the other four allocated species, the allocation of Atka mackerel under Alternative 2 would be based on total catch for the years 1998-2002. Under this alternative, vessels less than 200’ in length having less than 2 percent of the sector’s Atka mackerel history will receive 1.937 percent of the BSAI Atka mackerel of which 1.505 percent would come from EAI/BS and .432 percent would come from the CAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 12.6 percent of the EAI/BS TAC and 0.8 percent of the CAI. After deducting the allocation to the non-mackerel vessels, the remaining 98 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200’ in length or have more than 2 percent of the sector’s Atka mackerel allocation.

Consolidation in the Non-AFA Trawl CP sector under Alternative 2 would not be constrained. There would be no limit on the percentage of the Non-AFA Trawl CP sector allocation that an eligible participant can own or use. In general, number of vessels in the fishery could be reduced to the minimum number need to harvest the entire allocation. Cost savings associated with a more optimal fleet size is expected to increase the producer surplus generated by the fleet.

Alternative 2 would implement specific GOA harvest caps on the Non-AFA Trawl CP sector for the species that are not allocated (see Table 4-10). Sideboard caps would be set using the sector’s retained catch of BSAI groundfish species from 1998-2002 in all fisheries relative to the retained catch of all vessels. Those percentages are reported in the table below. Sideboard caps would not be established for BSAI species. GOA groundfish harvests by the Non-AFA Trawl CP sector would be limited by requiring vessels to have fished 10 weeks during the 1998-2002 period. The 13 vessels that fished more than 10

weeks in the GOA flatfish fisheries during the qualifying period would be allowed to fish GOA flatfish without additional restrictions beyond the current management measures. The other eight vessels that have historically fished flatfish in the GOA, but had limited participation, would be prohibited from directed fishing for GOA flatfish in the future.

**Table 4-10 GOA sideboard estimates and average historic catch**

Species	Alternative 2		
	Sideboard %	2005 ITAC (mt)	Estimated Sideboard (mt)
<b>Pollock</b>			
Pollock 610	0.3%	30,380	91
Pollock 620	0.1%	34,404	34
Pollock 630	0.1%	18,718	19
Pollock 640	0.1%	1,688	2
<b>Central Gulf</b>			
Pacific Ocean Perch	RDP	8,535	RDP
Pelagic Shelf Rockfish	RDP	3,067	RDP
Northern Rockfish	RDP	4,283	RDP
Pacific Cod	5.4%	25,086	1,355
<b>Western Gulf</b>			
Pacific Ocean Perch	99.3%	2,567	2,549
Pelagic Shelf Rockfish	64.8%	377	244
Northern Rockfish	100.0%	808	808
Pacific Cod	2.0%	15,687	314
<b>West Yakutat</b>			
Pacific Ocean Perch	94.5%	841	795
Pacific Cod	3.6%	0	0
Pelagic Shelf Rockfish	86.4%	211	182

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the catch of all vessels in the GOA

Note: Only vessels with a sufficient number of weeks fished in GOA flatfish fisheries may participate in a directed flatfish fishery.

RDP - Indicates that species will be managed under the Rockfish Demonstration Program

Sideboards would also be set for GOA halibut PSC based on actual usage relative to the other sectors from 1998-2002 (see Table 4-11). The tons and percentage of the GOA halibut PSC allotment to Deep and Shallow water species groups are reported in the table below. The amounts of halibut estimated for Alternative 2 are less than the fleet has traditional taken in the GOA.

**Table 4-11 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				
	1	2	3	4	Total
<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>					
Alt 2	50.94 (2.55%)	228.05 (11.40%)	243.29 (12.16%)	60.84 (4.09%)	583.12 (29.16%)
<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>					
Alt 2	18.75 (0.94%)	43.68 (2.18%)	43.59 (2.18%)	58.03 (2.90%)	164.05 (8.20%)

Source: NPFMC summary of NMFS weekly PSC reports.

Note: Data for 2004 was not included in this report. A trawl PSC allotment of 2,000 mt was assumed.

The Non-AFA Trawl CP sector should have the opportunity to harvest their historic percentages of BSAI groundfish species, given the sideboard options selected. These caps do not give the sector the rights to those fish, but instead are limits on their catch. Other sectors could legally harvest portions of the sideboard limits before the Non-AFA Trawl CP sector catches them. Basing the caps on retained catch, results in larger caps, in most cases, relative to using total catch.

Future GOA groundfish harvests cannot be predicted, without additional information on the number of participants that will be allowed to fish in the future. The GOA PSC caps, however, should enable the

sector to harvest historic levels of groundfish. GOA halibut PSC catches were not assigned to a specific area, since NMFS does not manage PSC by area in the GOA. Finally, the analysts assumed that any catches by the sector under the Rockfish Pilot program would be deducted from the sideboard cap amounts.

Given the Alternative 2 methods of calculating the BSAI sideboard caps, it is expected that the Non-AFA Trawl CP sector could harvest their historic percentages of various fisheries and still provide sufficient protection for other sectors. Insufficient information is available to make that determination for the GOA. However, given that most fisheries in the GOA are closed due to halibut bycatch and not TAC, the halibut PSC caps should provide adequate protection for most species.

With regards to the meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternatives 2 than under Alternative 1. Under Alternative 2 sector participants that join a cooperative can pool their individual annual GRS rates across the cooperative. Under Alternative 1, the GRS would be enforced on a vessel by vessel basis. Under Alternative 2, vessels in a cooperative would average their individual annual retention rates, which could help to reduce increased operation costs for those vessels limited by the GRS. Overall, given the flexibility of this alternative, each cooperative will minimize the cost of meeting the GRS to the extent possible.

### **Alternative 3**

Under Alternative 3, the allocation of groundfish species and PSC species would be insufficient to maintain the Non-AFA Trawl CP sector's historic harvest levels (except maybe yellowfin sole). In addition, large portions of the remaining Amendment 80 species would be directed to the general limited access fishery where it would likely remain unharvested without substantial increases in harvest by participants in the fishery. The Non-AFA Trawl CV sector has traditionally not harvested rock sole to level allocated under this alternative. The alternative does include a provision to rollover any portion of the general limited access fishery allocation that is projected to go unused by a given date. However, the timing of some of the fisheries and lack of PSC that would be necessary to harvest the rollover decrease the benefits relative to a direct allocation as in Alternative 2. Table 4-12 shows groundfish allocation percentages for the Non-AFA Trawl CP sector and the general limited access fishery.

**Table 4-12 Allocations of Amendment 80 species under Alternative 3**

<b>Alternative 3</b>		
<b>Allocated Species</b>	<b>Non-AFA Trawl CP sector</b>	<b>General limited access fishery</b>
	Allocation percent	Allocation percent
<b>Atka mackerel</b>	84.3%	14.6%
<b>Flathead sole</b>	63.1%	37.4%
<b>AI POP</b>	85.4%	13.8%
<b>Rock sole</b>	37.0%	63.9%
<b>Yellowfin sole</b>	59.8%	42.1%

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

Under this alternative, relative to Alternative 2, the yellowfin sole threshold program would be less likely to provide an opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when pollock TAC declines relative to yellowfin sole. The primary reason is the allocation of the ITAC above the threshold would favor the Non-AFA Trawl CP sector and would diminish the yellowfin sole allocation to the general limited access fishery when ITAC exceeded the 100,000 mt threshold from 48 percent to 30 percent. Yellowfin sole ITAC above the threshold would be distributed 70 percent to the Non-AFA Trawl CP sector and 30 percent to all other trawlers. Constraining the success of the threshold program, under this alternative, is the lack of halibut PSC. Like Alternative 2, this alternative does not include reallocation of halibut PSC as part of the rollover provisions, so sectors will have to rely on their initial halibut allowance to harvest any groundfish

that is rolled over to them. Table 4-13 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels under Alternative 3.

Although it cannot be determined with any certainty, the PSC allocation percentages under this alternative could result in an allocation to the Non-AFA Trawl CP sector that may be insufficient for harvesting their entire allocation of the target species, if the sector cannot reduce its PSC catch rates substantially from current levels. In contrast, the remaining portion of halibut PSC reserved for all other trawlers should be sufficient to harvest the remaining portion of unallocated groundfish. Alternative 3 also includes a reduction in the calculated PSC apportionments to the Non-AFA Trawl CP sector by an additional 5 percent. Table 4-14 provides the PSC allocation under Alternative 3.

Like Alternative 2, 26 vessels appear to qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

**Table 4-13 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 3.**

<b>TAC</b>	<b>100,000</b>	<b>110,000</b>	<b>120,000</b>	<b>130,000</b>	<b>140,000</b>
CDQ allocation (10%)	10,000	11,000	12,000	13,000	14,000
ICA (Assumed 5%)	4,500	4,950	5,400	5,850	6,300
<b>ITAC</b>	<b>85,500</b>	<b>94,050</b>	<b>102,600</b>	<b>111,150</b>	<b>119,700</b>
Non-threshold Trawl limited access allocation	34,371	37,808	63,645	44,682	48,119
Non-threshold Non-AFA Trawl CP Sector allocation	51,129	56,242	61,355	66,468	71,581
Threshold allocation to trawl limited access			780	3,345	5,910
Threshold allocation to Non-AFA Trawl CP sector			1,820	7,805	13,790
<b>Total allocation for trawl limited access</b>	<b>34,371</b>	<b>37,808</b>	<b>64,425</b>	<b>48,027</b>	<b>54,029</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>51,129</b>	<b>56,242</b>	<b>63,175</b>	<b>74,273</b>	<b>85,371</b>

**Table 4-14 PSC allocations for Alternative 3 based on percentages from allocated Amendment 80 species multiplied by the total trawl PSC usage from 1995 to 2002**

<b>PSC Species</b>	<b>Percent of PSC usage using average of annual percents</b>
Halibut	35.59%
Red king crab	34.98%
<i>C. opilio</i>	44.51%
Zone 1 <i>C. bairdi</i>	31.94%
Zone 2 <i>C. bairdi</i>	47.22%

Source: Amendment 80 database. At this time, only data for 2003 was available for halibut.

Under Alternative 3, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

To form a cooperative under this alternative, 67 percent of the eligible vessels would be required. If the calculation is based on vessels, and 26 vessels are in the sector, then 17 vessels would be required to meet the 67 percent threshold. Those qualified participants who elect not to join a cooperative would participate outside the cooperative but within the sector (sector limited access fishery).

Under Alternative 3, the allocation of the primary target species and PSC allowance between the cooperative and the sector limited access fishery would be based on the total catch of the allocated species to the eligible license holders include in each pool for the years 1995 to 2003. Each license holder must drop its three lowest years of total catch for each of the allocated species. Given that is not possible to

determine with certainty which vessels will join the cooperative very little can be said about the impacts of this alternative will have on the distribution of catch, other than it will vary somewhat compared to Alternative 2.

Using total catch during the years 1995-2003 drop 3 years, the number of vessels that would be below the minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be zero.

The allocation of Atka mackerel under Alternative 3 would be based on total catch for the years 1995-2003, drop 3 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history (non-mackerel vessels) will receive 3.48 percent of the BSAI Atka mackerel of which 1.87 percent would be from the EAI/BS, 1.38 percent would be from the CAI, and .23 percent from the WAI. Applying to the 2005 TAC, the non-mackerel vessels would receive 15.7 percent of the EAI/BS TAC and 2.5 percent of the CAI TAC. After deducting the allocations to the non-mackerel vessels, the remaining 97 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's Atka mackerel allocation.

Consolidation would be limited under Alternative 3. Although numbers of persons over the cap cannot be reported for the Atka mackerel and AI POP fisheries to protect confidential data, no companies are over the cap for yellowfin sole, rock sole, and flathead sole. In general, the changes in the economic impacts of a 50 percent cap versus no cap are small. In either case, the number of vessels in the fishery could be reduced to the minimum number need to harvest the entire allocation.

The sideboard caps under Alternative 3 would be based on the total catch of the Non-AFA Trawl CP sector relative to the total catch of all sectors. Using total catch, as compared to retained catch, tends to reduce the size of the sideboard caps for the Non-AFA Trawl CP sector. Smaller caps will reduce the amount of revenue that the Non-AFA Trawl CP sector can generate. However, they will provide more fish for other sectors to harvest. Whether the other sectors will increase their participation and retention in fisheries other than Pacific cod and select other fisheries is unknown.

Sideboard caps will be set for both GOA groundfish and halibut fisheries under this alternative (see Table 4-15 and Table 4-16). Groundfish sideboard caps will have the greatest impact on species that close due to the TAC being harvested. These species are typically Pacific Ocean Perch, Pelagic shelf rockfish, northern rockfish, and Pacific cod. Other species are typically closed as a result of halibut PSC constraints.

**Table 4-15 GOA sideboard estimates and average historic catch**

Species	Alternative 3		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Pollock</b>			
Pollock 610	0.2%	61	120
Pollock 620	0.1%	34	100
Pollock 630	0.1%	19	
Pollock 640	0.1%	2	

Species	Alternative 3		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Central Gulf</b>			
Arrowtooth Flounder	15.2%	3,795	7,750
Deep Water Flatfish	10.0%	335	252
Shallow Water Flatfish	2.9%	377	173
Flathead Sole	24.4%	1,222	369
Rex Sole	78.7%	5,777	2,317
Pacific Ocean Perch	RDP	RDP	4,179
Rougheye Rockfish	50.1%	279	495
Shortracker Rockfish	50.1%	162	
Thornyhead Rockfish	39.1%	395	210
Pelagic Shelf Rockfish	RDP	RDP	1,620
Northern Rockfish	RDP	RDP	1,156
Other Rockfish	0.8%	2	233
Pacific Cod	4.0%	1,003	2,024
Sablefish	23.1%	335	524
<b>Western Gulf</b>			
Arrowtooth Flounder	40.3%	3,224	4,218
Deep Water Flatfish	4.3%	14	9
Shallow Water Flatfish	39.7%	1,787	143
Flathead Sole	57.6%	1,152	314
Rex Sole	88.1%	1,480	572
Pacific Ocean Perch	85.0%	2,182	1,456
Rougheye Rockfish	63.5%	119	161
Shortracker Rockfish	63.5%	98	
Thornyhead Rockfish	39.7%	163	116
Pelagic Shelf Rockfish	55.5%	209	135
Northern Rockfish	72.3%	584	443
Other Rockfish	4.8%	2	23
Pacific Cod	1.9%	298	553
Sablefish	41.1%	209	116
<b>West Yakutat</b>			
Deep Water Flatfish	29.9%	634	34
Rex Sole	64.8%	868	35
Flathead Sole	46.6%	1,398	8
Shallow Water Flatfish	0.1%	2	0
Arrowtooth Flounder	73.0%	1,825	18
Sablefish	49.2%	151	80
Pacific Ocean Perch	93.5%	786	784
Other Rockfish	50.0%	65	20
Pelagic Shelf Rockfish	90.3%	191	116
<b>Entire Gulf</b>			
Atka Mackerel	71.7%	430	178
Other Species	2.1%	291	853

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the GOA, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Given that this alternative would decrease the Non-AFA Trawl CP sector's halibut PSC cap by about 36 mt compared to Alternative 2 and 50 mt under Alternative 4, they are expected to be worse off under this alternative compared to the other two alternatives being considered. Other participants in the GOA fisheries would fair better under this alternative.

**Table 4-16 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				Total
	1	2	3	4	
	<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>				
Alt 3	57.47 (2.87%)	189.28 (9.46%)	218.64 (10.93%)	98.17 (4.91%)	563.56 (28.18%)
	<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>				
Alt 3	20.59 (1.03%)	41.87 (2.09%)	36.77 (1.84%)	48.13 (2.41%)	147.35 (7.37%)

Source: NPFMC summary of NMFS weekly PSC reports.

Note: Data for 2004 was not included in this report. A trawl PSC allotment of 2,000 mt was assumed.

BSAI sideboard caps are set only for Alternative 3. The sideboard amounts are shown in Table 4-17. Members of industry in and the Council have indicated that the primary BSAI directed fisheries are already or are in the process of being rationalized. Therefore, the impact of excluding BSAI sideboard caps is expected to be relatively small. Implementing the caps shown in the following table is expected to provide minimal amounts of protection for vessels outside the Non-AFA Trawl CP sector.

**Table 4-17 BSAI Sideboard estimates and average historic catch**

Species	Alt. 3			Average Catch of Non-AFA Trawl CPs (95-03)
	2005 ITAC (mt)	Sideboard %	Estimated Sideboard (mt)	
<b>Bering Sea</b>				
Other Rockfish	391	51.37%	201	138
Pacific Ocean Perch	1,190	11.46%	136	231
Sablefish (Trawl)	1,037	73.83%	766	221
Greenland Turbot	2,295	16.99%	390	1,077
<b>Aleutian Islands</b>				
Other Rockfish	502	35.73%	179	315
Sablefish (Trawl)	557	62.61%	349	22
Greenland Turbot	680	19.38%	132	165
<b>Bering Sea &amp; Aleutians</b>				
Arrowtooth Flounder	10,200	20.13%	2,053	9,351
Northern Rockfish	4,625	4.25%	197	4,026
Other Flatfish	2,975	11.90%	354	2,138
Alaska Plaice	6,800	11.90%	809	
Other Species	24,650	2.25%	554	8,892
Pacific Cod - Trawl CP	44,779	*	*	25,257
Shortraker Rockfish	552	38.13%	210	368
Rougheye Rockfish	207	38.13%	79	

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the BSAI, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

In meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternatives 3 than under Alternative 1, but less so than under Alternatives 2 and 4. Under Alternative 3, sector participants that join the cooperative can pool their annual vessel GRS rates across the cooperative. By averaging individual vessel retention rates across the cooperative, this could help to reduce operation costs for those vessels limited by the GRS. However, unlike Alternatives 2 and 4, which allow multiple cooperatives to form, Alternative 3 would allow only one cooperative. As a result, there is a chance that some members of the sector will not join the cooperative thus reducing the benefits of GRS pooling. Overall, participants in the cooperative will seek to minimize their cost of meeting the GRS to the extent possible.

### **Alternative 4**

In April 2006, the Council selected preliminary preferred allocation percentages for the Non-AFA Trawl CP sector. Allocation percentages selected were 82.5 percent for yellowfin sole, 97 percent for rock sole, and 98 percent flathead sole. For Atka mackerel and AI POP, the Council selected an approach that would phase in the final allocation percentages over a period of years. For the Atka mackerel that period would be four years and for AI POP it would be two years. The allocation percentages for Atka mackerel would start at 98 percent for EAI/BS and CAI and then be reduced 2 percent every year for four years culminating at a 90 percent allocation. For WAI, the Non-AFA Trawl CP sector would be allocated 100 percent of the Atka mackerel. For EAI and CAI AI POP, the allocation would start at 95 percent the first and decrease to 90 percent the second year. For WAI, the allocation to the sector would be 98 percent.

Table 4-18 shows the 2005 allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery for each of the allocated species under Alternative 4. Under this alternative, the allocations of yellowfin sole, rock sole, and flathead sole are similar to the allocations under Alternative 2 in that the allocations are expected to be sufficient to keep the Non-AFA Trawl CP sector's groundfish catch levels about the same as their historic catch. Atka mackerel and AI POP would be slightly less than Alternative 2 at the end of the phase in reduction. The percentages used for the Atka mackerel and AI POP allocations in the table are the final allocation percents. In reviewing the allocation amounts to the trawl limited access fishery in this alternative, it is likely there would be insufficient amounts of Amendment 80 species for a directed fishery with the exception of yellowfin sole. In general, this is indicative of the historical catch history of the trawl limited access participants since before the implementation of the AFA in 2000.

**Table 4-18 Allocations of Amendment 80 species under Alternative 4**

	Yellowfin sole	Rock sole	Flathead sole	POP*			Atka Mackerel*		
				EAI	CAI	WAI	EAI/BS	CAI	WAI
<b>2005 TAC</b>	<b>90,686</b>	<b>41,500</b>	<b>19,500</b>	<b>3,080</b>	<b>3,035</b>	<b>5,085</b>	<b>7,500</b>	<b>35,500</b>	<b>20,000</b>
CDQ allocation (10%)	9,069	4,150	1,950	308	304	509	750	3,550	2,000
AFA CV Sideboard limit	5,281	1,274	886	21	7	0	22	3	0
AFA CP Sideboard limit	18,772	1,382	632	55	3	18	0	3,674	3,600
Jig allocation (1% of Atka mackerel for EAI/BS)	-	-	-	-	-	-	68	-	-
ICA (Assumed 5%)	4,081	1,868	878	139	137	229	334	1,598	900
<b>2005 ITAC</b>	<b>77,537</b>	<b>35,483</b>	<b>16,673</b>	<b>2,633</b>	<b>2,595</b>	<b>4,348</b>	<b>6,348</b>	<b>30,353</b>	<b>17,100</b>
Trawl limited access allocation	13,569	1,064	333	263	259	0	635	3,035	342
Non-AFA Trawl CP Sector allocation	63,968	34,418	16,339	2,370	2,335	4,348	5,714	27,317	16,758

Source: Data summarized from 1995-2004 NOAA Fisheries Weekly Production Reports.

\* The percentages used for the Atka mackerel and AI POP allocations are the final allocation percents

Table 4-18 also provides CDQ allocation amounts under the preliminary preferred alternative, AFA sideboard limits for the allocated species, and the ICA. The Council in April 2006, clarified that the ICA is intended for the both the fixed gear sectors and the trawl limited access fishery to account for incidental catch. The Council also clarified that the ICA will be determined prior to allocations to the Non-AFA Trawl CP sector and the trawl limited access fishery. The Council also clarified in April 2006 that the sideboard limits for the AFA sectors would be determined after the CDQ allocations. Based on clarification, it would appear that the sideboards would be ineffectual since the sideboard is greater than the allocation to the trawl limited access fisheries for most of the species. The only exception would be the AI POP and EAI/BS Atka mackerel. In these cases, the sideboard is less than allocation to the trawl limited access fishery. The primary reason for the ineffectiveness of the sideboard limit under this action is due to the Non-AFA Trawl CP sector receiving allocations of these species. One of the primary

purposes of the AFA sideboards was to prevent the AFA sectors from expanding beyond their historic catch history in these fisheries and potentially harming the Non-AFA Trawl CP sector.

Alternative 4 includes a rollover provision like Alternative 3, but the alternative also includes PSC rollovers. Under this provision, NOAA Fisheries would review the fisheries for the purpose of rollovers of both Amendment 80 species and PSC on May 1 and August 1.

Under this alternative, the yellowfin sole threshold program could provide some increased opportunity for the AFA Trawl CP and CV sectors and the Non-AFA Trawl CV sector to expand their harvest of yellowfin sole in periods when BSAI pollock TAC declines relative to yellowfin sole depending on the allocation percentage below the threshold. In this alternative, 60 percent of the TAC over 125,000 mt would be assigned to the Non-AFA Trawl CP sector. The remaining 40 percent of the TAC would be apportioned to the trawl vessels that are not a part of the Non-AFA Trawl CP sector. Table 4-19 provides the yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery given different TAC levels under Alternative 4.

**Table 4-19 Yellowfin sole allocation to the Non-AFA Trawl CP sector and the trawl limited access fishery to include threshold allocations under different TAC levels for Alternative 4.**

<b>TAC</b>	<b>125,000</b>	<b>140,000</b>	<b>150,000</b>	<b>160,000</b>	<b>170,000</b>
CDQ allocation (10%)	12,500	14,000	15,000	16,000	17,000
ICA (Assumed 5%)	5,625	6,300	6,750	7,200	7,650
<b>ITAC</b>	<b>106,875</b>	<b>119,700</b>	<b>128,250</b>	<b>136,800</b>	<b>145,350</b>
Non-threshold Trawl limited access allocation	18,703	20,948	21,876	23,940	25,436
Non-threshold Non-AFA Trawl CP Sector allocation	88,172	98,753	103,124	112,860	119,914
Threshold allocation to trawl limited access			1,300	4,720	8,140
Threshold allocation to Non-AFA Trawl CP sector			1,950	7,080	12,210
<b>Total allocation for trawl limited access</b>	<b>18,703</b>	<b>20,948</b>	<b>23,176</b>	<b>28,660</b>	<b>33,576</b>
<b>Total allocation for Non-AFA Trawl CP sector</b>	<b>88,172</b>	<b>98,753</b>	<b>105,074</b>	<b>119,940</b>	<b>132,124</b>

The effects of halibut PSC allowance under Alternative 4 is a little more difficult to determine given the Council has two options under consideration: 1) allocate halibut PSC based on historical usage of PSC in all fisheries by the Non-AFA Trawl CP sector for year combinations 2002-2004 (Suboption 6.1.1) with a reduction of the initial limit to 80 percent, which would be phased at 5 percent per year for four years starting in the second year of the program; 2) allocate halibut PSC based on the sector's percentage allocations of the Amendment 80 species multiplied by the trawl PSC amounts apportioned to the Amendment 80 species annually (Suboption 6.1.4) with minimum and maximum amounts for the Non-AFA Trawl CP sector and the trawl limited access fishery. For the Non-AFA Trawl CP sector, the minimum halibut PSC limit would be 2,153.5 mt and the maximum limit would be 2,403.5 mt. For the trawl general limited access fishery, the minimum halibut PSC limit would be 903.5 mt and the maximum limit would be 1,153.5 mt.<sup>59</sup>

Under Suboption 6.1.1 the halibut PSC apportioned to the Non-AFA Trawl CP sector would be 80 percent with the remaining 20 percent apportioned to the trawl limited access fishery. Applying these percentages to the 3,307 mt trawl halibut apportionment would result in 2,646 mt for the Non-AFA Trawl CP sector and 661 mt of halibut to the trawl limited access fishery. Reducing the 2,646 mt by 20 percent would result in the Non-AFA Trawl CP sector having 2,117 mt for use in directed fishing, while the remaining 529 mt of halibut would stay in the water.

<sup>59</sup> Under the preliminary preferred alternative, the portion of PSC reserved for the CDQ program will increase from 7.5 percent to 10 percent resulting in a reduction in the trawl halibut PSC from 3,400 mt to 3,307 mt. The minimum and maximum allocation amounts were adjusted evenly to account for the reduction in trawl halibut PSC.

Under Suboption 6.1.4 using Council selected percentages, the April 2006 Pacific cod allocation to the Non-AFA Trawl CP sector, and 2005 TAC, the allocation to the Non-AFA Trawl CP sector would be 2,158 mt since the calculated PSC apportionment is slightly above the 2,153.5 mt minimum allocation. This assumes a 90 percent allocation for both AI POP and Atka mackerel across all subareas combined to the Non-AFA Trawl CP sector<sup>60</sup>. The remaining 1,149 mt would be apportioned to the trawl limited access fishery. One of the potential advantages of Suboption 6.1.4 compared to Suboption 6.1.1 is that PSC apportionment will be adjusted annually as the TAC for each of the Amendment 80 species changes relative to one another. To some degree this approach better reflects the dynamic nature of the North Pacific fishery. However, one of the disadvantages of Suboption 6.1.4 compared to Suboption 6.1.1 is there is little room for the Council to take advantage of any potential PSC savings resulting from cooperatives while at the same time staying above the minimum apportionment for the Non-AFA Trawl CP sector (2,153.5 mt). Since the maximum allocation to the Non-AFA Trawl CP sector under this option is 2,403.5 mt, most of the potential PSC saving is shifted to the trawl limited access fishery.

For crab PSC under Alternative 4, the Council selected percentages based on results from the analysis (see far right column in Table 3-43). The following are the crab PSC limits selected by the Council under this alternative for the Non-AFA Trawl CP sector:

Red king crab	37.52%
<i>C. opilio</i>	61.44%
Zone 1 <i>C. bairdi</i>	52.64%
Zone 2 <i>C. bairdi</i>	29.59%

In addition, the crab PSC limit to the Non-AFA Trawl CP sector would be reduced to 80 percent of the initial allocation. This reduction would be phased in gradually at 5 percent per year starting in the second year of the program for a total of four years to phase in the PSC limit reduction.

Under Alternative 4, PSC allowance would be allocated to the Non-AFA Trawl CP sector for use while targeting their allocation of groundfish and any other non-allocated BSAI groundfish. PSC allowance allocated to the sector will be further divided between the cooperatives and the non-cooperative pool.

Based on the eligibility requirements under this alternative, 26 vessels appear to qualify for the Non-AFA Trawl CP sector. Four vessels with trawl CP licenses failed to harvest the required 150 mt of BSAI groundfish with trawl gear and process that catch between 1997 and 2002.

Under Alternative 4, 30 percent of the eligible vessels would be needed to form a cooperative. In addition, at least three unique entities are required for cooperative formation (using the 10 percent AFA rule). Since under Alternative 4 there are likely to be between 26 qualified vessels, at least seven vessels would be needed to form a cooperative. If each of the cooperatives had the minimum required seven vessels, three cooperatives would be formed in the Non-AFA Trawl CP sector.

For Alternative 4, the allocation of the Amendment 80 species and PSC allowance between the cooperatives and the sector limited access fishery would be based on total catch of the allocated species of cooperatives and the pool of sector limited access fishery participants using years 1998-2004 dropping the two lowest annual catches. Given that it is not possible to determine with certainty which vessels will join the cooperative very little can be said about the impacts of this alternative will have on the distribution of catch, other than it will vary somewhat compared to Alternatives 3 and 4.

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<sup>60</sup> Both AI POP and Atka mackerel allocations between sectors will be phased in over time. For EAI and CAI POP, the allocation would be 95 percent the first year and 90 percent the second year. For WAI, the allocation would be 98 percent. For EAI/BS and CAI Atka mackerel, the allocation would be 98 percent the first year, decreasing in 2 percent increments over a four year period to 90 percent. For WAI, 100 percent of the Atka mackerel would be allocated to the Non-AFA Trawl CP sector.

Using total catch during the years 1998-2004 drop 2 years, the number of vessels that would be below with minimum allocation for flathead sole (0.1 percent), rock sole (0.5 percent) and yellowfin sole (0.5 percent) would be less than 3. Similar to Alternative 2, confidentiality requirements limit the amount information that can be released.

Atka mackerel allocation under Alternative 4 would be based on total catch for the years 1998-2004 drop 2 years. Under this alternative, vessels less than 200' in length having less than 2 percent of the sector's Atka mackerel history will receive 6 percent of the BSAI Atka mackerel of which 4.6 percent would come from EAI/BS, 1.2 percent would come from the CAI, and the remaining .2 percent would come from the WAI. Applying these allocations to the 2005 TAC, the non-mackerel vessels would receive 38.6 percent of the EAI/BS TAC, 2.1 percent of the CAI TAC, and 0.6 percent of the WAI. After deducting the allocation to the non-mackerel vessels, the remaining 94 percent of the BSAI Atka mackerel would be reserved for vessels greater than 200' in length or have more than 2 percent of the sector's BSAI Atka mackerel allocation.

Consolidation would be limited under Alternative 4. At least one company was over the 30 percent cap under this alternative. The exact number cannot be reported to protect confidential data. This information in general indicates that the sector can undergo some consolidation under this alternative. Allowing the fleet to consolidate should enable the remaining companies to operate more efficiently. Improvements will be due to the cost savings that result from retiring vessels that are the least efficient.

In addition to the ownership caps, the Council also included a 10 percent vessel use cap in Alternative 4. A vessel use cap would limit the percentage of the Non-AFA Trawl CP sectors allocation of the five species that a vessel could harvest ensuring that a minimum number of vessels remain in the fishery. At the 10 percent level 1 to 4 vessels would be impacted. While this does not indicate the number of vessels that would be impacted by vessel use caps in the future, it does show that selecting a 10 percent use cap could prohibit vessels from harvesting their historic percentage of the sector's catch. The alternative includes a grandfather provision for those vessels that have harvested over the 10 percent cap. If a vessel is assigned an amount of the sector's allocation above the use cap, the vessel would be grandfathered to harvest the percentage of the sector's allocation equal to their initial allocation. However, these vessels would be unable to harvest any portion of another vessel's allocation, in addition to their own.

Limiting the harvest of vessels over the cap may prohibit some of the most economically efficient harvesters from catching as much of the sector allocation as they would without use caps. Limiting their harvest will restrict efficiency improvements. Requiring less efficient vessels to harvest more of the sector's allocation will reduce net benefits to the Nation and could reduce the compensation vessels wishing to exit the fishery will receive.

Sideboard limits within Alternative 4 would implement the program outlined in Table 4-20. No sideboard limits would be established for the BSAI. Any sideboard limits imposed in the GOA would apply to the vessels in the Non-AFA Trawl CP sector, as well as the LLPs associated with those vessels.

**Table 4-20 Summary of sideboards for Alternative 4**

Annual Sideboard Limit	All C/P Cooperatives	All C/P Limited Access
<p><b>Catch limits ... See 12.4.4</b> Western GOA Pollock, Pacific cod, POP, Pelagic Shelf, and Northern Rockfish</p>	<p>All C/P Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a sideboard limit in that area and season</p>	<p>All C/P Non Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a Sideboard limit in that area and season</p>
<p>Central GOA Pollock, Pacific cod</p>	<p>Sideboard limit cap (% set by Council at time of motion) = % of TAC.</p>	<p>Sideboard limit cap (% set by Council at time of motion) = % of TAC.</p>
<p>West Yakutat Pollock, Pacific cod, POP, and Pelagic Shelf Rockfish.</p>	<p>Co-op Sideboard limit = Catch History of all Amendment 80 co-operative vessels during 1998-2004  / Catch History of All Amendment 80 C/Ps during 1998-2004 x sideboard limit cap.  Sideboard limits would be divided among cooperatives based on the amount of sideboard history assigned to the vessels that join each cooperative.</p>	<p>Limited Access Sideboard limit =  Catch History of all Amendment 80 limited access vessels during Component 10 years  / Catch History of All Amendment 80 C/Ps during Component 10 years x sideboard limit cap.</p>
<p><b>See 12.4.5</b> Central GOA POP, Pelagic Shelf, and Northern Rockfish</p>	<p>Does not apply as long as Rockfish Pilot Program is in place, otherwise, compute the CGOA rockfish sideboard limit using the same method as described above.</p>	<p>Does not apply as long as Rockfish Pilot Program is in place, otherwise, compute the CGOA rockfish sideboard limit using the same method as described above.</p>

<p><b>See 12.4.3 Halibut mortality limits ...</b></p> <p>GOA-wide</p> <p>(1) Shallow-water limit, &amp;</p> <p>(2) Deep-water limit</p> <p>See Table ES-15 below:</p>	<p>All C/P Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a halibut PSC limit for each seasonal trawl apportionment for the two complexes.</p> <p><b>Seasonal apportionment already set by Council in Table ES-15 below.</b></p> <p>(1) Once the shallow-water cap is met, all directed fishing for all species in the shallow-water complex is closed in the GOA;</p> <p>(2) Once the deep-water cap is met, all directed fishing for all species in the deep-water complex is closed in the GOA</p>	<p>All C/P Non Co-op vessels and LLP associated with that vessel <b>See 12.4.6</b> would be subject to a halibut PSC limit for each seasonal trawl apportionment for the two complexes.</p> <p><b>Seasonal apportionment already set by Council in Table ES-15 below.</b></p> <p>(1) Once the shallow-water cap is met, all directed fishing for all species in the shallow-water complex is closed in the GOA;</p> <p>(2) Once the deep-water cap is met, all directed fishing for all species in the deep-water complex is closed in the GOA.</p>
<p><b>Inferred from See 12.4.1 Prohibited Directed Flatfish Fishing ...</b></p> <p>All directed GOA flatfish fisheries</p>	<p>If a vessel gave rise to an LLP with catch history <b>less</b> than or equal to 10 weeks in directed flatfish fishing in any GOA flatfish fishery (not 10 weeks/area) during the years selected under component 10 then that vessel and any LLP licenses used on the vessel that generated history for that vessel (<b>See 12.4.6</b>) will be prohibited from directed fishing in all GOA flatfish fisheries.</p>	
<p><b>Inferred from 12.4.1 Flatfish Sideboard Limit ...</b></p> <p>All directed GOA flatfish fisheries.</p>	<p>If a vessel gave rise to an LLP with catch history <b>more</b> than 10 weeks in directed flatfish fishing in any GOA flatfish fishery (not 10 weeks/area) during 1998-2004 then that vessel and LLP associated with that vessel (<b>See 12.4.6</b>) will <u>not</u> be subject to a directed fishing sideboard limit for that flatfish fishery in that area and that season. A total of 13 Non-AFA Trawl CP vessels would be allowed to continue fishing in the GOA flatfish fisheries.</p>	
<p><b>See 12.4.2 Exemption from GOA halibut and flatfish sideboard limits in West Yakutat, Central GOA, and Western GOA</b></p>	<p>If a vessel has fished 80% of their weeks fished in the GOA from 2000-2003 in GOA flatfish fisheries, that vessel will be exempt from Amendment 80 halibut sideboards in the GOA and may participate fully in the GOA open-access flatfish fisheries. The history of this vessel will not contribute to the non-AFA Trawl CP sideboards and its catch will not be subtracted from these sideboards. <b>One vessel met this exemption's requirements.</b></p>	

GOA sideboard percentages for the following species and areas are included under Alternative 4 (see Table 4-21). The sideboards are designed to limit participation in the pollock, Pacific cod, and directed rockfish species not allocated under the Rockfish Pilot Program. The pollock and Pacific cod sideboards will constrain the harvest of these species by limiting vessel's incentives to join the inshore component of the GOA fleet. Rockfish sideboard limits are less restrictive, but could provide some protections to the other GOA vessels operating in pelagic shelf rockfish fisheries.

**Table 4-21 GOA sideboard estimates and average historic catch**

Species	Alternative 4		Average Catch of Non-AFA Trawl CPs (95-03)
	Sideboard %	Estimated Sideboard (mt)	
<b>Pollock</b>			
Pollock 610	0.3%	91	120
Pollock 620	0.2%	34	100
Pollock 630	0.2%	19	
Pollock 640	0.2%	4	
<b>Central Gulf</b>			
Pacific Ocean Perch	RDP	RDP	4,179
Pelagic Shelf Rockfish	RDP	RDP	1,620
Northern Rockfish	RDP	RDP	1,156
Pacific Cod	4.4%	1,355	2,024
<b>Western Gulf</b>			
Pacific Ocean Perch	99.4%	2,549	1,456
Pelagic Shelf Rockfish	76.4%	288	135
Northern Rockfish	100.0%	808	443
Pacific Cod	2.0%	314	553
<b>West Yakutat</b>			
Pacific Cod	3.4%	*	*
Pacific Ocean Perch	96.1%	808	784
Pelagic Shelf Rockfish	89.6%	182	116

Source: Sideboard percent was estimated using the retained catch of the 26 Non-AFA Trawl CP vessels (as estimated in the Council IR/IU and GOA Rationalization data base) divided by the retained (Alt 2) or total (Alt 3) catch of all vessels in the GOA, as reported in the NOAA Fisheries catch and bycatch reports (1995-2003).

Note: n/a - Indicates that no sideboard is implemented. Only vessels with a sufficient number of weeks fished in GOA flatfish fisheries may participate in a directed flatfish fishery.

RDP - Indicates that species will be managed under the Rockfish Demonstration Program

Finally, GOA halibut PSC caps would be set based on historic usage of halibut PSC. Table 4-22 shows the percentages of the Deep and Shallow water halibut allotments by quarter that would be issued under this alternative. A total of 760.5 mt of halibut would be assigned to the Non-AFA Trawl CP sector. This is a larger allocation than proposed under Alternatives 2 (747 mt) or Alternative 3 (711 mt). Therefore, Alternative 4 would provide the Non-AFA Trawl CP sector the greatest opportunity to participate in the GOA flatfish fisheries. These fisheries typically close due to halibut mortality caps being reached. The difference in catch and revenue that will result from the various caps cannot be estimated with certainty. The magnitude of the difference will depend on reductions in halibut bycatch that may occur under the program.

**Table 4-22 GOA Trawl Halibut PSC Sideboard estimates (mt)**

Alternative	Quarter				Total
	1	2	3	4	
	<b>Trawl Halibut PSC Allotment to Deep Water, by Quarter (mt)</b>				
Alt 4	56.82 (2.84%)	238.49 (11.92%)	231.91 (11.60%)	81.87 (4.09%)	609.09 (30.45%)
	<b>Percent of Trawl Halibut Allotment to Shallow Water by Quarter</b>				
Alt 4	16.93 (0.85%)	38.47 (1.92%)	41.19 (2.06%)	54.79 (2.74%)	151.38 (7.57%)

With regards to meeting the GRS, Non-AFA Trawl CP sector participants would likely be better off under Alternative 4 than under Alternative 1. Like the previous two alternatives, sector participants that join a cooperative can pool their individual annual GRS rates across the cooperative thereby helping to reduce operation costs for those vessels limited by the GRS. Overall, given the flexibility of this alternative, each cooperative will minimize the cost of meeting the GRS to the extent possible.

### **Effects on Catcher Processor Efficiency**

Production efficiency of the Non-AFA Trawl CP sector under the status quo is limited to some degree by the race for fish under the current LLP fishery and GRS. Sector participants are compelled to race for groundfish with other sector participants, as well as other participants in other sectors throughout the period the fisheries are open. Generally, participants in the Non-AFA Trawl CP sector are equipped to produce whole and head and gut frozen products. Production of these products is likely to continue, if the status quo is maintained. Participants in the Non-AFA Trawl CP must comply with GRS, which could limit production efficiency. With higher retention rates required for vessels greater than 125 ft, sector participants are constrained in production efficiency.

Under Alternatives 2 and 4 more than Alternative 3, the Non-AFA Trawl CP sector is likely to realize some gains in production efficiency capturing greater rents from the allocated fisheries despite having to comply with GRS. Under Alternatives 2 and 4, most eligible participants in the Non-AFA Trawl CP sector are likely to join a cooperative, since operations in the limited access fishery are likely to be less efficient (and less profitable) and it will be easier to meet the cooperative formation requirements. However, there is some potential under Alternative 3 that some eligible participants may elect not to join a cooperative.

### **Effects on the CDQ Program**

Alternatives 2, 3, and 4 would increase CDQ percentage allocations for both primary target and incidental catch species. Under Alternatives 2 and 4, CDQ percentage allocations for each of the primary target species identified in Component 1 and associated secondary species taken incidental in the primary trawl target fisheries would increase to 10 percent. Under Alternative 3, the percentage allocations for both target and incidental catch species would increase to 15 percent. The PSQ percentage allocations would increase proportionately under each alternative, as well. Under Alternatives 2 and 4, the PSQ percentage allocation would increase to 10 percent, and under Alternative 3 would increase to 15 percent. Currently, the CDQ Program receives 7.5 percent of each groundfish TAC and PSC limit as CDQ and PSQ reserves. These reserves are further allocated among six CDQ managing organizations (CDQ groups). CDQ groups plan and conduct fishing operations for their CDQ allocations, and then receive royalties from the harvest of their CDQ. This revenue is used to provide a means for starting and supporting commercial fisheries business activities in CDQ communities in western Alaska.

CDQ groups have had varied, but increasing, success in harvesting their existing CDQ allocations for primary target species. In the last several years, CDQ groups have harvested the majority of their yellowfin sole, Atka mackerel, and Pacific Ocean perch allocations. They have not been very successful at harvesting their rock sole and flathead sole CDQ allocations. The increased CDQ percentage allocations for primary target species considered under Alternative 2, Alternative 3, and Alternative 4 could allow CDQ groups to receive larger CDQ allocations, if the TACs for these species remained constant or increased. If fully harvested, this could provide additional CDQ royalties to CDQ groups. Harvesting any increased allocations of target species probably would result in increased catch of incidental catch species and prohibited species in the CDQ fisheries. The increases to CDQ and PSQ percentage allocations for incidental catch species proposed under Alternatives 2, 3, and 4 are meant to allow the CDQ Program to have adequate CDQ reserves to account for the additional catch of incidental and prohibited species that could occur along with the catch of increased allocations of primary target species. The actual benefits that each CDQ group would receive from increased primary species

allocations cannot be estimated given currently available information. The relatively small size of these quotas, variability in the amount of each primary species harvested in past years, and lack of specific information about CDQ royalty rates makes it difficult to estimate the future CDQ Program benefits associated with increasing CDQ percentage allocations for primary target species.

### **Effects on Consumers**

Although production of the sector is typically high quality, some quality improvements could be achieved as cooperative allocations will remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Improvements will be limited to those in a cooperative, but since most (if not all members of the sector are likely to join cooperatives) these improvements should be realized throughout the fleet. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into these markets.

Production of the Non-AFA Trawl CP sector participants is likely to be similar to current production under Alternatives 2 and 4. The allocations under Alternative 3 could reduce the amount of the flatfish species allocated to the Non-AFA Trawl CP sector. If the portion of the TACs assigned to sectors, other than the Non-AFA trawl CP sector, is not harvested, and the amounts of those fish rolled-over to the Non-AFA Trawl CP sector cannot be harvested due to halibut constraints, the reduced supply could negatively impact consumers through higher prices. Market prices for these species will depend on other world flatfish markets. If substitute products are available at similar prices, consumer impacts would be small. The lack of information on these markets precludes quantitative estimates of the impacts on U.S. consumers.

### **Effects on environmental/non-use benefits**

Public non-use benefits derived from the management of healthy stocks of these species are likely to be maintained, if the current management is perpetuated.

Under Alternatives 2, 3 and 4, NOAA Fisheries will make annual, exclusive cooperative allocations for the five allocated species. The proposed action will require eligible Non-AFA Trawl CP vessels under 125 ft length overall to meet the GRS. These measures should have the effect of reducing bycatch and discards, contributing additional non-use benefits that might arise from productive use of the resource. In addition, if Alternative 3 reduces the harvest of the allocated species below the allowed catch, the unharvested fish will remain in the BSAI ecosystem, which is considered a benefit to the environment.

### **Effects on Management, Monitoring, and Enforcement Costs**

In addition to the monitoring challenges documented under other quota programs, Amendment 80 includes additional catch accounting and compliance challenges specific to this type of dedicated access program. To address these challenges, additional requirements will be needed to manage these sector allocations and allow single or multiple cooperatives to function. Proposed monitoring components for all non-AFA trawl CPs while fishing in the BSAI are described below.

8. All vessels would be required to weigh all catch on NMFS-approved scales and provide an observer work station.
9. All hauls would available to be observed by NMFS-certified observers.
10. Vessels would be prohibited from having more than one operational line or other conveyance device for the mechanized movement of catch between the scale used to weigh total catch and the location where the observer collects species composition samples.
11. The observer must be able to view all the activities of crew inside the bin locate prior to where the observer collects unsorted catch. The vessel would be required to choose, and have approved at the time of the observer sampling station inspection, one of three options to meet this requirement. These options are:

**Limit Tank Option.** Crew would be prohibited from entering any tank located prior to where the observer collects unsorted catch, unless:

- The flow of fish has been stopped between the tank and the location where the observer collects unsorted catch, and;
- All catch has been cleared from all locations between the tank and the location where the observer collects unsorted catch, and;
- The observer has been given notice that vessel crew must enter the tank, and;
- The observer is given the opportunity to observe activities of the person(s) in the tank.
- The observer has informed vessel personal that he or she has completed all sampling activities.

**Line of sight option.** From the observer sampling station and the location from which the observer collects unsorted catch, an observer must be able to see all areas of the bin where crew could be located. This requirement may be accomplished by creating a viewing port inside the bin, and would be approved by NMFS during the observer sample station inspection.

**Video option.** A vessel may provide and maintain cameras, a monitor, and a digital video recording system for all areas of the bin where crew could be located. The video data must be maintained and made available to NMFS upon request for no less than a 120 day period. This option would also be subject to approval by NMFS at the time of the observer sample station inspection.

12. Unsorted catch would be prohibited from remaining on deck outside of the codend without an observer present, except for fish accidentally spilled from the codend during hauling or dumping.
13. A vessel operator would be required to document the flow of fish within the vessel's factory.
14. Each vessel would be required to provide the opportunity for a pre-cruise meeting.

The costs for the monitoring program include both accounting costs (that are itemized to the extent feasible) and other opportunity costs (that are difficult to quantify). Total costs for scale, sample station, observer requirements, and factory modifications necessary to comply with other proposed requirements for each vessel greater than or equal to 125 ft. range between approximately \$64,045 and \$365,545. Total costs for these categories for each vessel less than 125 ft. range between \$182,225 and \$406,725. Other costs associated with these proposed monitoring requirements could include decreased operating efficiencies or additional crew.

In addition to costs borne by the vessels, increases in the number of observer days and their associated increase in the amount of data collected is expected to raise overall annual costs of the Observer Program. This budgetary increase can be attributed to additional staffing, augmented spending for observer sampling equipment, data entry contracts, and travel associated with inspecting sample stations, and conducting pre-cruise meetings. The Observer Program estimates increased staffing and costs associated with this action to include 3.5 full time equivalent staff positions and approximately \$450,000 annually.

NMFS believes that anticipated benefits of a Non-AFA Trawl CP cooperative as currently outlined, including the expectation of reduced effort and capital inputs through a slower paced fishery substantially depend on these proposed monitoring improvements. A multi-species cooperative, with internal transactions and contracts requires reliable catch accounting to create secure agreements. Because Amendment 80 monitoring requirements would include flow scales, observer stations, observation of every haul, and additional requirements described above; some improvements to management catch accounting may also occur. For example, direct measurement of weight on a flow scale is likely to be more reliable than alternative observer measurements based on volumetrics and density.

**Effects on Communities**

The fishing communities that are expected to benefit from this proposed action are the locations the vessels offload, take on supplies, and the owners and crew live. Twenty-seven catcher processors appear to be eligible for the Non-AFA Trawl CP sector. Of these vessels, nearly all are based in Seattle. Due to the large size and diversity of Seattle's economy, community-level impacts are not expected to differ between Alternatives 2, 3 and 4. Significant benefits to other communities that are home to some of the other Non-AFA Trawl CP fleet are not expected. Vessels located in those communities will continue to generate revenue from these fisheries. Changes in benefits to the community could occur, but the magnitude of the change is expected to be relatively small. Impacts on other communities with ties to catcher vessels cannot be quantitatively, but they are expected to be relatively small based on historic participation in the five primary BSAI fisheries and the sideboard caps proposed for other fisheries.

**Effects on Net Benefits to the Nation**

Under status quo, producer surplus is expected to remain at current levels until Amendment 79 is implemented. After Amendment 79 is implemented, producer surplus will decline. The amount of the decline is equal to the increased processing and monitoring costs of the vessel. Revenues are assumed to remain constant. However, the potential exists that more inferior products could be produced because of retaining fish that are of a size that are in less demand or of the wrong sex (e.g., rock sole during the roe season). Prices paid by consumers are not expected to increase or decrease because of this action.

**Alternative 2**

Net benefits to the Nation would likely increase under Alternative 2 relative to Alternative 1. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. Participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the user cap. With fewer vessels, the harvesting costs should also decline. Some additional benefits would also likely accrue from the additional 2.5 allocation for the Amendment 80 species to the CDQ program, which would also benefit from a slower paced fishery.

The alternative would require increased monitoring and enforcement costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches. Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

A producer surplus would likely be generated some net benefits for the Nation under Alternative 2 as a result of pooling individual annual vessel GRS rates. Vessels that join a cooperative would average their individual annual retention rates across all cooperative participants, which would help to reduce operation costs for those vessels limited by the GRS. Overall, each cooperative will seek to minimize the cost of meeting the GRS to the extent possible.

Consumer surplus is expected to increase. The Non-AFA Trawl CP sector will continue to produce mostly frozen round and headed and gutted products primarily. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S. and European consumers, as most of the production from this sector is sold into that market.

**Alternative 3**

Net benefits to the Nation would likely be smaller under Alternative 3 relative to Alternative 2. It is difficult to compare the changes in Net benefits between Alternatives 1 and 3. The amount of fish the Non-AFA Trawl CP sector can legally harvest under Alternative 3 relative to the status quo, is reduced.

However, the benefits of cooperatives are expected to increase the overall efficiency of the fleet. The benefit of a cooperative under this alternative will depend on whether a sufficient number of members of the sector are able to reach agreement and whether persons not in the initial cooperative are able to come to terms with the cooperative. If no cooperative forms, sector efficiency would be similar to that of status quo.

An additional unknown under this alternative is how much of the allocation to the general limited access fishery will be harvested by other sectors, and how efficient will they be when harvesting and processing that catch. The allocation to the general limited access fishery under this alternative exceeds the combined AFA Trawl CP and CV sideboards. Without substantial increases in effort by the Non-AFA Trawl Catcher Vessels, large portions of the allocation to the general limited access fishery would go unharvested. If the other sectors do not harvest their portion of the TAC and large amount of quota are rolled over late in the year, it may be of less value to the Non-AFA Trawl CP fleet than if it was available earlier.

Similar to Alternatives 2 and 4, the Nation would likely see an increase in net benefits from the pooling of individual vessel annual GRS rates while in a cooperative. However, unlike Alternatives 2 and 4, which has the potential for multiple cooperatives, Alternative 3 allows only one cooperative. As a result, there is a chance that some members of the sector will not join the cooperative thus reducing the benefits of pooling annual vessel GRS across the cooperative. In general, members of the cooperative will seek to minimize the cost of meeting the GRS to the extent possible, thereby creating a producer surplus under this alternative.

Under this alternative, the CDQ Program would be allocated 15 percent of the annual TAC for each of the allocated species. The CDQ program would also receive 15 percent of the TAC for the incidental catch species (with the exception of Pacific cod) taken in the Amendment 80 allocated species. The additional 7.5 percent increase in non-pollock groundfish (except Pacific cod) would likely slow the pace of fishing and processing for participants in the CDQ program, thus potentially reducing expenditures on inputs and increase output slightly. However, the benefits will be reduced if the CDQ program fails to harvest their entire allocation.

Like Alternative 2, this alternative could increase the net benefits to the Nation from the reduction in discards. However, producer surplus will be reduced, from what it could have been due to an increase in vessel monitoring costs.

This alternative is expected to increase consumer surplus. The Non-AFA Trawl CP sector will continue to produce frozen round and headed and gutted products primarily. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S. and European consumers, as most of the production from this sector is sold into that market.

#### **Alternative 4**

Net benefits to the Nation under Alternative 4 are difficult to determine due to the number of components that still need further narrowing. In October 2005, the Council selected a preliminary preferred alternative, but left a number of decisions unresolved. Despite the broad nature of this alternative, it is estimated that the net benefits to the Nation would likely increase under Alternative 4 relative to Alternative 1. Contributing to the increase in net benefits to the Nation is the increase in producer surplus from Non-AFA Trawl CP sector participants fishing in cooperatives. Although allocations of groundfish and PSC have yet to be determined, based on the options selected by the Council that still need to be further narrowed, it is estimated that the groundfish and PSC allocations to the Non-AFA Trawl CP will be comparable to their historic catch and will facilitate the formation of multiple cooperatives under this alternative. Cooperative participants would be able to slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increasing output slightly. These participants would also be free to consolidate fishing up to the user cap which still needs to be identified by the Council. With fewer vessels, the harvesting costs should also decline.

Some additional benefits would also likely accrue from the additional 2.5 allocation for the Amendment 80 species to the CDQ program. The increased CDQ allocation will slow the pace of fishing and processing, thus potentially reducing expenditures on inputs and increase output slightly. If the CDQ program fails to harvest their entire allocation, any amount of allocation left unharvested would tend to reduce the net benefits.

The alternative would also require increased monitoring and enforcement costs necessary for meeting the GRS for Non-AFA Trawl CP vessels under 125 ft. LOA. These costs are associated with additional observer coverage, costs associated with vessel modification to better allow the catch to be observed, and slowing processing and harvesting below optimal levels to enable more accurate counts of total groundfish and PSC catches. Some additional benefits to the Nation could arise through reduction in discards, since sector vessels under 125 ft. LOA will have to meet the GRS.

Similar to Alternatives 2 and 3, the Nation would also likely see an increase in net benefits from the pooling of annual vessel GRS rates across the cooperative. Individual vessel retention rates would be averaged across all cooperative participants, helping those vessels with historically low retention rates to lower their operating costs. In general, members of each cooperative would seek to minimize their costs of meeting the GRS to the extent possible thereby generating a producer surplus.

Under this alternative, consumer surplus is expected to increase. The Non-AFA Trawl CP sector will continue to produce mostly frozen round and headed and gutted products primarily. Quality of products could improve slightly as cooperative allocations remove pressure to rapidly catch and process fish to maximize catch from the fisheries. Any improvements in consumer benefits arising from improved quality are likely to be realized by Asian, U.S., and European consumers, as most of the production from this sector is sold into that market.

## **Environmental Assessment**

The Environmental Assessment discusses the environment that would be affected by the alternatives, and then describes the impacts of the alternatives. The following components of the environment are discussed: the primary target species to be allocated under the alternatives, prohibited species, other fish species, benthic habitat and essential fish habitat, marine mammals and seabirds, economic and socioeconomic components, and the ecosystem as a whole.

The current fishery management program, represented by Alternative 1, was analyzed in detail in the *Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement* (NMFS 2004b), the *Environmental Impact Statement for Essential Fish Habitat Identification and Conservation in Alaska* (NMFS 2005), and updated in the annual Environmental Assessment of Harvest Specifications for the Years 2005-2006 (NMFS 2004a). These analyses concluded that the groundfish fisheries, in the status quo, are not affecting a significantly adverse impact on the environment.

In most instances, the effects of Alternatives 2, 3 and 4 have been considered together, as there is little difference between these alternatives in terms of their impact on the physical and biological environment. Under these alternatives, a sector allocation is made that will allow the formation of cooperatives. This will likely change fishing patterns, and may distribute fishing for the primary target species over a longer season or more diverse area. Harvest levels for the primary target species will, remain unaffected, as well the existing management measures that distribute the harvest in space and time. As a result, the impact of the alternatives on these species is not assessed to be significant.

Incidental catch patterns may change as a result of Alternatives 2, 3 and 4, as the fisheries endeavor to meet the groundfish retention standard and reduce discards. In addition, an option under the alternatives would require the fisheries to reduce their historic proportion of prohibited species catch. The increased flexibility afforded to the Non-AFA Trawl CP sector under these alternatives should allow the sector to reduce discards. However, prohibited species catch limits and harvest quotas for other incidental catch species will continue to be set at biologically sustainable levels under these alternatives, and regardless of

the ability of the sector to reduce its incidental catch, the impact to the sustainability of these incidental species is not assessed to be significant.

As the amount of overall fishing effort under the alternatives is likely to remain the same or decrease, the alternatives are unlikely to result in a change that would significantly impact seabirds or marine mammals that interact with the groundfish fisheries. Similarly, minimal and temporary impacts to benthic habitat and essential fish habitat are unlikely to be aggravated by these alternatives.

The economic and socioeconomic impacts of the alternatives are summarized in the RIR above.

An evaluation of the effects of the groundfish fisheries on the ecosystem is undertaken annually in the *Stock Assessment and Fishery Evaluation* report. Based on the discussions above regarding population-level impacts of Alternatives 2, 3 and 4, and the lack of other impacts to ecosystem attributes, the alternatives are not assessed to have a significant impact on the ecosystem.

The cumulative effects of the proposed alternatives are also evaluated in the Environmental Assessment. The analysis of past actions affecting the Non-AFA Trawl CP sector showed that, since the mid-1980s, adjustments in the regulatory regime have changed the economic conditions of the groundfish fisheries in which these vessels participate. An increasingly restrictive regulatory environment and escalating compliance costs resulted in economical stress for some Non-AFA Trawl CP owners. The increased restrictions were also a primary reason that flatfish became the primary target species for the Non-AFA Trawl CP sector. Because these species are bottom-dwellers, flatfish fisheries are prone to high incidental catches of prohibited species such as halibut and crab. In addition, flatfish fisheries have limited markets—particularly with regard to size and product quality. These characteristics of the flatfish fisheries, in combination with a “race for fish” regime and other factors, led to a relatively high level of economic and regulatory discards in the Non-AFA Trawl CP sector.

In recent years, the Non-AFA Trawl CP fleet has faced increasing pressure to reduce its discard rate. In 2003, the Council established a minimum groundfish retention standard for Non-AFA Trawl CPs greater than 125 ft length overall. The GRS will result in a substantial reduction in the bycatch of the affected vessels. However, a GRS may also result in substantial costs and lost revenues for these vessels because of holding/processing, transporting and transferring fish that are of relatively low value or “unmarketable.” In addition, the GRS measure imposes significant costs on the vessels with increased observer and scale costs.

With the possible exception of the BSAI Pacific cod allocation and rationalization programs, the reasonably foreseeable future actions cited above may have negative effects (to some degree) on the economic performance of Non-AFA Trawl CP sector. The cumulative effects of all actions—past, present, and future—are toward an increasingly restrictive regulatory environment resulting in lower harvests and gross revenues and/or higher operating costs. While some foreseeable future actions may offset these negative effects to some extent, the overall trend points to increasing economic stress for the Non-AFA Trawl CP sector.

The conclusions reached in the direct and indirect effects analysis of the cooperative alternatives indicate that the compliance costs incurred under a GRS may be mitigated by the benefits of participating in a cooperative. The costs of the GRS associated with retaining unwanted fish may be reduced or avoided altogether under a cooperative structure, as vessels can be more selective in what they catch without losing any competitive advantage. In addition, a cooperative structure may allow the sector to manage its PSC allocation in a manner that prevents PSC limits from being exceeded and thereby avoids the lower harvests and revenues associated with fishery closures when PSC limits are reached.

### **Initial Regulatory Flexibility Analysis**

The directly regulated entities in this action include all of the groundfish harvesters in the BSAI and GOA and the processors that take delivery of their catch, plus the CDQ groups and communities. A total of 996

vessels were classified as small entities in 2003 based on the \$3.5 million revenue threshold. Seventy-one vessels were classified as large entities that year. All but one of the 27 vessels in the Non-AFA Trawl CP sector are considered large entities based on the \$4 million threshold applied to all vessels owned by an entity. The owners of some catcher processors have requested that the small entity definition be updated to use the processor definition. Changing the criteria would reclassify most of the sector as small entities. NMFS is currently reviewing that definition, but until the review is complete, the current definition will continue to be used.

A total of 36 processors in the BSAI and GOA have less than 500 employees. These processors, on average, generated about \$0.9 million in revenue from groundfish and had total revenues from all seafood processing of about \$5.2 million. The processors with over 500 employees averaged \$43.5 million in groundfish revenues and \$79.1 from all fish products (NMFS, 2002). The small processors will be protected by imposing sideboard limits. The protections should have a limited impact though, because many of the species are primarily processed at-sea.

All six CDQ groups and the 65 communities associate with those groups are considered small entities. The alternatives considered in this amendment would either maintain their current allocation or increase the amount of specific species they are allocated. The royalty increases are expected to be small relative to total annual revenues by these groups. These groups are dominated by pollock, crab, halibut, and Pacific cod, but the royalty increases would likely help further the mission of improving the lives of residents of rural Western Alaska.

#### **4.3.8 Ecosystem**

Ecosystems are populations (consisting of single species) and communities (consisting of two or more species) of interacting organisms and their physical environment that form a functional unit with a characteristic trophic structure (food web) and material cycles (movement of mass and energy among groups).

Three natural processes underlie changes in population structure of species in marine ecosystems: competition, predation, and environmental disturbance. Natural variations in recruitment, survivorship, and growth of fish stocks are consequences of these processes. Human activities, such as commercial fisheries, can also influence the structure and function of marine ecosystems. Fishing may affect ecosystems by altering energy flows, changing predator-prey relationships and community structure, introducing foreign species, affecting trophic or functional diversity, altering genetic diversity, altering habitat, and damaging benthic organisms or communities.

An assessment of the ecosystem trends in the BSAI management area was undertaken by Livingston et al. in 1999. The study showed a stable trophic level of catch and stable populations overall. The trophic level of the Bering Sea harvest has risen slightly since the early 1950s and appears to have stabilized as of 1994.

Further information on the ecosystem may be found in the Ecosystems Considerations appendix to the *Stock Assessment and Fisheries Evaluation* report (NPFMC 2004) and the Groundfish PSEIS (NMFS 2004b).

#### **Effects of the alternatives**

An evaluation of the effects of the five primary target species fisheries on the ecosystem is undertaken annually in the *Stock Assessment and Fishery Evaluation* report. None of the chapter authors cite an adverse effect on the ecosystem deriving from these fisheries. There are areas cited as possible concerns, due to lack of data. These include the catch of coral, bryozoan, or sponge biota in the Atka mackerel and Pacific Ocean perch fisheries, as discussed above, and the effect of bycatch levels on species for which age-structured assessments are not available.

At an ecosystem level, the impacts of Alternatives 2, 3, and 4 from Alternative 1 cannot be distinguished. Based on the discussions above regarding population-level impacts, and the lack of other impacts to ecosystem attributes, the alternatives will not have a significant impact on the ecosystem.

#### **4.3.9 Cumulative Effects**

Analysis of the potential cumulative effects of a proposed action and its alternatives is a requirement of NEPA. Cumulative effects are those combined effects on the quality of the human environment that result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what Federal or non-Federal agency or person undertakes such other actions (40 CFR 1508.7, 1508.25(a), and 1508.25(c)). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The concept behind cumulative effects analysis is to capture the total effects of many actions over time that would be missed by evaluating each action individually. At the same time, the CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action on the universe but to focus on those effects that are truly meaningful.

The 2004 Final Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement (Groundfish PSEIS) assesses the potential direct and indirect effects of groundfish FMP policy alternatives in combination with other factors that affect physical, biological and socioeconomic resource components of the BSAI and GOA environment. To the extent practicable, this analysis incorporates the cumulative effects analysis of the Groundfish PSEIS, including the persistent effects of past actions and the effects of reasonable foreseeable future actions.

Beyond the cumulative impacts analysis documented in the Groundfish PSEIS, no additional past, present, or reasonably foreseeable cumulative negative impacts on the natural and physical environment (including fish stocks, essential fish habitat, ESA-listed species, marine mammals, seabirds, or marine ecosystems), fishing communities, fishing safety or consumers have been identified that would accrue from the proposed action. Cumulatively significant negative impacts on these resources are not anticipated with the proposed action because no negative direct or indirect effects on the resources have been identified.

While there are no expected cumulative adverse impacts on the natural and physical environment, fishing communities, fishing safety or consumers, there may be economic effects on the Non-AFA Trawl CP (head-and-gut) sector as a result of the proposed action in combination with other actions. As discussed below, Non-AFA Trawl CPs have experienced several regulatory changes in the past several years that have affected their economic performance. Moreover, a number of reasonably foreseeable future actions are expected to affect the socioeconomic condition of this harvesting sector.

##### **4.3.9.1 Past and Present Actions**

This section describes the effects of the original BSAI Groundfish FMP and its amendments and other pertinent external factors that could contribute to potential cumulative impacts on the Non-AFA Trawl CP sector. Past actions are evaluated to determine whether there are lingering effects that may still result in synergistic or incremental impacts when combined with the proposed action.

The Groundfish PSEIS noted that the availability and consistency of data limits the ability to analyze the effects of past actions on the economic condition of selected sectors of the Alaska groundfish fishery. According to the Groundfish PSEIS, analyses are also limited by the difficulty of delineating the cause-and-effect relationships between multiple factors and the resultant economic effects. Many factors substantially affect the economic status of the Alaska groundfish fishery. Changes in markets, biological conditions and fishery management regulations can result in changes in the revenues and operating costs of firms participating in the fisheries as well as changes in fleet size and composition. Isolating the effects of a single factor is seldom possible. Nonetheless, this analysis has identified a number of key actions that

have contributed to the current economic status of the Non-AFA Trawl CP sector. The Non-AFA Trawl CP sector is generally considered synonymous with the head-gut-sector. Because the participation of these vessels in the Alaska groundfish fishery pre-dates the passage of the American Fisheries Act of 1998, both terms will be used in this discussion.

Catcher processors whose relatively small size limited their processing lines to heading and gutting were among the first U.S.-flagged fishing vessels to enter the groundfish fisheries of the North Pacific as these fisheries became “Americanized” after the passage of the Fishery Conservation and Management Act of 1976. These vessels initially focused on high-value groundfish such as sablefish and rockfish in the GOA and Aleutian Islands. The head-and-gut fleet also participated in the relatively high-volume flatfish and Pacific cod fisheries in the BSAI. Pollock were generally not targeted except at the peak of the roe season because of their comparatively low value as headed and gutted product.

The mid- to late-1980s saw increased restrictions on the domestic groundfish fishery, due primarily to problems with incidental catches of non-target species. In 1983, the BSAI Groundfish FMP established a prohibited species catch policy for domestic fisheries and defined prohibited species to include crab, halibut, herring, crab, and salmon. In 1987, the Council established bycatch limitation zones for prohibited species and established limits on the amounts of PSC that could be taken. The halibut PSC limit had the greatest impact on the head-and-gut sector, as it often resulted in the early closure of target fisheries. Only rarely were these vessels able to catch the entire TAC available to them.

In addition, a number of other fishery regulations enacted during mid-1980s and 1990s precluded the head-and-gut fleet from participating in some of the more profitable fisheries. These regulatory measures included a prohibition on the use of trawls in the directed sablefish fishery in 1986 and a ban on roe stripping in 1991. Inshore-offshore allocations established in 1992 reserved 80 percent of the Pacific cod in the GOA to inshore operations, which were defined, in part, as catcher processors less than 125 ft in length provided their total catch stayed within an 18 mt per day limit. These allocations and size limits prevented all but the smallest head-and-gut catcher processors from participating in the GOA Pacific cod fishery. Fishing opportunities for the head-and-gut sector in the GOA were further limited by the Groundfish and Crab License Limitation Program which closed the Eastern Gulf to trawling. While trawl catches in the Eastern Gulf were not large compared to non-trawl catches or to trawl catches in other areas, head-and-gut vessels were the primary participants in the trawl fishery for high value rockfish species.

A sequence of Steller sea lion protection measures that began in the 1990s limited the Atka mackerel, Pacific cod and rockfish harvests of the head-and-gut fleet. The measures closed some of the best fishing grounds for these target species, thereby adversely affecting the profitability of the head-and-gut catcher processors.

As result of these various regulatory measures and other restrictions, flatfish became the primary target species for the head-and-gut sector. Because these species are bottom-dwellers, flatfish fisheries are prone to high incidental catches of prohibited species such as halibut and crab. In addition, flatfish fisheries have limited markets—particularly with regard to size and product quality. These characteristics of the fisheries, in combination with the pollock maximum retainable amounts (MRA) and the “race for fish” regime under which the head-and-gut sector operated, led to a relatively high level of economic and regulatory discards by the head-and-gut sector.

In 1996, the US Congress reauthorized the Magnuson Fishery Conservation and Management Act (renaming it the Magnuson-Stevens Act) and included a mandate to reduce discards (bycatch) to the extent practicable. Following that mandate, the waste reduction initiatives of the Council resulted in implementation of IR/IU measures for pollock and Pacific cod in both the GOA and BSAI in 1998. IR/IU for flatfish was also approved by the Council and NOAA Fisheries at that time but was scheduled for implementation in 2003. The delay was meant to give the head-and-gut sector a change to develop gears and markets to meet the requirements of the regulations. The inability of head-and-gut vessels to make

fish meal out of the fish they catch made it more difficult for this sector to adjust to full retention than for the surimi and fillet trawl catcher processors (a number of practical obstacles, as well as Coast Guard and NOAA Fisheries regulations on vessel upgrades, effectively prevents these vessels from installing fish meal plants). However, a positive outcome of the IR/IU for pollock has been the development of a more consistent market for headed and gutted pollock in Asia—these fish are partially thawed and further processed before entering global markets. The increase in price of Pacific cod products due to reduced Atlantic cod harvests from the Barents Sea and an improving Asian economy has also resulted in higher gross product values for the head-and-gut sector. While headed and gutted fish harvested by Japanese and Korean vessels from Russian waters has increased competition in the marketplace, the expansion of buyers of head and gutted product in China, Europe and the U.S. has given the head-and-gut fleet the ability to switch markets as prices across markets change.

Retention and utilization of flatfish by the head-and-gut sector gradually improved, but by 2000 the head-and-gut fleet recognized that it would not have the markets and gears to remain viable participants after IR/IU was implemented in 2003. In October 2002, the Council voted to delay the 2003 implementation of IR/IU regulations for flatfish in the BSAI in order to pursue alternative means of reducing discards of flatfish and other groundfish. That action, Amendment 75 to the BSAI Groundfish FMP, would have delayed implementation of IR/IU for flatfish until June 1, 2004. Amendment 75 was only partially approved by the Secretary of Commerce. The approved part was the delay of imposing IR/IU requirements on catches of IR/IU flatfish in the BSAI. The part of Amendment 75 not approved was the date of June 1, 2004, on which this delay would have ended. The practical effect of partially approving Amendment 75 was that the proposed FMP text was modified by removing reference to rock sole and yellowfin sole as IR/IU species, thereby postponing indefinitely IR/IU for flatfish. GOA Groundfish FMP Amendment 72, approved by the Council in April 2003, outlines requirements and exemptions for full flatfish retention in the GOA, specifying an annual review process to ascertain whether sectors in the GOA are meeting the 5 percent maximum bycatch threshold to remain exempt from full flatfish retention requirements. Although it is not known at this time specifically how Amendment 72 might change fisheries or fisheries management, the intention is to reduce bycatch and discards of flatfish.

As part of Amendment 75, the Council also initiated analysis of several trailing amendments with the expectation that these amendments could augment or replace IR/IU for flatfish. BSAI Groundfish FMP Amendment 79, adopted by the Council in June 2003, phases in a progressively higher minimum groundfish retention standard (GRS) for Non-AFA Trawl CPs greater than 125 ft length overall. The action also changes the monitoring requirements for each vessel managed under the GRS, requiring flow scales, observer stations, and observations of every haul. NOAA Fisheries is expected to issue a proposed rule based on the Council recommendations in the summer of 2005. The final trailing amendment initiated by the Council is the proposed action, which would allocate selected BSAI species and PSC limits to the Non-AFA Trawl CP sector and allow the sector to form fishery cooperatives.

Along with Amendment 79, the Council also recommended that the regulations establishing pollock MRA be revised by adjusting the MRA enforcement period for pollock harvested in the BSAI from enforcement at anytime during a fishing trip to enforcement at the time of offload. This action is intended to reduce regulatory discards of pollock caught incidentally in the directed fisheries for non-pollock groundfish species without increasing the overall amount of pollock that has been historically caught as incidental catch in these fisheries. In particular, Non-AFA Trawl CPs incidentally catch significant amounts of pollock in other groundfish fisheries. (Other non-AFA vessels do not catch significant amounts of pollock and are therefore seldom affected by the MRA for pollock on a haul-by-haul basis.) Prior to the June Council actions, the proposed GRS program and pollock MRA revision were considered as components of one action to reduce discard amounts in the BSAI. However, the Council recognized that the MRA change was simpler to implement than the GRS action and requested NOAA Fisheries to expedite the pollock MRA revision. In June 2004, NOAA Fisheries issued a final rule implementing the pollock MRA revision.

Included in the Department of Commerce and Related Agencies Appropriations Act, 2005, were several statutory provisions for the BSAI non-pollock groundfish and the BSAI Catcher Processor Capacity Reduction Program. The Capacity Reduction Program not only authorizes \$75 million to reduce the capacity of the catcher processor fleets operating in the BSAI, but also defines eligibility to participate in the non-pollock groundfish fisheries<sup>61</sup> as a trawl catcher processor. Section 219(a)(7) defines the Non-AFA Trawl Catcher Processor subsector as the owner of each trawl catcher processor that is not an AFA trawl catcher processor, that holds a valid LLP license with Bering Sea and Aleutian Islands endorsements, and that the Secretary determines has harvested with trawl gear and processed not less than a total of 150 metric tons of non-pollock groundfish during the period January 1, 1997 through December 31, 2002. The program also provides \$31 million to the Non-AFA Trawl CP sector for capacity reduction of the fleet. After notice to the Council, the Non-AFA Trawl CP sector must submit to Secretary a capacity reduction plan that would remove excess harvest capacity from the non-pollock fishery. For participants that decide to remove their vessels from the fleet, all fishery permits and endorsements issued for that vessel will be extinguished including those in the GOA. Although the impacts of the capacity reduction aspect of this program on the Non-AFA Trawl CP sector is not known with any certainty at this time, some vessels in the sector maybe good candidates for the program. Some of the 27 vessels that are likely to qualify for the Non-AFA Trawl CP sector are reported by some members of the fleet as having a difficult time accommodating the added costs associated with the required enforcement and monitoring demands necessary for Amendment 79 and the proposed action. One unknown is the impact GOA LLP and catch history. If vessel owners are not compensated for their GOA LLP and catch history, it is unlikely many of the 27 vessels will be retired.

In February 2005, the Council took action to conserve essential fish habitat (EFH) from potential adverse effects of fishing. To minimize the effects of fishing on EFH, the Council's preferred alternative prohibits all bottom trawling in the AI except in small discrete 'open' areas. If approved by the Secretary of Commerce, regulations are expected to be in place by August 2006. According to the 2005 EFH EIS, the spatial relocation of fishing effort caused by the measures to minimize the effects of fishing on EFH is expected to result in reductions in harvest and gross revenue for certain sectors of the fishing industry, including the Non-AFA Trawl CP fleet, but the extent of the negative impact cannot be measured at this time. Vessels may be able, with additional effort, to make up foregone harvests from closed areas by changing location or gear strategies, but the costs associated with the extra effort are unknown.

In February 2005, the Council also took action to identify habitat areas of particular concern, which would allow for a more focused application of protection measures to the most sensitive areas of EFH. Six areas in the AI will be closed to all bottom contact fishing gear (longlines, pots, trawls, etc.) and bottom trawling for all groundfish species will be prohibited in ten designated areas along the continental shelf of the GOA. According to the 2005 EA/RIR/IRFA that evaluated alternatives to designate and conserve habitat areas of particular concern, these designations are unlikely to have the potential to significantly affect the revenues or costs of any groundfish harvesting sector, including the Non-AFA Trawl CPs.

#### **4.3.9.2 Reasonably Foreseeable Future Actions**

As discussed previously, a cumulative effects assessment should also identify reasonably foreseeable future events that are relevant to the proposed action, and should look at the incremental effect the proposed action might have if those reasonably foreseeable events occur. The focus must be on actions that are likely to occur or probable, rather than those that are merely possible. To identify actions within the purview of NOAA Fisheries and the Council that are sufficiently likely to occur (as opposed to "highly speculative" actions), this analysis examined authorized planning documents recently issued by

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<sup>61</sup> The Program defines the non-pollock groundfish fisheries as the Atka mackerel, flathead sole, Pacific cod, Pacific Ocean perch, rock sole, turbot, or yellowfin sole fisheries.

the Council. Five reasonably foreseeable management actions relevant to this analysis were identified—the allocation of BSAI Pacific cod, GOA groundfish rationalization, the Central GOA rockfish demonstration program, protection of EFH in the Bering Sea, and non-target species management. Another future action likely to be relevant when assessing the cumulative effects of the alternatives is a recent proposal by the Alaska Board of Fisheries to modify pollock closures for Steller sea lion protection in State waters.

The Groundfish PSEIS describes several factors external to the fishery management regime that have influenced the costs and revenues of harvesting sectors in the Alaska groundfish fishery and may continue to do so. These factors include foreign fishing, product prices, vessel fuel costs and market forces beyond the region that affect the costs of insurance, labor, and so forth. While these external factors could have significant economic impacts on the Non-AFA Trawl CP sector in the future, a discussion of what those effects might be would be speculative.

### ***Bering Sea/Aleutian Islands Pacific Cod Allocations***

In April 2006, the Council took final action on revising current sector allocations of BSAI Pacific cod among trawl, jig, and fixed gear sectors that were implemented in 1997 (BSAI Groundfish FMP Amendment 46 and Amendment 77). The Council approved the following percentages of the BSAI Pacific cod (non-CDQ) TAC to the following sectors:

<60' Hook-and-line/pot CV	2.0%
AFA trawl CP	2.3%
Trawl CV	22.1%
Jig CV	1.4%
Hook-and-line CP	48.7%
Hook-and-line CV $\geq$ 60'	0.2%
Non-AFA trawl CP	13.4%
Pot CP	1.5%
Pot CV $\geq$ 60'	8.4%

The basis for determining sector allocations for Pacific cod was historical dependence on and recent participation in the Pacific cod fishery by sector, as well as recognition of a continued need to provide entry level fishing opportunities in the jig and <60' fixed gear sectors. As reflected in the percentages above, the Council approved creating separate Pacific cod allocations for the non-AFA Trawl CP sector and the AFA Trawl CP sector. This was done to allow each sector to better manage its allocation of Pacific cod in conjunction with each sector's other directed fisheries.

This action also established a methodology to apportion the halibut and crab PSC associated with the trawl Pacific cod fishery group among the trawl CV, AFA trawl CP, and non-AFA trawl CP sectors. Similarly, it established a methodology to apportion the halibut PSC associated with the hook-and-line Pacific cod fishery group between the hook-and-line CP and hook-and-line CV sectors. The trawl halibut and crab PSC will be apportioned according to each trawl sector's new Pacific cod allocation and percentage of Pacific cod harvested in the Pacific cod target fishery during 1999-2003 period.

The Council elected not to apportion BSAI Pacific cod sector allocations between the BS and AI areas under Amendment 85 at this time. Rather, the Council removed the alternatives to apportion the BSAI Pacific cod sector allocations between the BS and the AI into a separate action that would examine additional alternative approaches.

### **Anticipated Effects**

Based on the actions of the Council in April 2006, the non-AFA trawl CP sector will receive 13.4% of the (non-CDQ) BSAI Pacific cod TAC. Although this allocation represents a lower percentage of retained catch by this sector than in the most recent years analyzed (1999 – 2003), the allocation is higher than

many of the earlier years that were under consideration by the Council (1995 – 1998). For the non-AFA trawl CP sector, the allocation of BSAI Pacific cod will likely result in a reduction in the amount of Pacific cod available for directed fishing since the portion reserved for incidental catch will likely remain at current levels. Under the cooperative program proposed under Amendment 80, the non-AFA trawl CP sector will choose how to manage a Pacific cod allocation to meet both its directed and incidental catch needs. This is a relevant decision for any species allocation that is constraining to the sector. Amendment 80, combined with the action on Amendment 85, would allow the non-AFA Trawl CP sector greater flexibility and control to better manage the Pacific cod allocation between the two user groups.

The Council also apportioned halibut and crab PSC allowances to the cod trawl fishery group among the AFA trawl CP, trawl CV, and the non-AFA trawl CP sectors. The PSC allowances are intended to provide PSC for each sector's Pacific cod fishery. Given that three of the PSC allocation options under consideration in this action include Pacific cod allocations in the calculations, PSC for the non-AFA trawl CP sector (and the trawl limited access fishery) could be adjusted under Amendment 80. In this case, the PSC apportionment methodology under Amendment 85 would only apply to the AFA trawl CP and trawl CV sectors. These two trawl sectors would be apportioned the halibut and crab PSC remaining after the non-AFA trawl CP allowances have been established.

#### ***Maximum Retainable Catch Adjustment (MRA)***

The Council is considering revising the MRA accounting interval for yellowfin sole, rock sole, flathead sole, "other flatfish," arrowtooth flounder, Atka mackerel, and Aleutian Islands Pacific Ocean perch for the Non-AFA Trawl CP sector. The accounting period under consideration by the Council include having the accounting interval occur at the end of a reporting week and occur at the time of an offload.

#### **Anticipated Effects**

The changes in the MRA accounting may result in the MRA being less of a limiting factor to the retention of incidental catch. The proposed action has the potential to reduce regulatory discards thus reducing the overall discard rate of the Non-AFA Trawl CP sector. In addition, the action will likely simplify MRA accounting.

#### ***Gulf of Alaska Groundfish Rationalization***

The Council is considering alternative management approaches to "rationalize" the GOA groundfish fisheries. Rationalization may improve the economic stability to the various participants in the fishery, which include harvesters, processors, and residents of fishing communities. The Council is considering these policies at the request of the GOA groundfish industry to address increasing concerns about the economic stability of the fisheries. Some of these concerns include changing market opportunities and stock abundance, increasing concern about the long-term economic health of fishing dependent communities, and the limited ability of the fishing industry to respond to environmental concerns under the existing management regime. The Council may consider rationalizing the fishery through individual fishing quotas or cooperatives, and allocations to communities.

#### **Anticipated Effects**

Although it is not known at this time specifically how the Council recommendations might change fisheries or fisheries management, the intention of the rationalization program is to provide economic and socioeconomic benefits to participants in GOA groundfish fisheries, including Non-AFA Trawl CPs. By reducing competition for shares of the total allowable catch, rationalization allows fishermen to select the least cost combination and deployment of fishing inputs. Furthermore, with smaller haul sizes, more careful processing, the ability to match fishing effort to processing capacity and the opportunity to search out fish of optimal size, fishermen are able to increase yields, improve product quality and optimize product mix to market conditions.

However, the actual allocation of harvest shares in GOA fisheries under rationalization may not necessarily be favorable to the Non-AFA Trawl CP sector as a whole. If the shares allocated to Non-AFA Trawl CPs are significantly less than historical levels, vessels in the sector may feel that they are economically worse off after rationalization.

### **Central Gulf of Alaska Rockfish Demonstration Program**

In 2004, the US Congress directed the Secretary of Commerce to establish, in consultation with the Council, a pilot program for management of three rockfish fisheries in the Central GOA. The program is designed as a short-term two-year program for immediate economic relief until comprehensive GOA rationalization can be implemented. Under the pilot program, target rockfish species would be annually allocated to a cooperative based on historical participation of eligible members of the cooperative.

#### **Anticipated Effects**

According to the Preliminary Review Draft EA/RIR/IRFA prepared by the NPFMC (2005), the catcher processor sector (which includes Non-AFA Trawl CPs) is likely to realize some gains in production efficiency under the pilot program alternatives, capturing greater rents from the fishery. Efficiency gains should occur as participants are able to slow the pace of fishing and processing. In the slower fishery, participants are likely to be able to reduce expenditures on inputs to some degree (possibly scaling down crews slightly) and increasing outputs slightly (with less loss due to diminished quality). Additional efficiencies should arise because of the cooperative structure of the alternative. In a cooperative, participants will be free to consolidate fishing up to the 60 percent vessel cap. Consolidating catch on fewer vessels in the fishery should also reduce harvest costs. Some cooperatives may also improve efficiency in other July fisheries, if they are able to reduce the number of vessels in the rockfish fishery or change the timing of rockfish harvests (away from the traditional early July fishery).

### **Measures to Minimize Fishing Effects on Bering Sea Essential Fish Habitat**

As noted in the discussion of past and present actions, the Council took action in February 2005 to conserve EFH in the AI and GOA from potential adverse effects of fishing. At that time, the Council also took action to initiate an expanded analysis of alternatives to minimize the effects of fishing on EFH in the Bering Sea, and conduct an assessment of gear modification that tiers off of the EFH FEIS. The analysis will include the existing alternative in the EFH FEIS, an alternative to leave the rolling closure area open, and options to the closed areas south of Nunivak Island and north of the Bogoslof Area, as well as other alternatives to be developed.

#### **Anticipated Effects**

Measures to minimize the effects of fishing in the Bering Sea could have a negative economic effect on certain harvesting sectors in the Alaska groundfish fishery, including the Non-AFA Trawl CP sector, by reducing the harvest of target species and/or increasing operating costs. Because specific measures have not yet been identified and their effects evaluated, the economic impacts are uncertain.

### **Non-target Species Management**

The Council is considering amendments to the BSAI and GOA FMPs to identify and manage stock assemblages for single species and species assemblages that are incidentally-caught. The intent is to protect non-target species from the negative fishing effects of target fisheries. OFL, ABC, and TAC would be set for each assemblage. Management options also include prohibiting directed fishing and maximum retainable allowances.

#### **Anticipated Effects**

Measures to protect non-target species could have a negative economic effect on certain harvesting sectors in the Alaska groundfish fishery, including the Non-AFA Trawl CP sector, by reducing the harvest of target species and/or increasing operating costs. Because specific measures have not yet been identified and their effects evaluated, the economic impacts are uncertain.

### ***Aleutian Islands Pollock Fishery in State Waters***

In November 2002, the Alaska Board of Fisheries (Board) adopted the same Steller sea lion protection measures for the State parallel groundfish fisheries in the AI as were established for Federal fisheries. However, in March 2005, the Alaska Board of Fisheries considered a proposal to revise pollock closures for Steller sea lion protection in State waters of the Aleutian Islands from 170° to 180° W. longitude, in State waters of the Western Gulf of Alaska from 157° to 163° W. longitude, and in the Cook Inlet Management Area between 149° and 150° W. longitude to allow harvesting of pollock. In effect, the State would not actively manage pollock harvests in State waters; rather, ADF&G would treat these fisheries similar to other parallel fisheries through the annually issued global emergency order; thus, the Federal government would manage harvests against Federally-established TACs and allocations, open and close seasons, establish gear restrictions, etc.

The Board deferred final action on the proposal to the October 2005 meeting, and referred the amended proposal to an Interim Joint Board/Council Protocol Committee for discussion and coordination. The Interim Joint Protocol Committee met between May and August, 2005, to discuss state water pollock proposals and the re-consultation process under the Endangered Species Act, and to exchange information among NMFS, ADF&G, NPFMC, and the Board.

At the October 2005 meeting, the board voted down the proposal pertaining to the Western Gulf area. The board postponed taking final action on the remaining two proposals (Aleutian Islands/Adak Area and Central Gulf area) to October 2006.

### ***Aleutian Islands Pacific cod Fishery in State Waters***

At its December 2005 meeting, the Board generated a proposal to create a new regulation establishing an State waters Pacific cod fishery in the Aleutian Islands west of 170° W longitude. Currently, the Pacific cod fishery in State waters is managed as a parallel fishery to the Federal fishery; the Federal government manages all harvests (inside or outside State waters) against the Federal BSAI Pacific cod TAC and allocations, opens and closes seasons, establishes gear restrictions, etc. The Board's proposal would allow the Commissioner of ADF&G to open a State waters Pacific cod fishery on March 15 of each year, in the area described above. The State water fishery would close upon meeting the guideline harvest level (GHL) or by December 31, whichever occurs first. Under the proposal, the GHL would be 3 percent of the BSAI Pacific cod TAC, and harvest of the GHL would be limited to groundfish pots, jigs, and handtroll gear, with exceptions from May 1 to September 15, in which non-pelagic trawl and hook and line gear may be used in the areas in which they are allowed.

The Board initially scheduled consideration of this proposal for its January 2006 meeting, but since rescheduled consideration during its February 20 – 26, 2006 meeting at the request of the Council. In December 2005, the Council requested that the Board delay consideration until such time that the Council and the Board can meet jointly to discuss the issue. A joint meeting in early February in Anchorage is anticipated.

#### **Anticipated Effects**

An alteration of the pollock closures in State waters to allow harvesting of pollock may trigger the need to conduct a formal re-consultation under section 7 of the Endangered Species Act. The outcome of a consultation is uncertain, but a “jeopardy opinion” could result in additional fishing restrictions on certain harvesting sectors in the Alaska groundfish fishery, including Non-AFA Trawl CPs.

#### **4.3.9.3 Summary of Cumulative Effects**

The analysis of past actions affecting the Non-AFA Trawl CP sector showed that, since the mid-1980s, adjustments in the regulatory regime have changed the economic conditions of the groundfish fisheries in which these vessels participate. An increasingly restrictive regulatory environment and escalating compliance costs resulted in economical stress for some Non-AFA Trawl CP owners. The increased

restrictions were also a primary reason that flatfish became the primary target species for the Non-AFA Trawl CP sector. Because these species are bottom-dwellers, flatfish fisheries are prone to high incidental catches of prohibited species such as halibut and crab. In addition, flatfish fisheries have limited markets—particularly with regard to size and product quality. These characteristics of the flatfish fisheries, in combination with a “race for fish” regime and other factors, led to a relatively high level of economic and regulatory discards in the Non-AFA Trawl CP sector.

In recent years, the Non-AFA Trawl CP fleet has faced increasing pressure to reduce its discard rate. In 2003, the Council established a minimum groundfish retention standard for Non-AFA Trawl CPs greater than 125 ft length overall. The GRS will result in a substantial reduction in the bycatch of the affected vessels. However, a GRS may also result in substantial costs and lost revenues for these vessels as a result of holding/processing, transporting and transferring fish that are of relatively low value or “unmarketable.” In addition, the GRS measure imposes significant costs on the vessels with increased observer and scale costs.

With the possible exception of the rationalization programs, the reasonably foreseeable future actions cited above may have negative effects (to some degree) on the economic performance of Non-AFA Trawl CP sector. The cumulative effects of all actions—past, present, and future—are toward an increasingly restrictive regulatory environment resulting in lower harvests and gross revenues and/or higher operating costs.

#### **4.3.9.4 Contributions to Cumulative Effects Related to the Proposed Action**

The conclusions reached in the direct and indirect effects analysis of the cooperative alternatives indicate that the compliance costs incurred under a GRS may be mitigated by the benefits of participating in a cooperative. The costs of the GRS associated with retaining unwanted fish may be reduced or avoided altogether under a cooperative structure, as vessels can be more selective in what they catch without losing any competitive advantage. In addition, a cooperative structure may allow the sector to manage its PSC allocation in a manner that prevents PSC limits from being exceeded and thereby avoids the lower harvests and revenues associated with fishery closures when PSC limits are reached.

In principle, an allocation of BSAI Pacific cod to the Non-AFA Trawl CP sector would transform the sideboards for Pacific cod proposed under the cooperative alternatives to an actual allocation. Sideboards would impose a cap on the percent of the Pacific cod TAC the sector can harvest, while an allocation would provide a guaranteed harvest amount. The greater certainty under a sector-based BSAI Pacific Cod allocation may facilitate the negotiations necessary for formation of cooperatives.

The proposed split of the Pacific cod TAC is also likely to have an effect on cooperative negotiations. Some vessels in the Non-AFA Trawl CP sector are not eligible to fish in the Aleutian Islands subarea of the BSAI Groundfish FMP because they do not hold AI endorsements. If some portion of the Pacific cod TAC is required to be taken in the AI, ineligible vessels will experience a decrease in their bargaining power relative to vessels that are eligible to fish in the AI.

GOA rationalization is likely to enhance the overall cooperative negotiation process by providing vessel owners greater flexibility to allocate resources. For example, Non-AFA Trawl CPs that receive a small catch allocation under rationalization will be able to trade that share to vessels less dependent on Bering Sea fisheries. In other words, GOA rationalization may allow vessel owners to bring more bargaining chips to the negotiating table and thereby expand the likelihood that negotiations will yield gains for everyone. However, those owners with no interest in GOA fisheries will probably see their individual bargaining power in cooperative negotiations decline relative to those that do have fishing interests in the Gulf.

The effects of the Central GOA rockfish demonstration program on the cooperative negotiation process are expected to be similar to those under Gulf rationalization. It is also likely that the formation of fishing cooperatives will reduce the negative effects of the sideboards imposed under the demonstration program.

## 5 REGULATORY FLEXIBILITY ACT ANALYSES

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

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis (FRFA). Analysis requirements for the IRFA are described below in more detail. In the case of the issues and alternatives considered in this analysis, the Council will make recommendations for the preferred alternative, and, if approved by the Secretary, NOAA Fisheries will develop proposed regulatory amendments to implement the Council's preferred alternative.

The preceding analysis addresses the issues required under the RFA. Most, if not all, of the affected entities would be considered small entities under the RFA (Section 601(3)). To ensure a broad consideration of impacts and alternatives, an IRFA has been prepared pursuant to 5 USC 603, without first making the threshold determination of whether or not this proposed action would have a significant economic impact on small entities. A definitive assessment of the impacts on small entities, however, is dependent on the specific alternatives and options selected by the Council and thus cannot be conducted until after final action.

The IRFA must contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Fishery Conservation and Management Act and any other 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 determining the scope, or ‘universe’, of the entities to be considered in an IRFA, only those entities, both large and small, that are directly regulated by the proposed action are included. 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. The intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

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

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

The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesting entities, for-hire entities, fish processing businesses, and fish dealers. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$4 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. Finally, a wholesale business servicing the fishing industry (fish dealer) is a small businesses if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

Companies that own catcher processors act as both fish harvesters and seafood processors. NOAA Fisheries has indicated that these companies should be classified as small or large entities based on the harvester definition. However, this definition is currently being disputed, and NOAA Fisheries is currently reviewing their catcher processor definition. Some members of the fishing industry argue that they should be classified based on the processor definition. Catcher processor owners have stated that they must meet specific requirements that apply to processors that result in additional costs to their businesses. Changing the definition would reclassify many catcher processor companies from large to small entities. They would then benefit from Small Business Administration programs available to companies classified as small entities. However, until NOAA Fisheries completes their review of this issue and provides additional guidance, catcher processors will continue to be classified as small or large entities based on the current harvester definition.

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

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

## 5.2 Reason for considering the proposed action

The Council’s problem statement is presented in section 1.1 of this document. It provides the Council’s rationale for proposing the alternatives being considered. A primary reason cited by the Council for considering the proposed actions is to allow members of the Non-AFA Trawl CP sector to implement a cooperative based management system that will provide a structure for them to meet the requirements of IR/IU without facing unnecessary hardships. Cooperative formation typically requires NMFS to allocate specific amounts of the TAC to a group of vessels or permit holders that may participate in the cooperative. Members of the cooperative then determine how much of the allocation each participant may harvest. This amendment is designed to allocate portions of the BSAI TAC of five species to the Non-AFA Trawl CP sector. Members of that sector have traditionally been the predominant harvesters of those species.

Various formulas were considered by the Council for allocating the five species among the Non-AFA Trawl CP sector and the remaining sectors. Those formulas are discussed in Sections 3.2.3 and 3.2.4. Allocations within the sector are also addressed. Sections 3.2.9 and 3.2.10 describe how the TAC that is allocated to the sector would be divided among the qualified vessels. Species that are not allocated to the Non-AFA Trawl CP sector would be managed under harvest caps set for the cooperative(s) and vessels that elect to not participate in the cooperative(s). Alternatives for implementing harvest caps, for species that are not directly allocated to the sector, are described in Section 3.2.

Limitations on the Non-AFA Trawl CP sector’s harvest of species not allocated to them are described in Section 3.2.12. These “sideboard” limits are designed to constrain the Non-AFA Trawl CP sector’s harvests to historical levels<sup>62</sup>. If the sideboards function properly, they should maintain the historic balance between the various GOA and BSAI fleets and the Non-AFA Trawl CP sector fleets. Without sideboards, it is possible that members of the Non-AFA Trawl CP sector could disrupt the fishing patterns of other companies that harvest fish from the BSAI or GOA. Many of these companies would be small entities, as shown in Table 5-2

The reason a cooperative based program is being considered is to provide the opportunity for cooperative members to focus on reducing their bycatch rather than competing to harvest more fish. This is considered an important step towards helping the Non-AFA Trawl CP sector meet the IRIU flatfish retention requirements. Under the cooperative program, each member of the cooperative would be assigned the privilege of harvesting a specific amount of each of the five species allocated to the Non-AFA Trawl CP sector. Knowing the amount of each species they can harvest enables harvesters to determine the most efficient harvesting strategy while reducing discards. These strategies may include fishing areas/times with lower incidental catch rates, taking the time to retain more of the fish that are caught, and removing less efficient vessels from the fleet.

Another potential action included in this amendment would increase the allocation of specified BSAI species to the CDQ program from the current 7.5 percent of the TAC. This action is proposed to help residents of remote communities, located close to the BSAI fishing grounds, to continue developing strong local economies in areas that have historically had very limited economic opportunities. Increased

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<sup>62</sup> Sideboard constraints are being considered because cooperatives will allow the Non-AFA Trawl CP fleet to change their fishing operations to take advantages fishing at different times of the year or consolidating the harvest of the directly allocated species on fewer vessels. The “extra” vessels would then be available to increase effort in other fisheries.

allocations to the CDQ program will reduce the amount of fish that is available to other small (and large) entities that fish in the BSAI.

### 5.3 Objectives of, and legal basis for, the proposed action

The objectives of the program are to allow members of the Non-AFA Trawl CP sector to be able to meet the new IR/IU requirements without facing undo hardships and to continue aiding residents of specific remote communities in developing their economies.

The legal basis for these actions is that regulation of the EEZ Bering Sea/Aleutian Islands and Gulf of Alaska groundfish fisheries are allowed under the Magnuson-Stevens Fishery Conservation and Management Act. In the Alaska region, the North Pacific Fishery Management Council is responsible for preparing management plans for marine fishery resources requiring conservation and management. NOAA Fisheries, an agency within the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce, is charged with carrying out the federal mandates with regard to marine fish, once they are approved by the Secretary. NOAA Fisheries Alaska Regional Office and Alaska Fisheries Science Center review the management actions recommended by the Council.

### 5.4 Number and description of affected small entities

For purposes of the IRFA all individuals, companies, and corporations that participate in the BSAI and GOA groundfish fisheries that may be harvested with trawl gear are considered directly regulated. The CDQ groups and communities they represent are also considered directly regulated by this action. All participants in the GOA and BSAI are directly regulated because of the impacts of sideboard limits in the GOA and BSAI and the BSAI CDQ allocations.

Harvesters: Table 5-1 reports the number of vessels that generated more than \$3.5 million<sup>63</sup> in ex-vessel groundfish revenue annually for the years 1998 through 2003; Table 5-2 reports the same information for vessels that generated less than \$3.5 million. The information in those tables shows that in 2003 a total of 966 vessels generated less than \$3.5 million in ex-vessel revenue and 71 generated more than \$3.5 million. In percentage terms, more than 93 percent of the vessel that fish for groundfish would be considered small entities. However, because the threshold is based on company earnings from all fisheries and not each individual vessel's groundfish harvest, these tables like over estimate the number of small entities. The lack of ownership data precludes the calculation of exact numbers of small and large entities at the company level.

**Table 5-1 Number of vessels that caught or caught and processed more than \$3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003.**

	Gulf of Alaska		Bering Sea and Aleutian Islands			All Alaska		
	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
1998								
All gear	26	26	0	58	58	0	58	58
Hook and line	7	7	0	14	14	0	14	14
Pot	0	0	0	1	1	0	1	1
Trawl	19	19	0	44	44	0	44	44

<sup>63</sup> The reader should that as of January 5, 2006 the SBA definition of a small finfish harvesting entity is \$4.0 million instead of the \$3.5 million reported in these tables. Because of the recent change companies that are between \$3.5 million and \$4 million in revenue would be classified as small entities instead of large entities. Those changes could result in the tables underestimating the number of potential small entities.

	Gulf of Alaska		Bering Sea and Aleutian Islands			All Alaska		
	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
1999								
All gear	29	29	1	57	58	1	57	58
Hook and line	13	13	0	22	22	0	22	22
Pot	1	1	0	3	3	0	3	3
Trawl	15	15	1	36	37	1	36	37
2000								
All gear	28	28	4	58	62	4	58	62
Hook and line	13	13	0	26	26	0	26	26
Pot	0	0	0	2	2	0	2	2
Trawl	15	15	4	34	38	4	34	38
2001								
All gear	19	19	6	47	53	6	47	53
Hook and line	5	5	0	14	14	0	14	14
Trawl	14	14	6	33	39	6	33	39
2002								
All gear	23	23	10	54	64	10	54	64
Hook and line	10	10	0	18	18	0	18	18
Trawl	13	13	10	36	46	10	36	46
2003								
All gear	34	34	6	65	71	6	65	71
Hook and line	16	16	0	28	28	0	28	28
Pot	0	0	5	0	5	5	0	5
Trawl	18	18	6	37	43	6	37	43

Note: Includes only vessels that fished part of federal TACs.

Source: Table 26.1 of the 2004 Economic SAFE, NMFS Alaska Fisheries Science Center, Seattle, WA.

Data: CFEC fish tickets, weekly processor reports, NMFS permits, Commercial Operator's Annual Report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

**Table 5-2. Number of vessels that caught or caught and processed less than \$3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003.**

	Gulf of Alaska			Bering Sea and Aleutian Islands			All Alaska		
	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
1998									
All gear	973	21	994	243	41	284	1,052	41	1,093
Hook and line	708	15	723	75	29	104	726	29	755
Pot	188	1	189	70	7	77	231	7	238
Trawl	170	5	175	115	7	122	207	7	214
1999									
All gear	980	29	1,009	271	31	302	1,087	34	1,121
Hook and line	699	17	716	67	19	86	720	22	742
Pot	231	10	241	88	11	99	281	11	292
Trawl	159	3	162	123	4	127	203	4	207
2000									
All gear	987	16	1,003	269	30	299	1,134	32	1,166
Hook and line	716	8	724	79	17	96	746	18	764
Pot	252	5	257	88	10	98	302	11	313
Trawl	125	3	128	108	5	113	199	6	205
2001									
All gear	852	21	873	279	43	322	1,012	44	1,056
Hook and line	650	15	665	92	31	123	681	31	712
Pot	154	4	158	74	7	81	212	9	221
Trawl	119	4	123	117	6	123	195	7	202

	Gulf of Alaska			Bering Sea and Aleutian Islands			All Alaska		
	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
2002									
All gear	781	20	801	247	32	279	909	33	942
Hook and line	619	13	632	78	24	102	633	24	657
Pot	127	4	131	59	5	64	169	6	175
Trawl	107	3	110	114	3	117	182	3	185
2003									
All gear	803	13	816	262	18	280	945	21	966
Hook and line	655	9	664	73	12	85	678	14	692
Pot	137	1	138	83	3	86	197	3	200
Trawl	93	3	96	116	3	119	163	4	167

Note: Includes only vessels that fished part of federal TACs.

Source: Table 26.2 of the 2004 Economic SAFE, NMFS Alaska Fisheries Science Center, Seattle, WA.

Data Source: CFEC fish tickets, weekly processor reports, NMFS permits, Commercial Operator's Annual Report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

Table 5-3 and Table 5-4 report the average ex-vessel groundfish revenue of the vessels that generated more and less than \$3.5 million, respectively. The trawl vessels in the large entity category generated an average of about \$15 million in 2003. This number is inflated by the large catcher processors in the pollock fishery. The Non-AFA Trawl CP vessels traditionally generate less revenue than the pollock CPs. Even though they generate less revenue, all but one of the 27 vessels in the Non-AFA Trawl CP sector are also considered to be large entities based on the \$4 million threshold applied to all vessels owned by an entity.

**Table 5-3 Average revenue of vessels that caught or caught and processed more than \$3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003. (\$ millions)**

	Gulf of Alaska		Bering Sea and Aleutian Islands			All Alaska		
	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
1998								
All gear	6.41	6.41		8.64	8.64		8.64	8.64
Hook and line	4.46	4.46		4.51	4.51		4.51	4.51
Trawl	7.12	7.12		9.95	9.95		9.95	9.95
1999								
All gear	5.53	5.53		10.09	10.00		10.09	10.00
Hook and line	4.69	4.69		4.70	4.70		4.70	4.70
Trawl	6.36	6.36		13.23	13.00		13.23	13.00
2000								
All gear	6.57	6.57	4.66	10.72	10.33	4.66	10.72	10.33
Hook and line	4.82	4.82		5.09	5.09		5.09	5.09
Trawl	8.09	8.09	4.66	14.87	13.80	4.66	14.87	13.80
2001								
All gear	7.54	7.54	4.99	13.02	12.11	4.99	13.02	12.11
Hook and line	4.97	4.97		4.66	4.66		4.66	4.66
Trawl	8.45	8.45	4.99	16.57	14.78	4.99	16.57	14.78
2002								
All gear	6.96	6.96	4.91	12.76	11.54	4.91	12.76	11.54
Hook and line	4.28	4.28		4.25	4.25		4.25	4.25
Trawl	9.03	9.03	4.91	17.02	14.39	4.91	17.02	14.39
2003								
All gear	6.47	6.47	4.43	11.02	11.01	4.43	11.62	11.01
Hook and line	4.50	4.50		4.54	4.54		4.54	4.54
Pot			4.62		4.62	4.62		4.62
Trawl	8.21	8.21	4.43	16.98	15.23	4.43	16.98	15.23

Notes: Includes only vessels that fished part of federal TACs. Categories with fewer than four vessels are not reported. Averages are obtained by adding the total revenues, across all areas and gear types, of all the vessels in the category, and dividing that sum by the number of vessels in the category. Source: Table 26.3 of the 2004 Economic SAFE, NMFS Alaska Fisheries Science Center,

Seattle, WA. Data Source: CFEC fish tickets, weekly processor reports, NMFS permits, commercial operator's annual report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

**Table 5-4 Average revenue of vessels that caught or caught and processed less than \$3.5 million ex-vessel value or product value of groundfish by area, vessel type and gear, 1998-2003. (\$ millions)**

	Gulf of Alaska			Bering Sea and Aleutian Islands			All Alaska		
	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total	Catcher Vessels	Catcher Processors	Total
1998									
All gear	.15	1.77	.18	.44	1.63	.61	.16	1.63	.22
Hook and line	.08	1.59	.11	.18	1.57	.57	.08	1.57	.13
Pot	.11		.12	.24	.84	.29	.15	.84	.17
Trawl	.52	2.40	.57	.77	2.58	.88	.54	2.58	.61
1999									
All gear	.20	1.44	.23	.58	1.51	.68	.21	1.38	.25
Hook and line	.09	1.48	.12	.18	1.79	.53	.09	1.55	.13
Pot	.17	1.23	.21	.16	1.16	.27	.16	1.16	.20
Trawl	.77		.79	1.10	1.59	1.12	.79	1.59	.80
2000									
All gear	.16	1.33	.18	.67	1.34	.74	.24	1.34	.27
Hook and line	.11	1.24	.12	.23	1.60	.47	.10	1.53	.14
Pot	.16	1.03	.18	.16	.48	.19	.17	.62	.18
Trawl	.57		.61	1.40	1.72	1.41	.92	1.83	.95
2001									
All gear	.14	1.76	.18	.58	1.76	.74	.23	1.77	.30
Hook and line	.10	1.82	.14	.17	1.91	.61	.09	1.91	.17
Pot	.12	1.73	.16	.13	.86	.19	.12	1.17	.16
Trawl	.48	1.80	.52	1.18	1.93	1.22	.83	1.95	.87
2002									
All gear	.15	1.70	.18	.65	1.81	.78	.24	1.76	.30
Hook and line	.10	1.89	.14	.19	1.96	.61	.10	1.96	.17
Pot	.15	.38	.16	.18	.62	.22	.14	.52	.15
Trawl	.45		.51	1.18		1.22	.83		.86
2003									
All gear	.17	1.53	.19	.65	1.74	.72	.26	1.65	.29
Hook and line	.12	1.55	.14	.23	2.17	.50	.12	1.91	.15
Pot	.16		.16	.28		.30	.19		.20
Trawl	.57		.61	1.19		1.19	.93	1.45	.95

Notes: Includes only vessels that fished part of federal TACs. Categories with fewer than four vessels are not reported. Averages are obtained by adding the total revenues, across all areas and gear types, of all the vessels in the category, and dividing that sum by the number of vessels in the category.

Source: Table 26.4 of the 2004 Economic SAFE, NMFS Alaska Fisheries Science Center, Seattle, WA.

Data Source: CFEC fish tickets, weekly processor reports, NMFS permits, commercial operator's annual report (COAR), ADFG intent-to-operate listings. National Marine Fisheries Service, P.O. Box 15700, Seattle, WA 98115-0070.

The catalyst for this action was to provide a structure that would allow the Non-AFA Trawl CPs to form cooperatives. The Non-AFA Trawl CP sector vessels are the primary participants in the BSAI yellowfin sole, BSAI Atka mackerel, BSAI rock sole, BSAI flathead sole, and AI Pacific ocean perch fisheries. From 2000-2003 they retained 99.8 percent of total the Atka mackerel that was retained, 98.1 percent of the flathead sole, 98.8 percent of the Pacific ocean perch, 96.9 percent of the rock sole, and 92.8 percent of the yellowfin sole. The other catcher processors harvesting these species are members of the AFA Catcher Processor sector. They are limited to harvesting 23 percent of the yellowfin sole ITAC under the AFA. During the 2004 fishing year 3 AFA CPs owned by two companies participated in the directed fishery for yellowfin sole (PCC, 2004). They did not participate in a directed fishery for any other species covered in this action. In November 2004, Congress passed the FY 2005 Appropriations Act, which contained a BSAI Catcher Processor Capacity Reduction Program. That program precludes any catcher processors, other than the 26 Non-AFA Trawl CPs and the AFA Trawl CPs, from directed fishing for

BSAI yellowfin sole, BSAI Atka mackerel, BSAI rock sole, BSAI flathead sole, or AI Pacific ocean perch. Trawl catcher vessels rarely target these species. The AFA Trawl CVs may harvest up to 6.47 percent of the yellowfin sole ITAC (including yellowfin sole incidental catch in other fisheries), 3.41 percent of the rock sole ITAC, 5.05 percent of the flathead sole ITAC, less than 1 percent of the Atka mackerel ITACs, and less than 1 percent of the AI Pacific ocean perch ITACs. Given these small harvest limits it is unlikely they can participate in these directed fisheries, with the possible exception of yellowfin sole. Other catch vessels have traditionally not harvested these species in the BSAI. Harvesting vessels with annual receipts of less than \$4 million, are considered small entities directly regulated by this proposed action.

Based on the projections provided in Section 3.1.2.3 and 3.1.2.4, it appears that a total of 27 Non-AFA Trawl CPs would qualify to join a cooperative(s) as a result of this amendment. Catcher processor vessels both harvest and process the fish they catch. These companies then sell their product into the first wholesale market. The owners of all but one of the 27 vessels had annual receipts that averaged over \$4 million in first wholesale revenue from 1995-2002<sup>64</sup>. According to current NMFS direction, 26 vessels in the Non-AFA Trawl CP sector members are associated with entities over the \$4 million threshold and should be classified as large entities. Two AFA Trawl CP companies harvested yellowfin sole in 2004. Both of those companies are considered large entities.

#### Shorebased Processors:

A total of 36 processors in the BSAI and GOA have less than 500 employees. These processors, on average, generated about \$0.9 million in revenue from groundfish and had total revenues from all seafood processing of about \$5.2 million. The processors with over 500 employees averaged \$43.5 million in groundfish revenues and \$79.1 from all fish products (NMFS, 2002)

#### CDQ Groups and Communities:

Two alternatives addressed in this analysis could increase the groundfish and PSQ allocations to the six CDQ groups. Those groups represent 65 western Alaska communities that are eligible for the CDQ program. The CDQ groups and their associated communities are listed below.

1. Aleutian Pribilof Island Community Development Association (APICDA): The communities that are part of the APICDA are Akutan, Atka, False Pass, and Nelson Lagoon.
2. Bristol Bay Economic Development Corporation (BBEDC): The communities that are part of the BBEDC are Aleknagik, Clark's Point, Dililngham, Egegik, Ekuk, Ekwook, King Salmon, Levelock, Manokotak, Naknek, Pilot Point, Port Heiden, Portage Creek, South Naknek, Togiak, Twin Hills, and Ugashik.
3. Central Bering Sea Fisherman's Association (CBSFA): Saint Paul is the only community in the CBSFA.
4. Coastal Villages Region Fund (CVRF): The communities that are part of the CVRF are Chefornak, Chevak, Eek, Goodnews Bay, Hooper Bay, Kipnuk, Kongiganak, Kwigillingok, Mekoryuk, Napakiak, Napaskiak, Newtok, Nightmute, Oscarville, Platinum, Quinhagak, Scammon Bay, Tooksook Bay, Tuntutuliak, and Tununak.
5. Norton Sound Economic Development Corporation (NSEDC): The communities that are part of the NSEDC are Brevig Mission, Diomedes/Ignalik, Elim, Gambell, Golovin, Koyuk, Nome, Savoonga, Shaktoolik, Saint Michael, Stebbins, Teller, Unakleet, Wales, and White Mountain.
6. Yukon Delta Fisheries Development Association (YDFSA): The communities that are part of the NSEDC are Alakanuk, Emmonak, Grayling, Kotlik, Mountain Village, and Nunam Iqua.

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<sup>64</sup> 2002 is the most recent year of 1<sup>st</sup> wholesale data that was available to the analysts, so 2003 and 2004 data are excluded from these estimates. First wholesale price data, by product form, was generated by Terry Hiatt at the NMFS Alaska Fisheries Science Center. Those prices were then multiplied by the species and product forms in the NMFS Weekly Production Report data, by Elaine Denniford on the NPFMC staff, to generate these revenue estimates.

All of the CDQ groups and their associated communities are considered small entities according to RFA guidelines.

## 5.5 Recordkeeping and reporting requirements

This action is not projected to have an adverse impact on the reporting requirements of small entities participating in the BSAI and GOA groundfish fisheries. CDQ groups will continue to be required to report information to the Federal and State governments (see Section 3.2.2.6). The change in allocations may slightly increase reporting costs, but the costs are expected to be less than the benefits derived from selling or harvesting the allocation.

Implementing this program would require the cooperatives that are formed to supply annual reports on their activities (see Section 3.2.14). The annual reports will require cooperative members (all large entities) to increase the amount of time spent fulfilling their reporting requirements. The first year of the program is expected to require the most time. After a good working template is developed for the annual report, members will only need to update the information. Updating the reports is anticipated to be less time consuming than creating the first reports. Reporting requirements will apply to any company that is a member of the cooperative, and it is the responsibility of the collective cooperative membership to ensure that the reports are submitted in a timely and accurate fashion.

Additional record keeping requirements may be needed by individual firms. If firms do not currently record information that is requested in the annual report, those firms will need to add that information their records. Those firms that already record the data will not have additional requirements. It is not possible to determine which firms will be most impacted by the requirements, since the information each firm collects is based on what they need to operate their business and the current reporting requirements. Any additional reporting requirements will apply to both small and large entities that join a cooperative. Each firm will know the reporting requirements that they are expected to meet if they join a cooperative. Any firm joining a cooperative will know these requirements and it is assumed that the benefits from cooperative membership outweigh the costs imposed by the new recordkeeping and reporting requirements.

The regulations proposed in this amendment are not expected to impact the recordkeeping and reporting requirements for any other entities in the fishery. They must continue reporting information that is currently required.

## 5.6 Relevant Federal rules that may duplicate, overlap, or conflict with proposed action

The management measures being proposed do not appear to duplicate, overlap, or conflict with any other relevant Federal rules.

## 5.7 Description of significant alternatives

### Alternative 1 (No action/Status quo):

Alternative 1 would not change the current management structure in the BSAI. CDQ groups and CDQ communities would receive their current allocation of the BSAI TAC. Other small entities impacted by this action would continue to compete for their portion of groundfish, crab, halibut, and PSQ species. No impacts on small entities are anticipated.

The Non-AFA Trawl CP sector would continue to operate in the open access fishery. The new IR/IU requirements, when implemented, would need to be met without the aid of a cooperative harvesting structure. AFA Catcher Processors and catcher vessels could continue to harvest up to their sideboard limits of these species.

### Alternatives 2, 3, and 4 (Establish Cooperatives for Non-AFA Trawl CP Sector):

Alternatives 2, 3, and 4 would result in the Non-AF Trawl CP sector being allocated specific percentages of the BSAI TACs for yellowfin sole, rock sole, AI Atka mackerel, flathead sole, and AI POP (see Sections 3.1.2.3 and 3.1.2.4). The Non-AFA Trawl CP sector would also be allocated specific amounts of PSC species (see Section 3.2.1.9). These companies would then be able to rationalize their harvest strategies to better meet the IR/IU flatfish retention requirements. Eleven of the 12 entities<sup>65</sup> (corporations, partnerships, etc.) that are assumed to be potential cooperative members would be considered large entities under RFA guidelines. Depending on the alternative selected the AFA Trawl CP sector could be limited beyond their current sideboards. The two companies harvesting yellowfin sole in 2004 could be negatively impacted. They are considered large entities.

The sideboard limits proposed for the Non-AFA Trawl CP fleet will impact the amount of each species, outside of the five they are directly allocated, they are allowed to harvest. Restrictive sideboard limits will tend to protect small and large harvesting and processing entities in the GOA and BSAI that are outside of the Non-AFA Trawl CP sector. That protection will come at the expense of the large entities in the Non-AFA Trawl CP sector. The sideboard limits are discussed in detail in Section 3.2.12.

CDQ allocations for specific BSAI groundfish species could be increased from 7.5 percent to either 10 or 15 percent. The PSQ allocations could also be increased by similar percentages (see Section 3.2). Section 3.2.2.4 provides information on royalties under the 10 or 15 percent increase. The royalty increases under the 10 and 15 percent options would increase the overall royalties received by the CDQ groups. Given that over \$53.4 million in CDQ royalties were generated in 2003, the overall royalty increase is expected to be relatively small. The increase in royalties that accrue to the CDQ groups would come at the expense of the open access fleet. About 170 of the fixed gear participants in these BSAI fisheries are considered to be small entities and several participants (an unknown number that is less than 107) using trawl gear are also considered small entities.

## 5.8 Measures taken to reduce impacts on small entities

The Council is considering placing harvest restrictions on the Non-AFA Trawl CP sector for species they are not directly allocated. A discussion of this issue can be found in Section 3.2.1.12 of this document. The harvest restrictions could apply to the BSAI groundfish species that are not directly allocated to the sector and GOA groundfish. Harvest restrictions (often referred to as sideboards) are implemented to ensure that members of the cooperative(s) cannot take advantage of their more flexible-harvesting environment to increase their harvest of open access species. Without these harvest restrictions it is possible that some small entities could be disadvantaged by the Non-AFA Trawl CPs increasing their harvest. The small entities that could be impacted are the harvesters and processors in the BSAI and GOA that utilize the species not directly allocated to the vessels in the Non-AFA Trawl CP sector.

An increased allocation to the CDQ groups and communities would benefit those persons that receive benefits from the CDQ program. The cost of that increase would be borne by the vessels that traditionally harvest the allocated species. Those entities are represented by the BSAI vessels in Tables Table 5-1 and Table 5-2. An analysis of this issue can be found in Section 3.2.2.

PCC, 2005. Pollock Conservation Cooperative and High Seas Catcher's Cooperative Final Joint Annual Report to the NPFMC. <http://www.atsea.org/>. January 31, 2005

NMFS, 2002. Environmental Assessment/Initial Regulatory Flexibility Analysis for the Total Allowable Catch Specifications for the Year 2003. NMFS Alaska Region. September 2002.

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<sup>65</sup> Estimates in the number of entities in the fishery are based on personal communication with representatives and members of the non-AFA trawl CP sector.

## 6 CONSISTENCY WITH OTHER APPLICABLE LAWS OR POLICIES

### 6.1 Consistency with the Magnuson-Stevens Act

#### 6.1.1 National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Act (Act), and a brief discussion of the consistency of the proposed alternatives with those National Standards, where applicable.

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

A portion of the BSAI yellowfin sole, rock sole, Atka mackerel, flathead sole, and AI Pacific ocean perch ITAC will be allocated to the Non-AFA Trawl CP sector. Vessels within that sector that choose to join a cooperative will then be able to harvest the cooperative's allocation of those species in a rationalized manner. When harvesting these species in the cooperative, members will be constrained by the cooperative's allocation. NOAA Fisheries will hold members of the cooperative responsible for staying within their allocation. Vessels outside the cooperative will continue to be managed as they were in the past. The amendment also contains options that would allow NOAA Fisheries to move species from the open access fisheries to the cooperative if it is determined they will not be harvested. This could help achieve optimum yield from the fishery without overfishing the species. BSAI yellowfin sole, rock sole, Atka mackerel, flathead sole, and AI Pacific ocean perch stocks are not currently in danger of overfishing and are considered stable. Overall yield in terms will be unaffected by the allocations if the rollover provisions function properly. If they do not, the optimum yield from the rock sole fishery is most likely to be impacted. In terms of achieving 'optimum yield' from the fishery, the Act defines 'optimum', with respect to yield from the fishery, as the amount of fish which:

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

Overall benefits to the Nation may be affected by these trade-offs, though our ability to quantify those effects is quite limited. While distributional impacts across fishing industry sectors are certainly implied by the alternatives, overall net benefits to the Nation would not be expected to change to an identifiable degree between the alternatives under consideration.

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

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

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

The annual TAC is set for BSAI yellowfin sole, rock sole and flathead sole according to the Council and NMFS's harvest specification process. Atka mackerel TACs are set currently set for the Eastern Aleutian Islands/Bering Sea, Central Aleutian Islands, and Western Aleutian Islands. Pacific ocean perch TACs are

set for the Bering Sea, Eastern Aleutian Islands, Central Aleutian Islands, and Western Aleutian Islands areas. NMFS conducts the stock assessment for these species and makes allowable biological catch recommendations to the Council. The Council sets the TAC for these species based on the most recent stock assessment and survey information. These BSAI stocks will continue to be managed as a single stock under the alternatives for establishing a Non-AFA Trawl CP sector allocation, although separate quotas for each sector would be established and monitored in-season by NMFS.

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.

Allocation percentages being considered are based on industry sectors. Nothing in the alternatives considers residency as a criteria for the Council's decision. Residents of various states, including Alaska and the Pacific Northwest, participate in each of the major sectors affected by these allocations. Within each sector, no further allocations are made to individual fishermen by NOAA Fisheries<sup>66</sup>, nor are discriminations made among fishermen based on residency or any other criteria. While allocations are made based on industry sectors, it is possible for entities to have exclusive privileges to harvest amounts of a species inside the cooperative. The excessive share options considered would limit the total amount of species a permit holder would be allowed to take into the cooperative. This amendment also contains discussions of potential caps on the amount of fish individual vessels in the cooperative could harvest.

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.

The wording of this standard was changed in the recent Magnuson-Stevens Act authorization, to 'consider' rather than 'promote' efficiency. Efficiency in the context of this change refers to economic efficiency, and the reason for the change, essentially, is to de-emphasize to some degree the importance of economics relative to other considerations (Senate Report of the Committee on Commerce, Science, and Transportation on S. 39, the Sustainable Fisheries Act, 1996). The analysis presents information relative to these perspectives and provides information on the economic improvements that could be realized under a cooperative harvesting system. The impacts of the flatfish retention standards set to be implemented in 2006 were a driving force in the development of this amendment. Flatfish fishermen were concerned that without an improvement in their operating environment (in this case those that can be obtained under cooperatives), it would not be possible to remain economically viable under the new retention standards.

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

This amendment contains options that would allow portions of the TAC that are projected to go unharvested to be rolled-over from the general trawl allocation to the Non-AFA Trawl CP sector. This contingency plan was established to take into account the possibility that members of that sector will not harvest their entire allocation. The program does not contain a provision to roll catch from the Non-AFA Trawl CP sector to the other sector, because they have historically been the primary harvesters of these species.

The yellowfin sole threshold option contains its own plan to redistribute yellowfin sole among the sectors at different levels than are calculated under components 3 and 4. That option also could allow the

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<sup>66</sup> Allocations are made to the cooperatives and the cooperatives are then allowed to divide the allocation among its members based upon a predefined agreement.

Regional Administrator to rollover amounts of the TAC that is projected to go unused to the sector whose harvest is constrained. This is a two-way rollover, where the other options would only allow species to be rolled to the Non-AFA Trawl CP sector.

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

All of the alternatives under consideration appear to be consistent with this standard.

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.

Many of the coastal communities in Alaska and the Pacific Northwest participate in the crab and groundfish fisheries in one way or another, whether it be processing, support businesses, or as the harbor/home port to fishermen and processing workers. Major groundfish and crab ports in Alaska that process catch from the Bering Sea include Dutch Harbor, St. Paul, Akutan, Sand Point, King Cove, and Kodiak. Additionally, the Seattle, Washington area is home port to many catcher and catcher processor vessels operating in these fisheries. Summary information on these coastal communities is provided in the "Faces of the Fisheries" (NPFMC 1994), the Steller Sea Lion SEIS (NMFS 2001b) and the Final Programmatic SEIS (2004b).

Twenty-seven catcher processors appear to be eligible for the Non-AFA Trawl CP sector. Of these vessels, nearly all are based out of Seattle or other Washington communities. A few catcher processors are based in Rockland, Maine. Because all the harvesters are catcher processor vessels, they do not, in general, deliver fish to shorebased processing facilities for first processing. Catcher vessels that do deliver their catch to shorebased plants have traditionally played a small role in these fisheries.

This amendment could also increase the allocation of species to the CDQ program. Currently the CDQ program is allocated 7.5 percent of the groundfish TAC of species included in this amendment. Increasing the CDQ allocation of those species to 10 percent could increase to CDQ program revenues by \$250,000. A complete discussion of the impacts that changing the CDQ allocation would have on the various groups are presented in Section 3.2.2 and 3.2.5 of this document.

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.

This amendment package is being considered to help members of the Non-AFA Trawl CP sector meet the new groundfish retention standards that are being implemented in 2006. Those standards will require vessels to retain 75 percent of their groundfish harvests in 2006 and that retention rate will increase to 85 percent by 2008. It is expected that fishing under a cooperative structure will allow members of the Non-AFA Trawl CP sector to reduce bycatch and retain more of the fish that are incidentally harvested.

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

The alternatives under consideration appear to be consistent with this standard. None of the alternatives or options proposed to modify the Non-AFA Trawl CP allocation percentages would change safety requirements for fishing vessels. Allowing these vessels to choose when to fish gives them the opportunity to fish under better conditions. Whether they take advantage of the opportunities will likely depend on the economic consequences of those decisions.

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

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

The alternative actions considered in this analysis are described in Section 2.5 of this document. The impacts of these actions on participants in the fisheries and fishing communities are the topic of Sections 3.0 and 4.0

#### **6.1.2.1 Fishery Participants**

The actions taken as part of this amendment directly impact the participants in the BSAI flatfish fisheries, the CDQ groups, and CDQ communities. Participants in the Non-AFA Trawl CP sector have traditionally harvested the majority of the BSAI species allocated under this amendment. During the more recent years, the participants in that sector have harvested over 90 percent of each of those species. Vessels in the Non-AFA Trawl CP sector have also traditionally contracted to harvest the CDQ allocations of these species. Summaries of the sector's can be found in Section 3.2.1.3 and 3.2.1.4 of this document.

A total of 26 vessels appear to qualify for the Non-AFA Trawl CPs sector. Seventeen of the vessels appear to operate out of Seattle, 6 vessels out of other Washington communities, and 3 vessels out of Maine. Several of the companies own and operate more than one vessel. Data that are currently available does not allow the analysts to exactly define ownership in this fleet. However, information produced in Amendment 79 (NPFMC, 2003) indicates that companies own from 1 to 5 of the qualified vessels.

The vessels range in length from 103' LOA to 295' LOA. The largest vessels are reported to harvest and retain more fish than smaller vessels, on average. Because the allocations to the Non-AFA Trawl CP sector are based on total or retained catch, the larger vessels will typically be assigned a percentage of the TAC to take into a cooperative or the open assess than smaller vessels.

Portions of the TACs that are not allocated to the Non-AFA Trawl CP sector may be harvested by the AFA Catcher Processors, AFA Catcher Vessels, or other trawl catcher vessels. During 2004, 3 AFA CPs harvested yellowfin sole as a directed fishery. A small number of AFA Catcher Vessels have also participated in harvesting yellowfin sole during the spring fishery. Members of the AFA fleets generally do not participate in directed fishing for other Amendment 80 species. The number of Non-AFA catcher vessels that participate in these fisheries is also very limited.

#### **6.1.2.2 Fishing Communities**

The fishing communities that are expected to benefit from this program are the locations the vessels offload, take on supplies, and the owners and crew live. The Non-AFA Trawl Catcher Processor fleet, as stated in Section 5.2.1, is primarily from Washington. Seattle, Bellingham, Duval, Port Orchard, and South Bend are listed as the owner's residence for the Washington vessels. Seattle is home to the majority of the vessels/owners and should realize the most benefits, followed by Bellingham and then the other three communities. See Appendix 1 for a detail community profile of the Seattle area. Rockland, Maine is the other community that is expected to benefit as a result of being affiliated with vessels in this fleet.

Information on the residence of the crew and processing workers on these vessels is not available. Those communities will benefit to the extent that workers spend their income in those locations. It is not possible to estimate the total benefits to each community given existing data.

Alaska communities that provide crew members and support services to the fleet will also benefit. The services these communities supply are typically related to shipyard work, providing supplies to the fleet

while they are in Alaska, or off-loading product. These communities are likely to be located close to the harvesting areas and include port communities like Unalaska, Kodiak, and others. A primary source of regional and community information is the, *Sector and Regional Profiles of the North Pacific Groundfish Fisheries – 2001* (Northern Economics, Inc. and EDAW, Inc., 2001).

Increasing the allocation to CDQ program will benefit the Western Alaska communities that are part of the CDQ program. Any increases in the allocation to those groups will reduce the percentage of the TAC that is available to the Non-AFA Trawl CP sector and other Non-CDQ harvesters. Members of those sectors can still harvest the CDQ allocation if they reach an agreement with a CDQ group to harvest their catch. Part of that agreement will include the fishing company paying the CDQ group a royalty to harvest the fish. A complete discussion of the CDQ allocation alternatives may be found in Section 3.2.1.2 of this document.

### **6.1.2.3 Participants in Fisheries of Adjacent Areas**

Neither the proposed action nor alternatives considered would significantly affect participants in the fisheries conducted in adjacent areas under the authority of another Council.

## **6.2 Marine Mammal Protection Act (MMPA)**

The alternatives analyzed in this action are not likely to result in any significant impact to marine mammals.

## **6.3 Coastal Zone Management Act**

This action is consistent with the Coastal Zone Management Act.

## **6.4 Executive Order 12898 Environmental Justice**

E.O. 12898 focuses on environmental justice in relation to minority populations and low-income populations. The EPA defines environmental justice (EJ) as the: "fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies." This executive order was spurred by the growing need to address the impacts of environmental pollution on particular segments of our society. This order (Environmental Justice, 59 Fed. Reg. 7629) requires each Federal agency to achieve environmental justice by addressing "disproportionately high and adverse human health and environmental effects on minority and low-income populations." The EPA responded by developing an Environmental Justice Strategy focusing the agency's efforts in addressing these concerns.

In order to determine whether environmental justice concerns exist, the demographics of the affected area should be examined to determine whether minority populations and low-income populations are present, and if so, a determination must be made as to whether implementation of the alternatives may cause disproportionately high and adverse human health or environmental effects on these populations. Environmental justice concerns typically embody pollution and other environmental health issues, but the EPA has stated that addressing environmental justice concerns is consistent with NEPA and thus all Federal agencies are required to identify and address these issues.

The Non-AFA Trawl CP sector is based in the States of Washington and Maine, with Washington being home to over 88 percent of the vessels. The importance of fisheries to these regions and their population and minority profiles are included in Chapter 3 of the Steller Sea Lion SEIS (Section 3.12.2.1) and Appendix F(4)(NMFS 2004b). The data do not exist to determine where the deck and processing crews of these vessels reside. Those communities will also be impacted by this action. These impacts will be more pronounced if some of the vessels leave the fishery in an effort to reduce excess harvesting capacity.

Members of the 65 Western Alaskan communities associated with the six CDQ groups will be impacted by this action. The CDQ groups could share up to \$250,000 in additional CDQ royalties based on information provided in Section 3.2.1.2. Those communities are considered to have relatively low income levels and the residents have limited economic opportunities. Royalties, to the CDQ program, would be paid by members of the groundfish fleet that harvest these species for their CDQ partners. The royalty payments could be considered as transfers in income from the harvesting sector, likely members of the Non-AFA Trawl CP sector, to the CDQ program. Since most of the harvesting fleet is located in Seattle and Billingham, those communities will realize the greatest reduction in benefits.

Because the harvesting and processing of these species is primarily done at-sea, the environmental impacts of these actions on low-income individuals are expected to be small. The support of these vessels in Alaskan communities will bring additional income to those regions and should have little impact on the health of the residents of those communities. Therefore, regardless of whether one sector would receive an economic benefit upon approval of this action relative to the status quo, it has been determined that the proposed actions do not appear to have any significant individual or cumulative environmental or human health effects, thus no distinct population, minority or otherwise, should be affected in this regard.

## **6.5 Management Policy of the BSAI Groundfish FMP**

The alternatives discussed in this action accord with the management policy of the BSAI Groundfish FMP. The Council's management policy includes an objectives that aims to "further decrease excess fishing capacity and overcapitalization by extending programs such as community or rights-based management to some or all groundfish fisheries," (BSAI Groundfish FMP chapter 2). By developing a sector allocation for the Non-AFA Trawl CP sector, and allowing the sector to form cooperatives, the Council is consistent with its management policy.

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